

PLAN HOLDER NO. _____

CITY OF STOCKTON MUNICIPAL UTILITIES DEPARTMENT

NOTICE TO BIDDERS
INSTRUCTIONS TO BIDDERS
BID
CONTRACT
SPECIAL PROVISIONS

FOR CONSTRUCTION OF

ELECTRICAL UPGRADES WATER WELL NO. 26

PROJECT NO. UH24008

CONTRACTOR MUST HAVE A CLASS "C-10" LICENSE
STOCKTON, CALIFORNIA



Bid Opens: **THURSDAY, MAY 2, 2024, 2:00 p.m.**

FOR INFORMATION
REGARDING THIS PROJECT CALL
(209) 937-8700 or (209) 937-8716 Extension
(Do not return - Please recycle)

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CITY OF STOCKTON
MUNICIPAL UTILITIES DEPARTMENT

CONTRACT DOCUMENTS

FOR CONSTRUCTION OF

**ELECTRICAL UPGRADES
WATER WELL NO. 26**

PROJECT NO. UH24008

APPROVED BY:

Ali M. Hossain

DEPUTY MUD DIRECTOR, ENGINEERING & DEPARTMENT SERVICES

3/19/24
DATE

PREPARED BY:

CITY OF STOCKTON
MUNICIPAL UTILITIES DEPARTMENT
2500 NAVY DRIVE
STOCKTON, CA 95206

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SECTION 00010 - TABLE OF CONTENTS

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS

Section

00010	Table of Contents
00020	Notice Inviting Bids
00100	Instructions to Bidders
1.0	Work to be Done
2.0	Examination of Contract Documents
3.0	Inspection of Site
3.1	Pre-bid Conference
4.0	Interpretation of Contract Documents
5.0	Postponement of Opening
6.0	Opening of Bids
7.0	Preparation of Bid Forms
8.0	Bidder's Signature and Authority
9.0	Erasures and Corrections
10.0	Bid Irregularities
11.0	Modification of Bid
12.0	Withdrawal of Bids
13.0	Addenda
14.0	Bid Prices
15.0	Bid Guaranty
16.0	Qualification of Bidder
17.0	Subcontractors
18.0	Major Equipment Items
19.0	Substitutions During Bidding
20.0	Bidders Interested in More Than One Bid

- 21.0 Sheeting, Shoring, and Bracing**
- 22.0 Wage Rates**
- 23.0 Offer of Assignment of Antitrust Actions**
- 24.0 Assignment of Contract**
- 25.0 Rejection of Bids**
- 26.0 Contract and Bonds**
- 27.0 Award of Contract**
- 28.0 Execution of Contract**
- 29.0 Business License**
- 30.0 Construction and Demolition Debris**
- 31.0 Escrow of Bid Documents**
- 32.0 Bid Protests**
- 33.0 Local Employment**
- 34.0 Community Workforce and Training Agreement**

00220 Geotechnical Data

BIDDING REQUIREMENTS

00300 List of Bid Items

00500 Construction Contract

00700 General Conditions

1.0 GENERAL

- 1.1 Intent of Contract Documents
- 1.2 Discrepancies and Omissions
- 1.3 Headings
- 1.4 Penalty for Collusion
- 1.5 Successors and Assigns
- 1.6 Assignment to City
- 1.7 Rights and Remedies

2.0 ADMINISTRATION

- 2.1 Administration of the Contract
- 2.2 City's Representative
- 2.3 Construction Management
- 2.4 Design Consultant

3.0	CITY
3.1	General
3.2	Attention to Work
3.3	Inspection
3.4	City's Right to Carry Out the Work
3.5	City's Right to Use or Occupy
3.6	City's Right to Perform Work and to Award Separate Contracts
4.0	CONTRACTOR
4.1	Office
4.2	Contractor's Representative
4.3	Construction Procedures
4.4	Contractor's Employees
4.5	Subcontractors
4.6	Contractor's Equipment and Facilities
4.7	Public Safety and Convenience
4.8	City-Contractor Coordination
4.9	Permits
4.10	Contractor's Responsibility for the Work and Materials
4.11	Laws to be Observed
4.12	Safety
5.0	CONTROL OF WORK AND MATERIALS
5.1	Means and Methods
5.2	City Furnished Materials
5.3	Defective and Unauthorized Work
5.4	Unnoticed Defects
5.5	Right to Retain Imperfect Work
6.0	PROGRESS OF THE WORK
6.1	Beginning of Work
6.2	Time of Completion
6.3	Delays
6.4	Time Extensions
6.5	Liquidated Damages
6.6	Termination By City for Cause
6.7	Suspension By The City For Convenience
6.8	Termination By City for Convenience
6.9	Temporary Suspension of Work
7.0	SCOPE OF WORK - CHANGES IN THE WORK
7.1	Changes
7.2	Change Orders
7.3	Differing Site Conditions
7.4	Value Engineering Change Proposals (VECP)
7.5	Resolution of Disputes
7.6	Assertion of Claims
7.7	Dispute Resolution
8.0	PAYMENT
8.1	Scope of Payment
8.2	Partial Payments
8.3	Partial Payments - Inclusion of Materials on Hand

- 8.4 Right to Withhold Amounts
- 8.5 Substantial Completion
- 8.6 Final Inspection and Payment
- 8.7 Warranty of Title

9.0 EXISTING UTILITIES

- 9.1 General
- 9.2 Notification and Location
- 9.3 Damage and Protection
- 9.4 Utility Relocation and Rearrangement

10.0 APPLICABLE LAW/CODE REQUIREMENTS

11.0 USE OF SITE AND CLEAN UP

12.0 CORRECTION OF DEFFECTIVE WORK AND GUARANTEE TO REPAIR PERIOD

00800 Supplementary Conditions

1.0 LOCAL EMPLOYMENT

2.0 COMMUNITY WORKFORCE AND TRAINING AGREEMENT

00810 Modifications to General Conditions

00820 Liability and Insurance Requirements

1.0 INDEMNIFICATION

2.0 INSURANCE REQUIRMENTS

DIVISION 1 - GENERAL REQUIREMENTS

01010 Summary of Work

1.0 WORK COVERED BY CONTRACT DOCUMENTS

2.0 CONTRACT ADMINISTRATION

- 2.1 Name of Construction Manager
- 2.2 Name of Design Consultant
- 2.3 Name of City's Representative

3.0 TIME ALLOWED FOR COMPLETION

4.0 DAMAGES FOR DELAYS

5.0 WEATHER DAYS

6.0 WORK SEQUENCE AND CONSTRAINTS

7.0 OCCUPANCY REQUIREMENTS

- 8.0 CITY FURNISHED MATERIALS**
- 8.1 Contract Documents
- 9.0 TRENCH EXCAVATION**
- 10.0 WORK UNDER OTHER CONTRACTS**
- 11.0 CONTRACTOR'S WORK PERCENTAGE**
- 12.0 UNDERGROUND FACILITIES**
- 13.0 LEGAL AND CITY HOLIDAYS**

01015 General Provisions

- 1.0 GENERAL**
- 1.1 Description
- 1.2 Guarantee
- 1.3 Contractors License
- 1.4 Patents
- 2.0 PRODUCTS (Not applicable in this Section)**
- 3.0 EXECUTION**
- 3.1 Public Complaints
- 3.2 Guarantees and Warranties
- 3.3 Precedence of Contract Documents
- 3.4 Care and Protection of Property
- 3.5 Field Check of Existing Improvements
- 3.6 Protection of Existing Improvements
- 3.7 Cooperation With Others
- 3.8 Unfavorable or Hazardous Construction Conditions
- 3.9 Testing and Substantial and Final Completion

01025 Measurement and Payment

- 1.0 GENERAL**
- 1.1 Measurement of Quantities
- 1.2 Units of Measurement
- 1.3 Certified Weights
- 1.4 Methods of Measurement
- 2.0 DESCRIPTION OF BID ITEMS**
- 2.1. General
- 2.2 Duration of Prices
- 2.3 Bid Items
- 2.4 Payment for Mobilization
- 2.5 Payment for Startup and Demobilization
- 3.0 CONTRACTOR'S COST BREAKDOWN**

01035 Modification Procedures

- 1.0 CHANGES IN CONTRACT PRICE**
- 2.0 NEGOTIATED CHANGE ORDERS**
- 3.0 FORCE ACCOUNT PAYMENT**
- 4.0 UNIT PRICE ADJUSTMENTS DUE TO INCREASED OR DECREASED QUANTITIES**
- 5.0 TIME EXTENSIONS FOR CHANGE ORDERS**
- 6.0 CONTRACTOR CHANGE REQUESTS**
- 7.0 VALUE ENGINEERING COST PROPOSALS**

01040

Coordination

- 1.0 GENERAL**
- 2.0 COOPERATION WITH OTHERS**
- 3.0 ORGANIZATION AND COORDINATION**
 - 3.1 Monthly Reports
 - 3.2 Daily Reports
 - 3.3 Correspondence
- 4.0 SYSTEM OUTAGE REQUESTS**
- 5.0 SEQUENCING OF THE WORK**
- 6.0 ACCESS TO PROJECT FACILITIES**

01050

Field Engineering

- 1.0 CHECK OF EXISTING IMPROVEMENTS**
- 2.0 DATUM**
- 3.0 LINES AND GRADES**

01060

Regulatory Requirements

- 1.0 APPLICABLE CODES**
 - 1.1 Laws and Regulations
 - 1.2 Codes
 - 1.3 Specifications
- 2.0 LICENSES, FEES, AND PERMITS**
 - 2.1 Contractor's License
 - 2.2 Business License
 - 2.3 Encroachment Permit (City of Stockton)

01090	References
	1.0 DEFINITIONS
	2.0 ABBREVIATIONS
01200	Project Meetings
	1.0 PRE-CONSTRUCTION CONFERENCE
	1.1 Attendees
	1.2 Agenda
	1.3 Minutes
	2.0 PROGRESS MEETINGS
	2.1 Schedule
	2.2 Attendees
	2.3 Agenda
	2.4 Minutes
	3.0 CONFERENCES
	4.0 POST CONSTRUCTION MEETING
01300	Submittals
	1.0 DESCRIPTION
	2.0 SUBMITTAL-GENERAL REQUIREMENTS
	3.0 SCHEDULE OF VALUES
	4.0 PROGRESS SCHEDULE
	5.0 SHOP DRAWINGS
	6.0 SAMPLES
	7.0 MATERIALS LISTS AND EQUIPMENT DATA
	8.0 INSTRUCTION MANUALS
	9.0 INSTALLATION INSTRUCTIONS
	10.0 CITY PERSONNEL TRAINING PLAN
	11.0 OTHER SUBMITTALS
	12.0 STORAGE INSTRUCTIONS
	13.0 TOOLS, ACCESSORIES, SPARE PARTS, AND MAINTENANCE MATERIALS
	14.0 RECORD DRAWINGS AND SPECIFICATIONS

- 15.0 REVISION OF SUBMITTALS**
- 16.0 CERTIFICATES**
- 17.0 EARTHQUAKE DESIGN AND RESTRAINT**
- 18.0 CONSTRUCTION PHOTOGRAPHS**
 - 18.1 Summary
 - 18.2 Submittals
 - 18.3 Media
 - 18.4 General

01310 Progress Schedule

- 1.0 CONSTRUCTION SCHEDULE**
 - 1.1 Base Schedule
 - 1.2 Responsible Person
 - 1.3 Reports
- 1.0 CONSTRUCTION SCHEDULE**
 - 1.1 General
 - 1.2 Preliminary Progress Schedule
 - 1.3 Base Schedule
- 2.0 WEATHER CONDITIONS**
- 3.0 UPDATES**
 - 3.1 Submittal Period
 - 3.2 Schedule Review
 - 3.3 Schedule Revisions
- 4.0 TIME IMPACT ANALYSES**
 - 4.1 Requirement
 - 4.2 Delays
 - 4.3 Submittal
- 5.0 WEEKLY ACTIVITIES PLAN**
- 6.0 CASH FLOW PROJECTION**
- 7.0 WORKHOUR PROJECTION**

01400 Quality Control

- 1.0 QUALITY CONTROL**
- 2.0 INSPECTION**
- 3.0 SAMPLES AND TESTS**

- 3.1 Sampling
- 3.2 Testing
- 3.3 Test Standards

01500 Construction Facilities and Temporary Controls

1.0 GENERAL

2.0 TEMPORARY UTILITIES

- 2.1 Electrical Service
- 2.2 Water
- 2.3 Temporary Lightning
- 2.4 Heating and Ventilation
- 2.5 Sanitary Conveniences

3.0 CONSTRUCTION FACILITIES

- 3.1 Staging and False Work
- 3.2 Temporary Enclosures
- 3.3 Warning Devices and Barricades
- 3.4 Above Grade Protection
- 3.5 Use of Explosives

4.0 PROTECTION AND RESTORATION OF PROPERTY

5.0 PROJECT SECURITY

- 5.1 Fire Extinguisher
- 5.2 First Aid
- 5.3 Temporary Fences

6.0 ACCESS ROADS

7.0 SPECIAL CONTROLS

- 7.1 Dust Control
- 7.2 Mud Control
- 7.3 Noise Abatement
- 7.4 Working Hours
- 7.5 Drainage Control
- 7.6 Construction Cleaning
- 7.7 Dispose of Material
- 7.8 Parking and Storage Areas

8.0 TRAFFIC REGULATION

- 8.1 General
- 8.2 Haul Routes
- 8.3 Traffic Control

9.0 PROJECT OFFICE

10.0 CONTRACTOR'S SAFETY RULES

01600 Material and Equipment

1.0 STORAGE OF MATERIALS

- 2.0 HAZARDOUS MATERIALS**
- 3.0 MATERIAL AND EQUIPMENT SUBSTITUTIONS**
 - 3.1 General
 - 3.2 Substitutions
 - 3.3 Modifications and Costs

01660 System Testing

01670 Training

- 1.0 GENERAL**
- 2.0 INSTRUCTIONS**
- 3.0 SCHEDULING**
- 4.0 INSTRUCTION PROGRAM**
- 5.0 LOCATION**
- 6.0 RECORD OF TRAINING SESSIONS**

01700 Contract Closeout

- 1.0 INSTRUCTION MANUALS**
- 2.0 EQUIPMENT START-UP**
- 3.0 FINAL CLEANING**
 - 3.1 Final Clean-up
 - 3.2 Final Building Clean-up
- 4.0 PROJECT COMPLETION**
 - 4.1 Substantial Completion
 - 4.2 Final Completion
 - 4.3 Project Record Documents
- 5.0 GUARANTEE**

TECHNICAL SPECIFICATIONS

GENERAL PREVAILING WAGES

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SECTION 00020 - NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that sealed bids are invited by the City of Stockton, California to provide all labor, materials, equipment, and perform all work necessary for the construction of the ELECTRICAL UPGRADES, WATER WELL NO. 26 and in accordance with the plans and specifications for Project Number UH24008.

The work includes: Removal and disposal of all items shown on the Demolition Plan of Drawing No. E3, furnish and installation of a new transformer and its concrete pad, electrical conduits, wirings and SCADA and instrumentation connection per Drawing No. E-5, sawcut, trench, backfill and patch of all trenches and testing and termination of Motor Control Center (MCC) and pump feeders per Plans and Specifications.

The work shall be performed in accordance with the intent of the Contract Documents, including as stated in the Contract and the Technical and Special Provisions, excluding only the work indicated or specified to be provided by the City or others under separate contract or other arrangement. In the event of a conflict between the Project Specifications and the City of Stockton Standard Specifications and Plans, the Project Specifications shall take precedence.

The project specifications and plans can be downloaded from the City of Stockton's website at [http://www.stocktongov.com/services/business/bidflash/mud.html?dept=Municipal Utilities](http://www.stocktongov.com/services/business/bidflash/mud.html?dept=Municipal%20Utilities); however, official bid documents including plans, specifications, and a plan holder number, must be obtained from ARC Document Solutions in order to bid this project. The completed official sealed bid packet, including the plan holder number, must be delivered to the Office of the City Clerk, City Hall, 425 North El Dorado Street, Stockton, California 95202, up to, but not later than 2:00 p.m., on Thursday, May 2, 2024.

A non-mandatory pre-bid conference will be held at 10:00 a.m., Thursday, April 11, 2024, at the City of Stockton, Department of Municipal Utilities, Water Resources Division, 11373 N. Lower Sacramento Road, Lodo, California 95242.

Prospective bidders shall monitor City's website/bid flash for any project addenda or updates.

As prescribed in the Instructions to Bidders for this project, a bid guaranty in an amount not less than ten percent [10%] of the total base bid price, plus additives, if any, and conforming to the prescribed bidding procedures is required to be submitted with each bid, as a guaranty to be forfeited should the bidder, if awarded the Contract, fail to enter into the same, or fails to furnish in a timely manner the bonds and/or proof of insurance. Each bid shall also be accompanied by the Non-Collusion Declaration, and all the other required documents and information furnished in the official bidding documents. Each bid shall be enclosed in a sealed envelope clearly marked "BID" and shall indicate the project name, project number, bid opening date, and contractor's name and address. Bidders and the public are invited to be present at the public opening and declaration of said bids. Official bid documents received after the designated time will not be accepted. No bidder may withdraw its bid for a period of sixty (60) days after the date set for the opening of bids.

The project is to be substantially completed within one hundred fifty (150) consecutive calendar days from the date specified in the Notice to Proceed, and final completion will be achieved thirty (30) consecutive calendar days thereafter. Time for commencement and completion of the work is consequential, and time is to be of the essence of the Contract.

All bidders shall be licensed under the provisions of Chapter 9, Division 3 of the Business and Professions Code of the State of California. The Contractor shall possess a valid Class " license at the time the bid is submitted and retain the license through the duration of the project. Failure to possess the specified license shall render the bid as non-responsive. The successful Contractor shall obtain a City of Stockton business license prior to contract execution and retain the license through the duration of the project.

All bidders must comply with the State of California Contractor Registration Requirements, which states all Contractors or subcontractors 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 this chapter, unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5.

In compliance with Senate Bill 854 and the California Labor Code, all bidders shall include with their bid proof of registration from the Department of Industrial Relations that includes the contractor's legal name, registration number, license type/number, registration date and expiration date, for every contractor and subcontractor, regardless of tier. Submittal of subcontractor's registration information regardless of tier is due no later than four business days after bid opening.

The general prevailing rate of wages for each craft or type of worker or mechanic needed to perform the Contract is on file with the City of Stockton. Bidders are hereby notified that the successful bidder and any subcontractor under that contract shall pay prevailing wage rates in performing the Contract.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractors must submit their certified payroll records directly to the Division of Labor Standards Enforcement Compliance Monitoring Unit, as well as the City of Stockton.

Pursuant to Stockton Municipal Code Section 3.68.090 preference shall be given to the purchase of supplies, materials, equipment, and contractual services from local merchants, quality and price being equal. Local merchants who have a physical business location within the boundaries of San Joaquin County, and who have applied for and paid a business license tax and registration fee pursuant to Stockton Municipal Code Title 5, Chapter 5.08, License Taxes, shall be granted two (2) percent bid preference. Local merchants who have a physical business location within the boundaries of the City of Stockton Municipal Code Title 5, Chapter 5.08, License Taxes, shall be granted five (5) percent bid preference. This section is intended to provide preference in the award of certain City contracts to encourage businesses to move into and expand within the City.

For contracts valued at \$100,000 and above, pursuant to Stockton Municipal Code Section 3.68.095 the contractor and all subcontractors shall make a good faith effort to employ at least 50% of the workforce on this project from residents, as measured by total labor work hours. Failure of any contractor or subcontractor to comply with these requirements shall be deemed a material breach of the contract or subcontract. Contractors and subcontractors shall maintain records necessary for monitoring their compliance with Section 3.68.095.

For contracts valued at \$1,000,000 and above, pursuant to the implementation of the Community Workforce and Training Agreement (CWTA) adopted by the City Council on July 26, 2016, the successful bidder shall be required to comply with the provisions of the CWTA.

If the Contract is to be awarded, the Contract will be awarded to the lowest responsive, responsible bidder as defined in the Stockton Municipal Code; provided, however, the City Council reserves the right to reject all bids, and to re-advertise for bids or to provide for the work to be done by the City of Stockton's internal work force.

The successful bidder shall be required to furnish a Labor and Materials Bond and a Faithful Performance Bond, each in the sum of one hundred percent (100%) of the contract bid price. Said bonds shall be furnished by a company authorized to issue surety bonds in the State of California, on official forms furnished by the City, and said bonds shall be executed by the surety and contractor before or concurrently with the signing of the Contract. The acceptable surety will meet the minimum standard as set forth in the contract documents.

For information on technical data, contact Amin Kazemi, Municipal Utilities Department, (209) 937-8716, e-mail: amin.kazemi@stocktonca.gov. For information regarding the cost for the reproduction of the official bid package or to obtain a plan holders list, please contact ARC Document Solutions at 1421 N. El Dorado Street, Stockton, CA 95202, (209) 464-8724 or visit their plan room at https://order.e-arc.com/arcEOC/PWELL_PublicList.asp?mem=23.

ELIZA R. GARZA, CMC
CITY CLERK
CITY OF STOCKTON

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1.0 WORK TO BE DONE

It is the intention of the City to construct improvements as shown and set forth on the plans, specifications, profiles and detailed drawings, and in the locations shown on the drawings. All the work is particularly set forth in the plans and specifications, and all said work, together with all other work incidental thereto, is included. By submitting a bid, the bidder represents that it has the ability, qualifications and experience to perform the proposed work.

The work includes the furnishing of all labor, materials, incidentals and equipment necessary for the Electrical Upgrades, Water Well No. 26 (Project No. P23005). The Contractor shall be required to provide, at its own cost and expense, all necessary insurance, as required by law or these specifications, and shall pay the cost and expense of all incidental matters herein required.

2.0 EXAMINATION OF CONTRACT DOCUMENTS

Each bidder shall thoroughly examine and become familiar with the Contract Documents. The submission of a bid shall constitute an acknowledgment upon which the City may rely, and shall constitute conclusive evidence, that the bidder has thoroughly examined and is familiar with the Contract Documents. The failure or neglect of a bidder to receive or examine any of the Contract Documents shall in no way relieve it from any obligation with respect to its proposal or to the Contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of any Contract Documents.

3.0 INSPECTION OF SITE

Bidders are required to inspect the site of the work to satisfy themselves by personal examination or by such other means as they may prefer, of the location of the proposed work, and of the actual conditions, including subsurface, of and at the site of work. If, during its examination, a bidder finds facts or conditions which appear to conflict with the letter or spirit of the bidding documents, the Bidder may apply to the City, in writing, for additional information and explanation before submitting its bid.

Submission of a bid by the bidder shall constitute conclusive evidence that, if awarded the Contract, it has relied and is relying on its own examination of:

- a. The site of the work.
- b. Access to the site.
- c. All other data and matters requisite to the fulfillment of the work and on its own knowledge of existing facilities on and in the vicinity of the site of the work to be constructed under the Contract.
- d. The conditions to be encountered.
- e. The character, quality and scope of the proposed work.
- f. The quality and quantity of the materials to be furnished.
- g. The requirements of the bid, the plans, the specifications, and the other Contract Documents.

The information provided by the City is not intended to be a substitute for, or a supplement to the independent verification by the bidder to the extent such independent investigation of site conditions is deemed necessary or desirable by the bidder.

3.1 PRE-BID CONFERENCE

The City may hold a pre-bid conference prior to the bid opening date. The pre-bid conference is held to answer questions bidders may have, provide bidders with access to the site, discuss important contract considerations, and provide any clarifications that may have come to the City's attention.

Bidders may be required to attend the pre-bid conference on the date indicated on the specifications. If any bidder fails to attend the pre-bid conference when it is indicated as being mandatory on the specifications, then their bid will be deemed non-responsive, which will result in bid rejection.

4.0 INTERPRETATION OF CONTRACT DOCUMENTS

Oral representations or interpretations by the City as to the meaning of the Contract Documents shall have no legal or binding effect. Requests for an interpretation shall be made in writing and delivered at least ten (10) days before the time announced for opening the bids to:

Amin Kazemi, P.E., M.S.
Project Manager
Municipal Utilities Department
2500 Navy Drive
Stockton, CA 95206

The City's response to requests to clarify the source of materials, equipment, suppliers or any other such matter which does not modify, change, increase, or decrease the scope of work requires no action by the City other than a response to the bidder requesting the clarification. The City's response to written requests to clarify possible ambiguous or incomplete statements or designs, or any other such clarification which modifies, changes, increases or decreases the scope of work, requires issuance of an addendum by the City for the interpretation to become effective. It is the City's sole discretion whether to issue an addendum in response to a request for clarification.

5.0 POSTPONEMENT OF OPENING

The City reserves the right to postpone the date and time for receiving and/or opening of bids at any time prior to the date and time established in the Notice Inviting Bids. Postponement notices shall be mailed to planholders of record in the form of addenda.

6.0 OPENING OF BIDS

All bids except those which do not contain a bid security, irrespective of any other irregularities or informalities, if received on time, will be opened and publicly read aloud at the time and place set forth in the Notice Inviting Bids. Bidders, their representatives and other interested persons may be present at the opening and reading of bids.

Any bids received after the time for receiving and opening bids as set forth in the Notice Inviting Bids or as postponed by addenda will be considered non-responsive and will not be opened. Any such bids will be returned unopened to the Bidder.

The public reading of each bid will include at least the following:

- a. Name of bidder.
- b. The total amount of bid.
- c. The nature and amount of the security furnished with the bid.

7.0 PREPARATION OF BID FORMS

Bids shall be submitted on the official bid documents and must be submitted at the time and place stated in the Notice Inviting Bids. All blanks in the bid forms must be appropriately filled in, either in ink or typed, and all prices must be stated in figures. All bids must be submitted in sealed envelopes bearing on the outside the name of the bidder, its address, the bidder's planholder number, the date of the bid opening, and the name and project number of the project for which the bid is submitted. It is the sole responsibility of the bidder to see that its bid is received in proper time. Any bid received after the scheduled closing time for receipt of bids will be returned to the bidder unopened. City shall not be responsible for errors or omissions in the bid. Bidders shall write their names on each bid form at the space provided.

8.0 BIDDER'S SIGNATURE AND AUTHORITY

If the bid is made by an individual, his/her name, signature, and post office address must be shown; if made by a firm or partnership, the name and post office address of the firm or partnership, a list of the partners, and the signature of at least one of the general partners must be shown; if made by a corporation, the bid shall show the name of the state under the laws of which the corporation is chartered, the name and post office address of the corporation, and the title of the person who signs on behalf of the corporation. If the bid is made by a joint venture, the bid shall be signed by a representative of one of the joint venture firms.

9.0 ERASURES AND CORRECTIONS

The bid submitted must not contain any erasure, interlineations, or other corrections unless each such correction is suitably authenticated by affixing in the margin immediately opposite the correction the initial or initials of the person or persons submitting the bid.

10.0 BID IRREGULARITIES

Changes in or additions to the bid form, recapitulations of the work bid upon, alternative bids, or any other modifications of the bid form which are not specifically called for in the Contract Documents may result in rejection of the bid by the City, as not being responsive to the Notice Inviting Bids. No oral or telephonic modification of any bid submitted will be considered. The City retains the right to waive minor irregularities it determines to have no impact on the Contract.

11.0 MODIFICATION OF BID

On written request filed with the City, a bid already received may be modified or withdrawn at any time prior to the time established for receiving bids. The request must be executed by the bidder or its authorized representative as described in Paragraph 00100-8.0, Bidder's Signature and Authority. Modifications shall be made in writing, executed, and submitted in the same form and manner as the original bid. Withdrawal of a bid does not prejudice a bidder's right to submit a new bid within the time designated for the submission

of bids. No bid may be withdrawn after the time established for receiving bids except as provided in Paragraph 00100-12.0, Withdrawal of Bids.

12.0 WITHDRAWAL OF BIDS

In accordance with the Stockton Municipal Code, withdrawal of bids is not allowed after the time noticed for the opening of bids. In case of a materially significant error, a bidder desiring to withdraw shall give written notice to the City, specifying, in detail, how the mistake occurred and how the mistake made the bid materially different than it was intended to be. Withdrawal will not be permitted for mistakes resulting from errors in judgment or carelessness in inspecting the site of the work or in reading the Contract Documents. At the City's sole discretion, the bid may be deemed non-responsive due to the materially significant error.

13.0 ADDENDA

The Director of Municipal Utilities has the authority to issue all Addenda prior to the bid opening date. Addenda issued during the time of bidding shall become a part of the documents furnished to bidders for the preparation of bids, shall be covered in the bids, and shall be made a part of the Contract. Each bid shall include specific acknowledgment in the space provided of receipt of all Addenda issued during the bidding period. Failure to so acknowledge shall result in the bid being rejected as not responsive. Failure of any bidder to receive such Addenda shall not be grounds for non-compliance with the terms of the instructions.

14.0 BID PRICES

Bid prices shall include, whether additive or deductive, everything necessary for the completion of the work, including but not limited to, providing the materials, equipment, tools, fabrication, delivery, installation, plant and other facilities, and the management, superintendence, labor, overhead, profit, and services. Bid prices shall include all taxes required by Paragraph 00700-8.1.3, Payment of Taxes. No tax exemption certificate or any document designed to exempt the Contractor from payment of any tax will be furnished to the Contractor by the City, as to any tax on labor, services, materials, transportation, or any other items furnished pursuant to the Contract. Quote prices for the exact amount for all work required to complete the respective item as described and shown in the Contract Documents.

For unit price bid items, if the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern, and the correct product of the unit price and the estimated quantity shall be deemed to be the amount bid. If the sum of two or more items in a bidding schedule does not equal the total amount quoted, the individual item amounts shall govern and the correct total shall be deemed to be the amount bid.

15.0 BID GUARANTY

The bid form shall be accompanied by a bid guaranty bond provided by a surety company licensed and authorized to carry on business in the State of California, by a certified or cashier's check, payable to the City, or cash, in the sum of at least ten (10) percent of the total amount of the base bid price, plus additives, if any. The amount payable to the City under the bid guaranty bond, or the certified or cashier's check and the amount thereof, as the case may be, shall be forfeited to the City as liquidated damages in case of a failure or neglect of the bidder to furnish, execute, and deliver to the City the required performance and payment bonds, evidences of insurance; and to enter into, execute, and deliver to the City the Agreement

on the form provided herewith, within ten (10) calendar days after receiving written notice from the City that the award has been made and the Agreement is ready for execution.

The bid guarantees of the three lowest bidders will be retained until the Agreement is signed, evidence of insurance provided, and satisfactory bonds furnished or other disposition made thereof. The bid guarantees of all bidders, except the three lowest responsive bids, will be returned within 15 calendar days after the bids are opened.

16.0 QUALIFICATION OF BIDDER

Upon the request of City, any bidder whose bid is under consideration for the award of the Contract shall promptly submit satisfactory evidence showing the bidder's financial resources, its construction experience, and its organization's availability for the performance of the Contract.

The bidder may be required to establish to the satisfaction of the City the reliability and responsibility of the persons or entities proposed to furnish and perform the work described in the Contract Documents.

City Employees and Design Engineers May Not Bid on Construction Contracts. No employee of the City shall be eligible to submit a proposal for, nor to subcontract for any portion of, nor to supply any materials for any contract administered by the City.

No engineering or architectural firm which has provided design services for a project shall be eligible to submit a proposal for the contract to construct the project nor to subcontract for any portion of the work. The ineligible firms include the prime contractor for design, subcontractors of portions of the design, except for surveyors and geotechnical subcontractors and affiliates of either. An affiliate is a firm which is subject to the control of the same persons, through joint ownership or otherwise.

17.0 SUBCONTRACTORS

In accordance with California Public Contract Code Section 4100, et. seq., each bid shall have listed in the official bid documents, the name, portion of work to be performed, and location of the place of business of each subcontractor who will perform work or labor or render service to the bidder in or about the construction of the work or improvement, or of any subcontractor licensed by the State of California who, under subcontract to the bidder, will specially fabricate and install a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the bidder's total bid.

Failure to list subcontractors may render the bid non-responsive and may be grounds for rejection of the bid. Failure to comply with the provisions of the California "Subletting and Subcontracting Fair Practices Act" shall make the Contractor subject to the sanctions as set forth in the Act. All work, more than one-half of one percent of the bidder's total bid, for which a subcontractor is not listed in the official bid documents, shall be performed by the Contractor's own organization.

Bidders using subcontractors to fulfill the MBE and/or WBE participation requirements for the project, shall also list such subcontractors on the appropriate forms of the Affirmative Action submittal for the project, at the time of submitting their bid.

The Contractor shall perform at a minimum the percentage of work specified in Section 01010-11.0, CONTRACTOR'S WORK PERCENTAGE, with its own forces and shall not subcontract out this portion of work. The Contractor shall perform that contract work with his own organization, except that any designated "Specialty Items" may be performed by subcontract and the amount of any such "Specialty Items" so performed may be deducted from the original total contract price before computing the amount of work

required to be performed by the Contractor with his own organization. When items of work in the BID SCHEDULE, are preceded by the letter (S), said items are designated "Specialty Items." The City may also determine, on a case by case basis, items to be designated "Specialty Items." Where an entire item is sub-contracted, the value of work subcontracted will be based on the contract item bid price. When a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated percentage of the contract item bid price, determined from information submitted by the Contractor, subject to approval by the City.

18.0 MAJOR EQUIPMENT ITEMS

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19.0 SUBSTITUTIONS DURING BIDDING

Manufacturers or suppliers of materials and equipment may offer an alternative product to the Contractor, except where alternatives or substitutes are specifically excluded, and request that alternatives to specified products be considered equal. Inclusion of such alternatives in the bid is the responsibility of the Contractor. Inclusion should only be considered if the Contractor believes the offered alternative is equal in quality and performance to the specified product. After award of the Contract, such offers of alternative products will be reviewed and processed as a substitution as provided under Section 01600, MATERIAL AND EQUIPMENT. Inclusion or offers of alternative products will not be reviewed or processed during the bidding period.

20.0 BIDDERS INTERESTED IN MORE THAN ONE BID

No person, firm, or corporation, under the same or different name, shall make, file, or be interested in more than one bid for the same work unless alternate bids are called for. A person, firm, or corporation may, however, submit sub proposals or quote prices on materials to more than one bidder. Bidders shall execute and furnish with their bids, the NON-COLLUSION DECLARATION furnished in the official bid documents. Reasonable grounds to believe that any individual, partnership, corporation, or combination is interested in more than one bid for the proposed work may cause rejection of all bids in which that individual, partnership, corporation, or combination is interested.

21.0 SHEETING, SHORING AND BRACING

Pursuant to the provisions of California Labor Code Section 6707, each bid submitted shall contain, if the bid item is indicated, the amount included in its bid for adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life and limb in trenches and open excavation, which shall conform to applicable safety orders. By listing this sum, the bidder warrants that its action does not convey tort liability to the City, the Design Consultant, the Construction Manager, and their employees, agents, and sub consultants.

22.0 WAGE RATES

Pursuant to provisions of the Labor Code Section 1770, et. seq., of the State of California, the Director of the Department of Industrial Relations has ascertained the prevailing rate of per diem wages of the locality in which the Work is to be performed and applicable to the work to be done. Copies of these wage determinations are on file with the City.

Successful bidders shall promptly notify the City, in writing, about all the classifications of labor not listed in the prevailing wage determinations but necessary for the performance of the Work.

23.0 OFFER OF ASSIGNMENT OF ANTITRUST ACTIONS

As provided by Section 4552, et. seq., of the California Government Code, in submitting a bid to the City, the bidder offers and agrees that if the bid is accepted, it will assign to the City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 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, materials, or services by the bidder for sale to the City pursuant to the bid.

24.0 ASSIGNMENT OF CONTRACT

The Contractor shall not assign any part of this Contract unless it complies with Section 00700-1.5, SUCCESSORS AND ASSIGNS.

25.0 REJECTION OF BIDS

The City reserves the right to reject any and all bids and further reserves the right to reject any bids which are non-responsive, incomplete, obscure, or irregular; any bids which omit a bid on any one or more items on which the bids are required; any bids in which unit prices are unbalanced in the opinion of the City; any bids accompanied by insufficient or irregular bid guaranty; any bids from bidders who have previously failed to perform properly or to complete on time contracts of any nature; and any bidder who fails to provide satisfactory documentation of its qualifications as required by Section 00100-16.0, QUALIFICATION OF BIDDER. The City reserves the right to waive irregularities.

26.0 CONTRACT AND BONDS

The successful bidder will be required to furnish, in duplicate counterpart, a Labor and Material Bond on forms provided by the City, in an amount equal to one hundred percent (100%) of the Contract Price, a Faithful Performance Bond in an amount equal to one hundred (100%) of the Contract Price, and evidences of insurance. Said insurance and bonds shall be secured from a surety company satisfactory to the City.

The form of contract, and the forms of bonds, as provided in Section 00500, which the successful bidder as Contractor will be required to execute and furnish shall be carefully examined by the bidder. The Faithful Performance Bond is to secure the faithful performance of the Contract, and the Labor and Material Bond is to secure the payment of those to whom the bidder may become legally indebted for labor, materials, tools, equipment, or services of any kind used or employed by the bidder in performing the work.

The Faithful Performance Bond will be retained by the City of Stockton for twelve (12) months following final acceptance by the City of the improvements to guarantee correction of failure attributable to workmanship and materials. Upon said final acceptance by the City, the amount of the Faithful Performance Bond may be reduced to twenty percent (20%) of the actual improvement construction costs, at the sole discretion of the City.

The bonds required of the Contractor shall be furnished by a company authorized to do a surety business in the State of California: said bonds shall be executed by the surety and Contractor before or concurrently

with the signing of the contract. The form of said bonds must be approved by the City Attorney and the surety of sureties must be approved by the City Finance Director.

All alterations, extensions of time, extra or additional work and other changes authorized by these specifications, or any part of the Contract may be made without securing the consent of the surety on the contract bonds.

27.0 AWARD OF CONTRACT

Within sixty (60) days after the time of opening of the bids, the City will act either to accept a bid, to reject all bids or with the consent of the bidders and their sureties to extend the time in which the City may act. Nothing set forth herein shall limit the ability of the City to agree with the lowest responsive, responsible bidder to extend the time for the City to award the Contract to said bidder. The Award of Contract shall obligate the bidder whose bid is accepted to furnish performance and Labor and Material bonds and evidences of insurance, and to execute the Agreement in the form set forth in the Contract Documents. The Contract will require the completion of the work according to the Contract Documents.

If award is made, it will be based on the lowest responsive, responsible bid whose summation of the base bid and City selected alternates yields the lowest total Contract price. Selection of any or all alternates shall be at the sole discretion of the City.

28.0 EXECUTION OF CONTRACT

The Agreement shall be executed by the successful bidder and returned, together with the Contract bonds and evidences of insurance, within ten (10) days after receiving the Contract. Time is of the essence in this regard. After execution by City, one copy of the Agreement shall be returned to Contractor.

The failure to execute the Contract Documents or to furnish the bonds or insurance required by these instructions within ten (10) days after receiving the Contract constitutes a default. In the event of a default, the City may award the Contract to the next lowest bidder or may re-advertise for bids. The City may charge against the defaulting bidder the greater of (1) the amount of the bid bond, or (2) the difference between the amount of the bid and the amount for which a Contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid bond. If a more favorable bid is received by re-advertising, the defaulting bidder shall have no claim against the City for a refund.

29.0 BUSINESS LICENSE

The Contractor must obtain and maintain a valid City of Stockton business license prior to execution of the Contract and throughout the fiscal periods embraced by the duration of the Contract.

30.0 CONSTRUCTION AND DEMOLITION DEBRIS

To comply with the California Integrated Waste Management Act of 1989, Assembly Bill 939, the City of Stockton requires that construction and demolition projects recycle a minimum of fifty percent (50%) of all discarded materials generated by the projects to divert project waste from the landfills.

a. CONSTRUCTION AND DEMOLITION RECYCLING PLAN

This plan is meant to assist contractors with identifying the types and quantities of materials that will be generated because of the project to find diversion outlets for these materials.

Once the Contract has been awarded, the contractor is required to complete and submit a Construction/Demolition (C&D) Recycling Plan prior to receiving a Notice to Proceed. The plan

should be submitted to the Project Manager at the pre-construction meeting. The City may also request additional information, as necessary.

b. **CONSTRUCTION AND DEMOLITION DEBRIS RECYCLING REPORT**

The contractor must complete the Construction and Demolition (C&D) Debris Recycling Report within thirty (30) days of construction or demolition project completion (Notice of Completion). The completed report must be accompanied by the official weight tags or receipts verifying the information provided in the report and must be submitted to the City of Stockton Public Works Department, Solid Waste Division, Stewart Eberhardt Building, 22 E. Weber Ave., Room 301, Stockton, CA 95202. Failure to provide the C&D Recycling Report form will result in a five percent (5%) withholding of the contract amount.

(Recycling forms are available at <http://www.stocktongov.com/files/C&D%20Package.pdf>).

31.0 ESCROW OF BID DOCUMENTS

N/A

32.0 BID PROTESTS

All parties wishing to file a protest shall comply with the procedures set forth below.

All protests regarding the bidding process or the award, or intended award, of any contract must be submitted in writing to the City Attorney on or before 5:00 p.m. of the fifth business day following the opening of all bids, unless a different time is specified in the Notice Inviting Bids or other bid solicitation documents. All protests must be addressed to: City Attorney, City of Stockton, 425 North El Dorado, Stockton, CA 95202.

The party filing the protest must have submitted a bid for the work. A subcontractor of a bidder may not submit a bid protest.

The protest shall contain a full and complete statement specifying in detail the grounds of the protest and the facts in support thereof. The protest must be hand delivered or sent via mail so that it is received by the City Attorney within the time set forth above. The protest document must include the following:

- a. A complete statement of the factual and legal basis for the protest.
- b. The protest must include the name, address and telephone number of the person representing the protesting party; and
- c. The protesting party must concurrently transmit a copy of the written protest document and any attached documentation to all other bidders who may have a reasonable prospect of receiving the award depending upon the outcome of the protest.

The procedure and time limits set forth herein are mandatory and the bidder's sole and exclusive remedy in the event of protest. No bidder may bring an action or proceeding challenging the bidding process or any award, or intent to award, any contract unless the above procedures are followed. The failure of a party originating a protest to comply with these procedures shall constitute a waiver of any right to further pursue the protest, including filing a government code claim or legal proceeding. The City reserves the right to modify the bid protest procedures in the Notice Inviting Bids or other bid solicitation documents and to require any protesting party to submit additional or clarifying information or documentation in support of any protest.

33.0 LOCAL EMPLOYMENT

For contracts valued at \$100,000 and above, pursuant to Stockton Municipal Code Section 3.68.095 the contractor and all subcontractors shall make a good faith effort to employ at least 50% of the workforce on this project from residents, as measured by total labor work hours. Failure of any contractor or subcontractor to comply with these requirements shall be deemed a material breach of the contract or subcontract. Contractors and subcontractors shall maintain records necessary for monitoring their compliance with Section 3.68.095.

34.0 COMMUNITY WORKFORCE AND TRAINING AGREEMENT

For contracts valued at \$1,000,000 and above, pursuant to the implementation of the Community Workforce and Training Agreement (CWTA) adopted by the City Council on July 26, 2016, the successful bidder shall be required to comply with the provisions of the CWTA.

***** END OF SECTION *****

SECTION 00220 - GEOTECHNICAL DATA

Subsoil investigations have not been conducted at the site of the work.

The Contractor should visit the site and acquaint himself with all existing conditions. Prior to bidding, contractors may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions but such subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Engineer.

*****END OF SECTION*****

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SECTION 00300 – LIST OF BID ITEMS

**ELECTRICAL UPGRADES
WATER WELL NO. 26**

Project No. UH24008

Item #	Description	Est. Quantity	Unit	Unit Price	Total Price
1	Mobilization, Demobilization, Bonds, Permits, and Insurance on all work.	1	LS		
2	Removal and Disposal of all items shown on Demolition Plan of Drawing No. E3, and per Specifications.	1	LS		
3	Furnish and install PG&E underground conduits per PG&E drawings. Contractor shall obtain encroachment permits and arrange inspections with City of Stockton and PG&E inspectors.	1	LS		
4	Install new Transformer Concrete Pad, Sawcut, Trench, Backfill and Patch all conduits trenches per Plans and Specifications.	1	LS		
5	Furnish and Install new low voltage Transformer all new Primary and Secondary feeders, Wirings and SCADA and Instrumentation connection per Plans and Specifications.	1	LS		
6	Test & Terminate the Motor Control Center and Pump Feeders per Plans and Specifications.	1	LS		
7	Instruction of (O&M) Manuals on all work.	1	LS		
8	Contractor's Record Drawings on all work	1	LS		
TOTAL BID: The sum of Items 1 through 8					

END OF SECTION

SAMPLE

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SECTION 00500 - CONSTRUCTION CONTRACT

This contract is made and entered into on _____, by and between **NAME OF CONTRACTOR**, a **(INDICATE STATUS: STATE OF [NAME STATE] CORPORATION, PARTNERSHIP, OR SOLE PROPRIETORSHIP)**, with a business address at **ADDRESS/CITY/STATE/ZIP**, hereinafter called "CONTRACTOR," and CITY OF STOCKTON, a municipal corporation, hereinafter called "CITY."

WITNESSETH:

WHEREAS, plans and specifications for the construction of **PROJECT NAME (PROJECT NO. xx)**, hereinafter called "PROJECT," were regularly adopted by **Council Motion –OR- Council Resolution No. _____**, on _____; and

WHEREAS, the contract for said work was regularly awarded to CONTRACTOR, by **Council Motion –OR- Council Resolution No. _____**, on _____.

NOW, THEREFORE, in consideration of the promises and of the mutual covenants herein contained, the parties hereto expressly agree as follows:

CONTRACTOR agrees:

1. SCOPE OF SERVICES. To do the work and furnish all the labor, materials, tools, equipment, and insurance required for the construction of PROJECT in accordance with the plans and specifications adopted on _____, by **Council Motion –OR- Council Resolution No. _____**. The "contract documents," which include the bid documents, project plans, specifications, all letters of clarification, and the City of Stockton Standard Specifications and Plans, are incorporated into and made a part of this contract by this reference to the same extent as if fully set forth.

2. COMPENSATION. To do and perform the work contemplated hereby in a good and workmanlike manner and to furnish all labor, materials, tools, and equipment necessary therefore at the prices specified in Exhibit A, attached hereto and by reference made a part hereof, under the direction of and to the complete satisfaction of the Director of Municipal Utilities Department of the City of Stockton. Total compensation for services and reimbursement for costs shall not exceed **ENTER CONTRACT AMOUNT**, or as otherwise mutually agreed to in a Contract Change Order.

3. INSURANCE. CONTRACTOR shall not commence any work before obtaining, and shall maintain in force at all times during the duration and performance of this contract, the policies of insurance specified in Exhibit B, which is attached to this contract and incorporated by this reference, and as provided in the "contract documents" including Section 7-1.06 of the City of Stockton Standard Specifications and Plans as adopted on September 27, 2016, by Council Resolution No. 2016-09-27, effective September 27, 2016.

It shall be a requirement under this agreement that any available insurance proceeds broader than or more than the specified minimum insurance coverage requirements and/or limits shall be available to the Additional Insured.

Furthermore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named Insured; whichever is greater.

The Additional Insured coverage under the CONTRACTOR's policy shall be "primary and non-contributory" and will not seek contribution from the City of Stockton's insurance or self-insurance and shall be at least as broad as ISO CG 20 01 04 13.

The limits of insurance required in this agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the

City of Stockton (if agreed to in a written contract or agreement) before the City of Stockton's own insurance or self-insurance shall be called upon to protect it as a named insured.

All self-insured retentions (SIR) must be disclosed to the CITY's Risk Management for approval and shall not reduce the limits of liability. Payment Bond in the amount of the self-insured retention (SIR) may be required.

Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or the CITY.

The CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements.

Failure to exercise this right shall not constitute a waiver of right to exercise later.

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

CONTRACTOR agrees to include with all Subcontractors in their subcontract the same requirements and provisions of this agreement including the indemnity and insurance requirements to the extent they apply to the scope of the Subcontractor's work. Subcontractors hired by CONTRACTOR agree to be bound to CONTRACTOR and the CITY in the same manner and to the same extent as CONTRACTOR is bound to the CITY under the Contract Documents. Subcontractor further agrees to include these same provisions with any Sub-subcontractor. A copy of the CITY Contract Document Indemnity and Insurance provisions will be furnished to the Subcontractor upon request. The General CONTRACTOR shall require all sub-contractors to provide a valid certificate of insurance and the required endorsements included in the agreement prior to commencement of any work and contractor will provide proof of compliance to the City.

4. INDEMNITY AND HOLD HARMLESS. To the fullest extent permitted by law, Contractor shall hold harmless, defend, and indemnify City of Stockton and its officers, officials, employees, and volunteers from and against all claims, damages, losses, and expenses including attorney fees arising out of the performance of the work described herein, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, except where caused by the active negligence, sole negligence, or willful misconduct of the City of Stockton. This obligation is independent of, and shall not in any way be limited by, the minimum Insurance obligations contained in this agreement. These obligations shall survive the completion or termination of this agreement.

5. STANDARD PLANS AND SPECIFICATIONS. The performance of said work and the furnishing of said materials shall be executed in accordance with Section 8-1.04B of the City of Stockton Standard Specifications and Plans as adopted on September 27, 2016, by Council Resolution No. 2016-09-27-1213, effective September 27, 2016, and the provisions of the issued project specifications.

The Director of Municipal Utilities Department will furnish CONTRACTOR a weekly statement showing the number of days charged to the contract for the preceding week, the number of days specified for completion of the contract, and the number of days remaining to complete the contract. CONTRACTOR will be allowed one (1) week in which to file a written protest setting forth in what respects said weekly statement is incorrect, otherwise the statement shall be deemed to have been accepted by CONTRACTOR as correct.

6. WORKING DAYS. 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 finished or completed within the number of days as set forth, damage will be sustained by the CITY, and that it is and will be impracticable and extremely difficult to ascertain the actual damage which CITY will sustain in the event of and by reason of such delay; and it is therefore agreed that CONTRACTOR will pay to CITY the sum of **XXX AND NO/100 DOLLARS**

(\$XXX) per day for each and every calendar days delay in finishing the work in excess of the number of days prescribed; and CONTRACTOR agrees to pay said liquidated damages as herein provided, and in case the same are not paid, agrees that CITY, may deduct the amount thereof from any monies due or that may become due CONTRACTOR under the contract.

It is further agreed that in case the work called for under the contract is not finished and completed in all parts and requirements within the number of days as specified, the CITY shall have the right to increase the number of days or not, as may seem best to serve the interest of CITY, and if the CITY decides to increase the said number of days, the CITY shall further have the right to charge to CONTRACTOR, CONTRACTOR's heirs, assigns or sureties, and to deduct from the final payment for the work, all or any part, as may be deemed proper, the liquidated damages as specified or 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, whichever is greater, except the cost of final surveys and preparation of final estimate shall not be included in such charges.

A working day shall not include, nor shall CONTRACTOR be assessed with liquidated damages nor the additional cost of engineering and inspection during any delay beyond the time named for the completion of the work caused by acts of God or of the public enemy, acts of CITY, fire, floods, epidemics, quarantine restrictions, strikes, and freight embargoes and subject to approval by the Director of Municipal Utilities Department, inability to get materials ordered by CONTRACTOR or subcontractor due to such causes provided that CONTRACTOR shall notify the Director of Municipal Utilities Department in writing of the causes of delay within five (5) working days from the beginning of any such delay, and the Director shall ascertain the facts and the extent of the delay, and Director's findings of the facts thereon shall be final and conclusive.

If CONTRACTOR is delayed by reason of alterations made in these specifications, or by any act of the Director of Municipal Utilities Department or of the CITY, not contemplated by the contract, the time of completion shall be extended proportionately and CONTRACTOR shall be relieved during the period of such extension of any claim for liquidated damages, engineering or inspection charges or other penalties. CONTRACTOR shall have no claim for any other compensation for any such delay.

7. CONFORMANCE TO APPLICABLE LAWS. Contractor shall comply with all applicable Federal, State, and Municipal laws, rules, and ordinances. Contractor shall not discriminate in the employment of persons or in the provision of services under this Contract based on any legally protected classification, including race, color, national origin, ancestry, sex or religion of such person.

a. TITLE VI

Title VI of the Civil Rights Act of 1964 requires that "no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." (42 USC Section 2000d) <http://www.dol.gov/oasam/regs/statutes/titlevi.htm>.

The City of Stockton requires compliance with the requirements of Title VI in all its programs and activities regardless of funding source.

b. DISCRIMINATION AND HARASSMENT POLICY

The City of Stockton has a Discrimination and Harassment Policy ([Exhibit C](#)). The purpose of this policy is to reaffirm the CITY's commitment to demonstrating respect for all individuals by strictly prohibiting discrimination and harassment, including sexual harassment in the workplace, to define the types of behavior and conduct prohibited by this policy, and to set forth a procedure for reporting, investigating, and resolving complaints of discrimination and harassment in the workplace.

c. LABOR STANDARDS PROVISIONS/CALIFORNIA LABOR CODE

The bidder shall understand that conditions set forth in Division 2, Part 7, Chapter 1, Article 2, Wages of the California Labor Code shall be considered part of the contract agreement. https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=LAB&division=2.&title=&part=7.&chapter=1.&article=2.

d. PREVAILING WAGE

CONTRACTOR and any subcontractor shall pay each employee engaged in the trade or occupation not less than the prevailing hourly wage rate. In accordance with the provisions of Section 1770 of the Labor Code, the Director of Department of Industrial Relations of the State of California has determined the general prevailing wage and employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided for in Section 1773.1, apprenticeship or other training programs authorized by Section 3093 and similar purposes applicable to the work to be done. CONTRACTOR performing the work under this contract shall obtain a copy of the wage rate determination and shall distribute copies to each subcontractor. As the wage determination for each craft reflects an expiration date, it shall be the prime CONTRACTOR and each subcontractor's responsibility to ensure that the prevailing wage rates of concern are current and paid to the employee.

- i. The CONTRACTOR performing the work shall be responsible for obtaining a copy of the State wage rate determination. State wage rates may be obtained at <http://www.dir.ca.gov/OPRL/pwd/Determinations/Northern/Northern.pdf>. The CONTRACTOR shall be responsible for posting said wage rates at a prominent location at the work site and shall maintain same in a good readable condition for the duration of the work.
- ii. Should the CONTRACTOR choose to work on a Saturday, Sunday or on a holiday recognized by the Labor Unions, the CONTRACTOR shall reimburse the CITY the actual cost of engineering, inspection, superintendence, and or other overhead expenses which are directly chargeable to the contract. Should such work be undertaken at the request of the CITY, reimbursement will not be required. To conform strictly with the provisions of Division 2, Part 7, Chapter 1, Article 2, of the Labor Code of the State of California. To forfeit as a penalty to CITY the sum of TWENTY-FIVE AND NO/100 DOLLARS (\$25.00) for each laborer, worker, or mechanic employed by CONTRACTOR, or by any subcontractor under CONTRACTOR, in the execution of this contract, for each calendar day during which any laborer, worker, or mechanic is required or permitted to work more than eight (8) hours and who is not paid the general prevailing rate of per diem wages for holiday and overtime work in violation of the provisions of Sections 1770 to 1781 of the Labor Code of the State of California. That all sums forfeited under the provisions of the foregoing sections shall be deducted from the payments to be made under the terms of this contract.
- iii. The CONTRACTOR to whom the contract is awarded shall ensure that the prime and each subcontractor will in accordance with Section 1776 of the Labor Code, maintain certified payroll records. A copy of said records shall be provided with each invoice to the Municipal Utilities Department, Attention Contract Compliance Officer. It shall be the CONTRACTOR'S responsibility to obtain copies of the current prevailing wage rate determination for all subcontractors. Additionally, certified payroll records must be uploaded to the DIR website as required by labor code.

- iv. The CONTRACTOR shall comply with the provisions established in Section 1777.5 of the Labor Code concerning the 1) certified approval by local joint apprenticeship committees for the employment and training of apprentices, and 2) contribution of funds to administer and conduct apprenticeship programs, if applicable to the job.

e. LOCAL EMPLOYMENT ORDINANCE

For contracts valued at \$100,000 and above, pursuant to Stockton Municipal Code Section 3.68.095 the CONTRACTOR and all subcontractors shall make a good faith effort to employ at least 50 percent of the workforce on this project from residents, as measured by total labor work hours. Failure of any CONTRACTOR or subcontractor to comply with these requirements shall be deemed a material breach of the contract or subcontract. CONTRACTORS and subcontractors shall maintain records necessary for monitoring their compliance with Section 3.68.095.

f. COMMUNITY WORKFORCE TRAINING AGREEMENT

For contracts valued at 1,000,000 and above, pursuant to the implementation of the Community Workforce Training Agreement (CWTA) adopted by the City Council on July 26, 2016, the successful bidder shall be required to comply with the provisions of the CWTA. For any project subject to this Agreement, the Local Hire, Priority Apprentice and Workforce Development Program requirements shall apply in lieu of the requirements of Stockton Municipal Code Section 3.68.095 and no separate compliance with Section 3.68.095 will be required of the Contractors/Employers working on the project.

a. SANCTIONS

Deliverables must conform with all applicable federal, state, and local laws. Such conformity includes compliance with federal sanctions, and Contractor Certifies that it has not and will not engage in prohibited transactions with sanctioned persons or entities.

CITY agrees:

8. COMPENSATION. To pay CONTRACTOR for the work herein contemplated in the following manner: Progress payments will be made on or about the first day of each calendar month, in such sum as shall make the aggregate of payment up to such day equal to ninety-five percent (95%) of the proportional contract price, upon the basis of the progress certificate of the Director of Municipal Utilities Department as to the amount of work done and the proportional amount of the contract price represented therefore; and all of the remaining part of the contract price not as aforesaid paid, shall be paid at the expiration of thirty-five (35) days from the completion of said work of construction and the certification by the Director of Municipal Utilities Department of such completion.

9. SECURITIES. Pursuant to Section 22300 of the Public Contract Code, CONTRACTOR will be permitted, at its request and sole expense, to substitute securities for any monies withheld by the CITY to ensure performance under the contract. Said securities will be deposited either with the CITY or with a State or federally chartered bank as escrow agent. Securities eligible for this substitution are those listed in Section 16430 of the California Government Code or bank or savings and loan certificates of deposit. CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

10. CHANGE ORDERS. CITY reserves the right to make such alterations, deviations, additions to or omissions from the plans and specifications, including the right to increase or decrease the quantity of any item or portion of the work, as may be deemed by the Engineer to be necessary or advisable

and to require such extra work as may be determined by the Engineer to be required for the proper completion or construction of the whole work contemplated.

Any such changes will be set forth in a contract change order which will specify, in addition to the work done in connection with the change made, adjustment of contract time, if any, and the basis of compensation for such work. A contract change order will not become effective until approved by the City Manager and/or the City Council.

Processing of change orders shall be in accordance with Section 4-1.05A of the City of Stockton Standard Specifications and Plans as adopted by Council on September 27, 2016, by Resolution No. 2016-09-27-1213, effective September 27, 2016, or as otherwise amended by Council. When the compensation for an item of work is subject to adjustment under the provisions of Standard Specifications and Plans, Section 4-1.05A, CONTRACTOR shall, upon request, promptly furnish the Engineer with adequate detailed cost data for such item of work.

11. AUDITS. CITY reserves the right to periodically audit all charges made by CONTRACTOR to CITY for services under the contract. Upon request, CONTRACTOR agrees to furnish CITY, or a designated representative, with necessary information and assistance.

CONTRACTOR agrees that CITY or its delegate will have the right to review, obtain and copy all records pertaining to performance of the contract. CONTRACTOR agrees to provide CITY or its delegate with any relevant information requested and shall permit CITY or its delegate access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting and copying such books, records, accounts, and other material that may be relevant to a matter under investigation for the purpose of determining compliance with this requirement. CONTRACTOR further agrees to maintain such records for a period of three (3) years after final payment under the contract.

12. WAIVER. It is expressly understood and agreed by and between the parties hereto that a waiver of any of the conditions of this contract shall not be considered a waiver of any of the other conditions thereof.

It is further understood and agreed by and between the parties hereto that time is of the essence of this contract in all respects.

IN WITNESS WHEREOF, the parties hereto have hereunto affixed their hands and seals the day and year first above written.

ATTEST:
ELIZA R. GARZA, CMC
CITY CLERK
CITY OF STOCKTON

CITY:

By: _____

By: _____
HARRY BLACK
CITY MANAGER

APPROVED AS TO FORM & CONTENT:
LORI ASUNCION
OFFICE OF THE CITY ATTORNEY

By: _____
LIST NAME OF CONTRACTOR

By: _____
ASSISTANT CITY ATTORNEY

Tax Identification No.

LOCAL EMPLOYMENT ORDINANCE

This contract is subject to the requirements of the City of Stockton's Local Employment Ordinance. By my signature below, I certify that I have read and understood the Local Employment Ordinance of the City of Stockton and agree to abide by its provisions. If selected to perform this contract, I specifically agree to report data on the actual number of Stockton residents employed and understand that data will be subject to verification by an independent auditor.

Signature of Bidder _____

Date Signed _____

SAMPLE

Addendum A

CITY OF STOCKTON COMMUNITY WORKFORCE AND TRAINING AGREEMENT

AGREEMENT TO BE BOUND

The undersigned, as a Contractor or Subcontractor, including construction material trucking company/entity, (CONTRACTOR) on the City of Stockton Project, (hereinafter PROJECT), for and in consideration of the award to it of a contract to perform work on said PROJECT, and in further consideration of the mutual promises made in this Community Workforce and Training Agreement (hereinafter AGREEMENT), a copy of which was received and is acknowledged, hereby:

(1) Accepts and agrees to be bound by the terms and conditions of the AGREEMENT for this Project, together with all amendments and supplements now existing or which are later made thereto:

(2) The CONTRACTOR agrees to be bound by the legally established local trust agreements designated in the applicable Schedule A as set forth in Article IV of this AGREEMENT.

(3) The CONTRACTOR authorizes the parties to such local trust agreements to appoint trustees and successor trustees to administer the trust funds and hereby ratifies and accepts the trustees so appointed as if made by the CONTRACTOR.

(4) Certifies that it has no commitments or agreements which would preclude its full and complete compliance with the terms and conditions of said AGREEMENT.

(5) Agrees to secure from any CONTRACTOR(S) (as defined in said AGREEMENT) which is or becomes a subcontractor (of any tier) to it, a duly executed Agreement to be Bound in form identical to this document.

(6) This Agreement to be Bound constitutes a subscription agreement to the extent of its terms. However, the undersigned agrees to execute a separate Subscription Agreement(s) or contributing employer agreement for Trust Funds when such Trust Fund(s) requires such document(s).

Date: _____

Name of Contractor

(Name of Contractor Representative)

(Authorized Officer & Title)

CSLB # of Motor Carrier Permit

EXHIBIT A
ELECTRICAL UPGRADES
WATER WELL NO. 26

Project No. UH24008

Item #	Description	Est. Quantity	Unit	Unit Price	Total Price
1	Mobilization, Demobilization, Bonds, Permits, and Insurance on all work.	1	LS		
2	Removal and Disposal of all items shown on Demolition Plan of Drawing No. E3, and per Specifications.	1	LS		
3	Furnish and install PG&E underground conduits per PG&E drawings. Contractor shall obtain encroachment permits and arrange inspections with City of Stockton and PG&E inspectors.	1	LS		
4	Install new Transformer Concrete Pad, Sawcut, Trench, Backfill and Patch all conduits trenches per Plans and Specifications.	1	LS		
5	Furnish and Install new low voltage Transformer all new Primary and Secondary feeders, Wirings and SCADA and Instrumentation connection per Plans and Specifications.	1	LS		
6	Test & Terminate the Motor Control Center and Pump Feeders per Plans and Specifications.	1	LS		
7	Instruction of (O&M) Manuals on all work.	1	LS		
8	Contractor's Record Drawings on all work	1	LS		
TOTAL BID: The sum of Items 1 through 8					

EXHIBIT B

REFER TO SECTION 00820 – LIABILITY AND INSURANCE REQUIREMENTS

SAMPLE

EXHIBIT C

DISCRIMINATION AND HARASSMENT POLICY

SAMPLE

BOND FOR FAITHFUL PERFORMANCE

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, a (INDICATE STATUS: STATE OF [NAME STATE] CORPORATION, PARTNERSHIP, OR SOLE PROPRIETORSHIP), as Principal and _____, a corporation, organized and existing under the laws of the State of _____ and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the City of Stockton, a municipal corporation, duly created and existing under and by virtue of the laws of the State of California, as obligee, in the just and full sum of SPELL OUT CONTRACT AMOUNT AND xx/100 DOLLARS (\$xxx enter dollar amount), in lawful money of the United States of America (being 100% of the contract price) for the payment whereof well and truly to be made to the said CITY, the said Principal and Surety bind themselves, their successors and assigns, jointly and severally, firmly by these presents.

The condition of the foregoing obligation is such that the above bounded Principal has simultaneously entered a contract with the CITY, to do and perform the following work, to wit:

NAME OF PROJECT
(PROJECT NO. xxx)

NOW, THEREFORE, if the above bounded Principal, CONTRACTOR, Company or Corporation or its subcontractor, shall well and truly perform the work contracted to be done under said contract, then this obligation to be null and void; otherwise, to remain in full force and effect.

No prepayment or delay in payment and no change, extension, addition or alteration of any provision of said contract, or in said plans or specifications agreed to between the said CONTRACTOR and the said CITY, and no forbearance on the part of the said CITY shall operate to relieve any Surety or Sureties from liability on this bond, and consent by said Surety is hereby given, and the said Surety hereby waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

SIGNED AND SEALED on _____

APPROVED AS TO SURETY:

APPROVED AS TO FORM & CONTENT:
LORI ASUNCION
OFFICE OF THE CITY ATTORNEY

By: _____
ASSISTANT CITY ATTORNEY

By: _____
PRINCIPAL

SURETY

By: _____
ATTORNEY-IN-FACT

BOND FOR LABOR AND MATERIAL

KNOW ALL MEN BY THESE PRESENTS:

That we, **NAME OF CONTRACTOR**, a **(INDICATE STATUS: STATE OF [NAME STATE] CORPORATION, PARTNERSHIP, OR SOLE PROPRIETORSHIP)**, as Principal and _____, corporation, organized and existing under the laws of the State of _____ and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the City of Stockton, a municipal corporation, duly created and existing under and by virtue of the laws of the State of California, and unto any and all material suppliers, persons, companies, or corporations furnishing materials, provisions, provender or other supplies used in, upon, for or about the performance of the work contemplated to be executed or performed under the contract hereinafter mentioned, and all persons, companies, or corporations renting or hiring teams, or implements of machinery, for or contributing to said work and all persons who perform work or labor upon the same, and all persons who supply both work and materials, and whose claims have not been paid by the contractor, company or corporation in the just and full sum of **SPELL OUT DOLLAR AMOUNT AND xx/100 DOLLARS (\$xxx enter dollar amount)**, in lawful money of the United States of America (being 100% of the contract price) for the payment whereof well and truly to be made to said CITY and to said persons jointly and severally, the said principal and Surety bind themselves, their successors and assigns, jointly and severally, firmly by these presents.

The condition of the foregoing obligations is such that the above bounden Principal has simultaneously entered a contract of even date herewith, with the CITY, to do and perform the following work, to-wit:

**NAME OF PROJECT
(PROJECT NO. xxx)**

NOW, THEREFORE, if the above bounden Principal, CONTRACTOR, Company or Corporation or its subcontractor, fail to pay for all materials, provisions, provender, or other supplies, or teams, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, the Surety on this bond will pay the same, in an amount not exceeding the sum specified in this bond, provided that any and all claims hereunder shall be filed and proceedings had in connection therewith as required by the provisions of Division 3, Part 4, Title 15, Chapter 5, Article 1 of the Civil Code of California, provided that in case suit is brought upon this bond, a reasonable attorney's fee shall be awarded by the Court to the prevailing party in said suit; said attorney's fee to be fixed as costs in said suit, and to be included in the judgment therein rendered.

No prepayment or delay in payment and no change, extension, addition or alteration of any provision of said contract or in said plans or specifications agreed to between the said CONTRACTOR and the said CITY and no forbearance on the part of the said CITY shall operate to relieve any surety or sureties

from liability on this bond, and consent to make such alterations without further notice to or consent by any such surety is hereby given, and the said sureties hereby waive the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

SIGNED AND SEALED on _____.

APPROVED AS TO SURETY:

APPROVED AS TO FORM & CONTENT:
LORI ASUNCION
OFFICE OF THE CITY ATTORNEY

By: _____
CITY ATTORNEY

By: _____
PRINCIPAL

SURETY

By: _____
ATTORNEY-IN-FACT

SAMPLE

INTENTIONALLY LEFT BLANK

SAMPLE

SECTION 00700 - GENERAL CONDITIONS

1.0 GENERAL

1.1 Intent of Contract Documents

The intent of the Contract Documents is to include all necessary criteria to establish the scope and quality for completion of the Work by Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to the extent consistent with, and reasonably inferable from, the Contract Documents.

Where the Plans or Specifications describe portions of the Work in general terms but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish tools, equipment, and incidentals, and do all the work involved in executing the Contract in a satisfactory and workmanlike manner.

In the event the materials and/or equipment are to be furnished by the City, as designated in the General Requirements or as agreed on, this shall not relieve the Contractor of the above requirements to furnish all other labor, materials, and equipment to complete the Contract.

It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether specifically called for at no additional cost to the City.

1.2 Discrepancies and Omissions

Any discrepancies or omissions found in the Contract Documents shall be reported to the Construction Manager immediately. The Construction Manager will clarify discrepancies or omissions in writing, within a reasonable time.

In the case of conflict or inconsistencies between terms of the Contract Documents, the following order of precedence shall apply:

- a. The Contract and Exhibits, including change orders and permits.
- b. Supplementary Conditions and their Exhibits.
- c. Instructions to Bidders.
- d. General Conditions and their Exhibits.
- e. The Project Specifications.
- f. The Project Drawings.
- g. City of Stockton Standard Specifications.

- h. City of Stockton Standard Drawings.
- i. Where no order of precedence is stated, or if conflict or inconsistency cannot be resolved by a careful review of the Contract Documents, the more stringent of the requirements shown or specified shall be controlling.

Organization of the Specifications into various subdivisions and the arrangement of the Drawings shall not control Contractor in dividing the Work among subcontractors, in trades, or into design packages, or in establishing the extent of work to be performed by any trade.

Unless otherwise stated in the Contract Documents, technical words and abbreviations contained in the Contract Documents are used in accordance with commonly understood design professional and construction industry meanings; and non-technical words and abbreviations are used in accordance with their commonly understood meanings.

The Contract Documents may omit modifying words such as “all” and “any,” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. The use of the word “including,” when following any general statement, shall not be construed to limit such statement to specific items or matters set forth immediately following such word or to similar items or matters, whether or not non-limiting language (such as “without limitation,” “but not limited to,” or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement.

Whenever the context so requires, the use of the singular number shall be deemed to include the plural and vice versa. Each gender shall be deemed to include any other gender, and each shall include corporation, partnership, trust, or other legal entity, whenever the context so requires. The captions and headings of the various subdivisions of the Contract Documents are intended only for reference and convenience and in no way define, limit, or prescribe the scope or intent of the Contract Documents or any subdivision thereof.

1.3 Headings

Headings to parts, divisions, sections, articles, paragraphs, subparagraphs, and forms are inserted for convenience of reference only and shall not affect the interpretation of the Contract Documents.

1.4 Penalty for Collusion

If, at any time, it is found that the person, firm, or corporation to whom the Contract has been awarded has, in presenting any bid or bids, colluded with any other party or parties, then the Contract shall be null and void, and the Contractor and its sureties shall be liable for loss or damage which the City may suffer thereby, and the City may advertise for new bids for said Work.

1.5 Successors and Assigns

The City and the Contractor, respectively, bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to the partners, successors, assigns, and legal representatives of such other party with respect to all covenants, agreements, and obligation

contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it without the written consent of the other and consent of Surety.

1.6 Assignment to City

Pursuant to Public Contract Code 7103.5, in entering into the Contract and all subcontracts, to supply goods, services, or materials pursuant to the Contract, the Contractor and its subcontractors offer and agree to assign to the City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or 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 Contract and subcontracts. This assignment shall be made and become effective at the time the City tenders final payment to the Contractor, without further acknowledgment by the parties. Reference Paragraph 00100-23.

1.7 Rights and Remedies

The duties and obligations imposed by the Contract Documents and the rights and remedies available there under shall be in addition to, and not a limitation of, any duties, obligations, rights, and remedies otherwise imposed or available by law.

No action or failure to act by the City, the Design Consultant, or the Construction Manager shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach there under, except as may be specifically agreed in writing.

2.0 ADMINISTRATION

2.1 Administration of the Contract

The City's Representative, the Construction Manager, and the Design Consultant will provide administration of the Contract as hereinafter discussed. The duties, responsibilities and limitations of authority of the Design Consultant and the Construction Manager as the representatives of the City during the construction, as set forth in the Contract Documents, will not be modified or extended without written consent of the City.

In case of the termination of the employment of the Design Consultant or the Construction Manager, the City shall appoint a Design Consultant or a Construction Manager whose status under the Contract Documents shall be that of the former Design Consultant or Construction Manager, respectively.

2.2 City's Representative

- 2.2.1 General - The City's Representative has the authority to act on behalf of the City to implement change orders, progress payments, contract performance decisions, acceptability of the Contractor's work, and early possession.

- 2.2.2 Change Orders - The City's Representative has the authority to review and recommend or reject change orders and cost proposals submitted by the Contractor or as recommended by the Construction Manager.
- 2.2.3 Progress Payments - The City's Representative has the authority to accept or reject requests for progress payments which have been submitted by the Contractor and recommended by the Construction Manager.
- 2.2.4 Contract Performance Decisions - Should the Contractor disagree with the Construction Manager's decision with respect to the contract performance, the Contractor may appeal to the City's Representative in accordance with the provisions herein.
- 2.2.5 Acceptability of Work - The City's Representative has the authority to make the final determination of the acceptability of the Work. The City's Representative also has the authority to accept or reject the Design Consultant's recommendations regarding retention of defective work as provided.

2.3 Construction Management

- 2.3.1 General - The Construction Manager is a representative of the City employed to act as advisor and consultant to the City in construction matters related to the Contract.

All instructions to the Contractor and all communications from the Contractor to the City or the Design Consultant shall be forwarded through the Construction Manager. The Construction Manager will have authority to act on behalf of the City only to the extent provided in the Contract Documents. The City has delegated its authority to the Construction Manager to make initial decisions regarding 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 under the Contract. The Construction Manager shall interpret the intent and meaning of the Contract and shall make initial decisions with respect to the Contractor's fulfillment of the Contract and the Contractor's entitlement to compensation. The Contractor shall look initially to the Construction Manager in matters relating to the Contract.

The Construction Manager's authority to act under Paragraph 00700-2.1, Administration of the Contract, and any decision made by it in good faith either to exercise or not to exercise such authority shall not give rise to any duty or responsibility of the City or Construction Manager to the Contractor, any subcontractor, any of their agents or employees, or any other person performing any of the Work.

- 2.3.2 Representative - The Construction Manager will be represented at the Site by a resident construction manager or resident engineer who will observe the progress, quality, and quantity of the Work to determine, in general, if the Work is proceeding in accordance with the intent of the Contract Documents. The Construction Manager shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work.

In accordance with the provisions detailed elsewhere in these General Conditions, the Construction Manager will make decisions relative to all matters of interpretation or execution of the Contract Documents.

- 2.3.3 Inspection of Construction - The Construction Manager shall have the authority to reject work and materials which do not conform to the Contract Documents, and to require special inspection or testing in accordance with Paragraph 00700-5.3, Defective and Unauthorized Work.

In addition to the resident construction manager or resident engineer, the Construction Manager may employ one or more inspectors to observe the Work and to act in matters of construction under this Contract. An inspector is not authorized to revoke, alter, or waive any requirements of the Specifications. The inspector is authorized to call the attention of the Contractor to any failure of the Work, materials or workmanship to conform to the Contract Documents. The inspector shall have the authority to reject materials or, in any emergency, suspend the Work. The Contractor may appeal any such issue which it disagrees with to the Construction Manager for decision.

- 2.3.4 Acceptability of the Work - The Construction Manager has the authority to make a recommendation as to the acceptability of the Work.
- 2.3.5 Change Orders - The Construction Manager has the authority to initiate change orders; to reject change orders proposed by the Contractor or Design Consultant; to negotiate and recommend acceptance of change orders; or to order minor changes in the Work at no cost to the City.
- 2.3.6 Construction Schedule - The Construction Manager has the authority to review and recommend acceptance of the progress schedule submitted by the Contractor at the start of the Work and subsequent significant revisions for conformance to the specified sequence of work and logic.
- 2.3.7 Progress Payments - The Construction Manager has the authority to recommend acceptance or rejection of requests for progress payments which have been submitted by the Contractor.
- 2.3.8 Final Payment - The Construction Manager, with the assistance of the Design Consultant will conduct inspections to determine the dates of substantial completion of the Work and final completion of the Work, and will receive and forward to the City, for the City's review, written warranties, and related documents required by the Contract and assembled by the Contractor.
- 2.3.9 Early Possession - The Construction Manager has the authority to recommend early possession.

2.4 Design Consultant

- 2.4.1 General - The Design Consultant will have the authority to act on behalf of the City only to the extent provided in the Contract Documents.
- 2.4.2 Interpretations - The Design Consultant has the authority to be the initial interpreter of the technical requirements of the Contract Documents. Either party to the Contract may make written request to the Construction Manager for interpretations necessary for the proper execution or progress of the Work. The Construction Manager shall refer such written requests to the Design Consultant, who will render such interpretations. Where the Contractor has requested an interpretation from the Construction Manager or been notified by the Construction Manager that such interpretation has been requested by the City, any work done before receipt of such interpretations, if not in accordance with same, shall be removed and replaced or adjusted as directed by the Construction Manager without additional expense to the City.
- 2.4.3 Acceptability of the Work - The Design Consultant has the authority to make a recommendation as to the acceptability of the Work. The Design Consultant has the authority to recommend acceptance regarding the retention of defective work.
- 2.4.4 Site Observations - The Design Consultant may visit the Site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. However, the Design Consultant will not be required to make extensive or continuous on-site inspections to check the quality or quantity of the Work.

- 2.4.5 Submittal - The Contractor shall submit, through the Construction Manager, all shop drawings, product data and samples for review.

The Design Consultant has the authority to review and take other appropriate action upon the Contractor's submittals such as shop drawings, product data and samples, but only for conformance with the design concept of the Work and the information given in the Contract Documents.

3.0 CITY

3.1 General

The City, acting through the City's Representative or the Construction Manager, shall have the authority to act as the sole judge of the Work and materials with respect to both quantity and quality as set forth in the Contract.

3.2 Attention to Work

The City shall notify the Contractor in writing of the name of the individual designated as the City's Representative and the name of the individual designated by the Construction Manager to act as resident construction manager or resident engineer. The Construction Manager's designated representative normally will be at the Site of the Work. During the representative's absences, the Contractor may contact a previously designated representative of the Construction Manager.

3.3 Inspection

In addition to the resident construction manager or resident manager or resident engineer, the City may employ one or more inspectors to observe the Work and to act in matters of construction under this Contract. An inspector is not authorized to revoke, alter, or waive any requirements of the specifications. The inspector is authorized to call the attention of the Contractor to any failure of the Work or materials to conform to the Contract Documents. The inspector shall have the authority to reject material or, in any emergency, suspend the Work. The Contractor may appeal any such issue with which it disagrees to the Construction Manager for decision by the Construction Manager.

Separate and independent from the inspection above, the project may be inspected by Building Officials for code compliance. Such inspectors shall have the authority provided to them by local jurisdiction.

Construction Manager will have authority to disapprove or reject Work which Construction Manager believes to be defective, or that Construction Manager believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Construction Manager will also have authority to require special inspection or testing of the Work as provided in this Section, whether the Work is fabricated, installed, or completed.

Contractor shall give Construction Manager timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Construction Manager the required certificates of inspection or approval.

Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for City's and Construction Manager's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to the City and Construction Manager.

If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Construction Manager, it must, if requested by Construction Manager, be uncovered for observation.

Uncovering Work shall be at Contractor's expense unless Contractor has given Construction Manager timely notice of Contractor's intention to cover the same and Construction Manager has not acted with reasonable promptness in response to such notice.

If any Work is covered contrary to the written request of Construction Manager, it must, if requested by Construction Manager, be uncovered for Construction Manager's observation and replaced at Contractor's expense without adjustment of Contract Time or Contract Price.

If Construction Manager considers it necessary or advisable that covered Work be observed by Construction Manager or inspected or tested by others, Contractor, at Construction Manager's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Construction Manager may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and the City shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, the City may make a Claim therefore as provided in these documents. If, however, such Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided in these documents.

3.4 City's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within 48 hours after receipt of written notice from the City to commence and continue correction of such default or neglect with diligence and promptness, the City may, after 48 hours following receipt by the Contractor of an additional written notice and without prejudice to any other remedy make good such deficiencies.

The City also reserves the right to perform any portion of the Work due to an emergency threatening the safety of the Work, public, City, and any property or equipment.

The Contractor is forewarned that in exercising the rights and remedies under this paragraph, the City shall proceed expeditiously. In connection with such corrective and remedial action, the City may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which City has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow the City, City's representatives, agents and employees, City's other contractors, and Construction Manager and Construction Manager's Consultants access to the Site to enable City to exercise the rights and remedies under this paragraph.

All Claims, costs, losses, and damages incurred or sustained by the City in exercising the rights and remedies under this paragraph 3.4 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and City shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, City may make a claim therefore as provided in paragraph 7.5.2. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by City of City's rights and remedies under this paragraph 3.4.

3.5 City's Right to Use or Occupy

The City reserves the right, prior to Substantial Completion, to occupy, or use, any completed part or parts of the Work, providing these areas have been approved for occupancy by the City. The exercise of this right shall in no way constitute an acceptance of such parts, or any part of the Work, nor shall it in any way affect the dates and times when progress payments shall become due from the City to the Contractor or in any way prejudice the City's rights in the Contract, or any bonds guaranteeing the same. The Contract shall be deemed completed only when all the Work contracted has been duly and properly performed and accepted by the City.

Prior to such occupancy or use, the City and Contractor shall agree in writing regarding the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents.

In exercising the right to occupy or use completed parts of the Work prior to the Substantial Completion thereof, the City shall not make any use which will materially increase the cost to the Contractor, without increasing the Contract Amount, nor materially delay the completion of the Contract, without extending the time for completion.

The part or parts of the Work, if any, which the City anticipates the use or occupancy of prior to Substantial Completion, are noted in Paragraph 01010-7.0, Occupancy Requirements. Failure to include a part of the Work in the above Section, shall not limit the City's right to use or occupy parts of the Work not listed.

3.6 City's Right to Perform Work and to Award Separate Contracts

The City reserves the right to perform the work related to the Project with the City's own forces, and to award separate contracts in connection with the Project or other work on the Site under these or similar General Conditions. If the Contractor claims that delay, damage, or additional cost is involved because of such action by the City, the Contractor shall make such claim as provided elsewhere in the Contract Documents.

When separate contracts are awarded for different portions of the Project or other work on the Site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Agreement.

The City will provide for the coordination of the work of the City's own forces and of each separate Contractor with the Work of the Contractor, who shall cooperate therewith as provided in Paragraph 00700-4.8.3, Cooperation.

4.0 CONTRACTOR

4.1 Office

The Contractor's office at the Project Site is hereby designated as the legal address of the Contractor for the receipt of documents, samples, notices, letters, and other articles of communication.

4.2 Contractor's Representative

The Contractor shall notify the City in writing of the names of the persons who will act as the Contractor's representative and his or her designated alternate, and who shall have the authority to act in matters relating to this Contract. The Contractor, acting through its representative, shall give personal attention to, and shall manage the Work, so that it shall be prosecuted faithfully. The Contractor's representative shall be an employee of the Contractor. Upon written request of the Contractor, this employment requirement may be waived by the City. The City's waiver, if granted, will be in writing. There is no obligation by the City to waive this provision regardless of the effect on the Contractor's operations. Such waiver may be rescinded by City upon reasonable written notice thereof.

At all times during the progress of the Work, the Contractor's representative shall be personally present at the Project site, or a designated alternate shall be at the Project site who has the authority to act in matters relating to the Contract. The Contractor's representative or designated alternate shall have the authority to carry out the provisions of the Contract and to supply materials, equipment, tools, and labor without delay for the performance of the Work. If neither the Contractor's representative nor a designated alternate is at the Project site, the City acting through the Construction Manager shall have the authority as provided in Paragraph 00700-6.6, Temporary Suspension of Work, to suspend the work until such a representative is at the Project site.

Before initial work is begun on the Contract, the Contractor shall file, with the Construction Manager, addresses and telephone numbers where the Contractor's and all subcontractors' representatives can be reached during all hours, including nights and weekends when work is not in progress.

4.3 Construction Procedures

The Contractor will supervise and direct the work. The Contractor has the authority to determine the means, methods, techniques, sequences, and procedures of construction, except in those instances where the City, to define the quality of an item of work, specifies in the Contract, a means, method, technique, sequence, or procedure for construction of that item of Work.

4.4 Contractor's Employees

The Contractor shall be responsible for the adequacy, efficiency, and sufficiency of its employees. Workers shall have sufficient knowledge, skill, and experience to perform properly the work assigned to them.

The Contractor shall employ only competent, skillful workers to perform the Work. If any subcontractor or person employed by the Contractor or its subcontractors, appear to the Construction Manager or City's Representative to be incompetent or act in a disorderly or improper manner, such person or subcontractor shall be discharged from the site immediately by the Contractor upon written direction of the Construction Manager or City's Representative, and such person shall not again be employed on the Project.

4.5 Subcontractors

The Contractor shall give their personal attention to the fulfillment of the contract and shall keep the work under his control.

Subcontractors will not be recognized as having a direct relationship with the City. The persons engaged in the Work, including employees of subcontractors and suppliers, will be considered employees of the Contractor. The Contractor will be responsible for their work and their work shall be subject to the provisions of the Contract. The Contractor is as fully responsible to the City for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them as the Contractor is for the acts and omissions of persons directly employed by the Contractor. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the City. References in the Contract Document to actions required of subcontractors, manufacturers, suppliers, or any party other than the Contractor, the City, the Construction Manager, or the Design Consultant shall be interpreted as requiring that the Contractor shall require such subcontractor, manufacturer, supplier, utility company, or party to perform the specified action, unless the Contract Documents specifically state that the Work is not included in the Contract.

The Contractor shall not employ any subcontractors that are not properly licensed in accordance with State law. Prior to commencement of any work by a subcontractor, the Contractor shall submit verification to the Construction Manager that the subcontractor is properly licensed for the work it will perform. Changes to subcontractors listed in the Bid in accordance with Public Contract Code 4100 et. seq., shall be made only with the approval of the City.

4.6 Contractor's Equipment and Facilities

The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the Work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.

4.7 Public Safety and Convenience

The Contractor shall conduct its work to ensure the least possible obstruction to traffic and inconvenience to the public and the residents in the vicinity of the Work and to ensure the protection of persons and property at no extra cost to the City. The Contractor shall have under construction no greater length or amount of work than it can prosecute properly with due regard to the rights of the public.

4.8 City-Contractor Coordination

4.8.1 Service of Notice - Notice, order, direction, request, or other communication given by the Construction Manager or City to the Contractor shall be deemed to be well and sufficiently given to the Contractor if delivered to the Contractor's Representative designated in Paragraph 00700-4.2, Contractor's Representative, to the Contractor's office designated in Paragraph 00700-4.1, Office, or to the Contractor's address provided in the Bid Proposal.

4.8.2 Suggestions to Contractor - Plans or methods of work suggested by the City, the Construction Manager, or the Design Consultant to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor. The City, and Construction Manager, or the Design Consultant assume no responsibility therefore, and in no way will be held liable for any defects in the Work which may result from or be caused by use of such plan or method of work.

4.8.3 Cooperation - The Contractor shall afford the City, the Construction Manager and separate contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work and shall connect and coordinate the Work with theirs as required by the Contract Documents.

If any part of the Contractor's Work depends for proper execution or results upon the work of the City or any separate contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the Construction Manager any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acceptance of the City's or separate contractor's work as fit and proper to receive the Work, except as to latent defects which subsequently become apparent in such work by others.

If requested by the Contractor, the City shall arrange meetings with other contractors performing work on behalf of the City to plan coordination of construction activities. The City shall keep the Contractor informed of the planned activities of other contractors.

Differences and conflicts arising between the Contractor and other contractors employed by the City or between the Contractor and the workers of the City about their work, shall be submitted to the City for its decision in the matter. If such separate contractor sues the City on account of any delay or damage alleged to have been caused by the Contractor, the City shall notify the Contractor who shall, at the City's election, defend such proceedings at the Contractor's expense. If any judgment or award against the City arises from any such litigation whether defended by City or by

Contractor, the Contractor shall pay or satisfy said judgment or award and shall reimburse the City for all attorney's fees and court costs which the City has incurred or for which it is liable.

4.9 Permits

Unless specifically stated to be provided by the City, Contractor shall apply for, obtain, and comply with all the terms, conditions and requirements attached to all permits, bonds and licenses required by local, state, or federal agencies to perform work, construct, erect, test and startup of any equipment or facility for this Contract. Permits shall be kept on-site. Where operating permits are required, the Contractor shall apply for and obtain such operating permits in the name of the City and provide the permit in an appropriate frame or file holder when the City accepts substantial completion of the equipment or facility. The Contractor shall give all notices necessary or incidental to the due and lawful prosecution of the work.

Any permits, bonds, licenses and fees therefore required for the performance of work under this Contract and not specifically mentioned herein as having been obtained and paid by the City shall be included in the Contractor's bid price.

The Contractor shall be responsible for satisfying all code requirements. Any code inspections will be coordinated by the Construction Manager. The Contractor shall comply with all construction conditions stipulated in the permits.

The Contractor shall apply for and obtain all safety permits for excavations, tunneling, trenches, construction (building structure, scaffolding, or false work) and demolition required by CAL/OSHA including but not limited to, the permits required by Labor Code Section 6500.

The Environmental Quality Act of 1970 (Public Resources Code, Sections 21000 to 21176 incl.) may be applicable to permits, licenses and other authorizations which the Contractor must obtain from local agencies in connection with performing the work of the contract. The Contractor shall comply with the provisions of said statutes in obtaining such permits, licenses and other authorizations and they shall be obtained in sufficient time to prevent delays to the work.

If the City has obtained permits, licenses or other authorizations, applicable to the work, in conformance with the requirements in said Environmental Quality Act of 1970, the Contractor shall comply with the provisions of said permits, licenses and other authorizations.

4.10 Contractor's Responsibility for the Work and Materials

Until acceptance of the Work, the Contractor shall have the charge and care of the Work and of the materials to be used therein and shall bear the risk of injury, loss, or damage, to any part thereof (regardless of whether partial payments have been made on such damaged portions of the Work) by the action of the elements or from any other cause, whether arising from the non-execution of the Work. The Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the Work or the materials occasioned by any cause before its completion and acceptance and shall bear the expense thereof, except for such injuries, losses, or damages as are directly and proximately caused by acts of the City.

4.11 Laws to be Observed

The Contractor shall keep fully informed of all existing and future County, State, and National laws and regulations and all municipal ordinances and regulations of the City which in any manner affect those engaged or employed in the Work and of all such orders and decrees of bodies having any jurisdiction or authority over the same; and shall protect and indemnify the City and all of its officers, agents, and servants against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, orders, or decrees whether by the Contractor or its employees. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications or Contract for the Work in relation to any such law, ordinance, regulations, order or decree, the Contractor shall immediately report the same to the Construction Manager in writing.

- 4.11.1 Prevailing Wage - The Contractor shall comply with Labor Code Sections 1774 and 1775. In accordance with said Section 1775, the Contractor shall forfeit, as a penalty to the City of Stockton, \$25 for each calendar day or portion thereof, for each workman paid less than the prevailing rates as determined by the Director of Industrial Relations for such work or craft in which such workman is employed for any work done under the contract by him or by any subcontractor under him violation of the provisions of the Labor Code and, in particular, Labor Code Section 1770 and 1780, inclusive.

In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor.

Pursuant to provisions of Section 1773 of the Labor Code of the State of California, the City has obtained the general prevailing rate of wages (which rate includes employer payments for health and welfare, vacation, pension, travel time, and subsistence pay as provided for in Section 1773.8 of said Code, apprenticeship or other training programs authorized by Section 3093 of said code and similar purposes) applicable to the work to be done, 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 craft, classification or type of workman concerned. These wage rates are set forth in the Division of Industrial Relations publication entitled "General Prevailing Wage Rates", which is part of the Contract.

Pursuant to the provisions of Section 1773.2 of the Labor Code (as amended) the general prevailing wage rates for each craft, classification or type of workman are on file at the Municipal Utilities Department, 2500 Navy Drive, Stockton, California. A copy of said wage rates shall be posted by the Contractor in a prominent place at the site of the work.

The City will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate more than 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 his bid and will not under any circumstances be considered as the basis of a claim against the City on the Contract.

- 4.11.2 Travel and Subsistence Payments - Attention is directed to the requirements of Section 1773.8 of the Labor Code. The Contractor shall make travel and subsistence payment to each workman, needed to execute the work, in accordance with the requirements in said Section 1773.8.
- 4.11.3 Certified Payrolls - In accordance with Section 1776 of the Labor Code, each Contractor and subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the

actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the project.

The payroll records shall be certified and submitted to the City, and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:

- a. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.
- b. A certified copy of all payroll records 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.
- c. A certified copy of all payroll records shall be made available upon request by the public in accordance with Section 1776 of the Labor Code.

The Contractor is responsible for its and its subcontractors' compliance with the provisions of Section 1776 of the Labor Code.

4.11.4 Overtime Requirements - The Contractor shall forfeit, as a penalty to the City, the penalty as provided in the Labor Code for each worker employed in the execution of the Contract by the Contractor, or any subcontractor under the Contractor, for each day during which such worker is required or permitted to work more than eight (8) hours in any one day and forty (40) hours in any one 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 a day and forty (40) hours during one week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day, at not less than one and a half (1½) times the basic rate of pay as provided for in the Labor Code.

4.11.5 Apprentice and Trainee - Attention is directed to the provisions in Section 1777.5 of the Labor Code and in accordance with the regulations of the California Apprenticeship Council concerning the employment of apprentices by the Contractor or any subcontractor under the Contractor.

Section 1777.5 requires the Contractor or subcontractors employing tradespersons in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site of the project which administers the apprenticeship program in that trade for a certificate of approval. The Contractor and subcontractors are required to submit contract award information to the applicable joint apprenticeship committee. As provided for in Section 1777.5 of the Labor Code, the Contractor is required to make contributions to funds established for the administration of apprenticeship programs.

It shall be the responsibility of the Contractor to abide by the provisions of Section 1777.5 of the Labor Code and to require all subcontractors employed by or contracting with the Contractor to abide by said provisions. The Contractor shall furnish the City with all evidence of compliance with this Code Section when requested by the City.

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

For failure to comply with Section 1777.5 of the Labor Code, the Contractor shall be subject to the penalties in Section 1777.7 of the Labor Code.

4.11.6 Workers' Compensation Insurance - The Contractor is required to secure the payment of compensation to its employees in accordance with the provisions of Sections 1860 and 3700 of the Labor Code and Paragraph 00820-2.4, Workers' Compensation Insurance.

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

No discrimination shall be made in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every Contractor for public works violating this Section is subject to all the penalties imposed for a violation of this chapter.

Attention is also directed to the requirement in Section 1431 of the Labor Code and Sections 300 and 317 through 323 of Title 8 of the California Administrative Code that the Contractor shall submit his Equal Employment Opportunity Program and certification fee to the Fair Employment Practice Commission, if the bid price for the contract exceeds \$200,000.

4.11.8 Vehicle Code - Pursuant to the authority contained in Vehicle Code Section 591, the City has determined that within such areas as are within the limits of the project and are open to public traffic, the following requirements of the Vehicle Code will apply: The lighting requirements in Section 25803; the brake requirements in Division 12, Chapter 3; the splash apron requirements in Section 27600; and, when operated on completed or existing treated base, surfacing, pavement or structures, except as otherwise provided in Section 7-1.02, "Weight Limitations," the weight limitation requirements contained in Division 15.

Attention is directed to the statement in said Section 591 that this Section shall not relieve him or any person from duty of exercising due care. The Contractor shall take all necessary precautions for safe operations of his equipment and the protection of the public from injury and damage from such equipment.

Any other requirements set forth in Division 11, 12, 13, 14 and 15 of the Vehicle Code which the Department, pursuant to the authority contained in Vehicle Code Section 591, will require compliance with, will be set forth in the special provisions.

4.11.9 Affirmative Action - Attention is directed to the requirements of the Stockton Municipal Code, Chapter 3, Part V, as amended with reference to the affirmative action requirements for Contractors on Public Works projects of the City of Stockton. Such requirements shall be followed. Guidelines and the necessary reporting requirements are contained in the publication entitled: "Affirmative Action Guidelines and Procedures For Respondents To A City of Stockton Request for Proposals" which is made a part of these specifications by this reference. Failure of the Contractor to conform to the provisions of the City of Stockton's Affirmative Action Program will result in his bid being subject to rejection.

4.12 Safety

- 4.12.1 Contractor's Safety Responsibility - The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), the California Occupational Safety and Health Act, and all other applicable Federal, State, County, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirement shall be followed.

No provision of the Contract Documents shall act to make the City, the Construction Manager or any other party than the Contractor responsible for safety. The Construction Manager shall not have authority for safety on the project. The Contractor shall indemnify, defend and hold harmless the City, Construction Manager, or other authorized representatives of the City, from and against all actions, damages, fines, suits, and losses arising from the Contractor's failure to meet all safety requirements and/or provide a safe work site.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Construction Manager and the City. In addition, the Contractor must promptly report in writing to the Construction Manager all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the Site, giving full details and statements of witnesses. The Contractor shall make all reports as are, or may be, required by any authority having jurisdiction, and permit all safety inspections of the work being performed under this Contract.

If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Construction Manager, giving full details of the claim.

- 4.12.2 Safety Program - The Contractor shall establish, implement, and maintain a written injury prevention program as required by Labor Code Section 6401.7. Before beginning the Work, the Contractor shall prepare and submit to the Construction Manager a Contractor Safety Program that provides for the implementation of all the Contractor's safety responsibilities in connection with the Work at the site and the coordination of that program and its associated procedures and precautions with safety programs, precautions and procedures of each of its subcontractors and other prime Contractors performing work at the site. The Contractor shall be solely responsible for initiating, maintaining, monitoring, coordinating, and supervising all safety program, precautions, and procedures in connection with the Work and for coordinating its programs, precautions, and procedures of the other prime contractors and subcontractors performing the Work at the site. The Safety Program should contain all the necessary elements for the Contractor to administer its program on site. At a minimum, this written Safety Program shall address the elements required by Labor Code Section 6401.7. The Contractor shall obtain a copy of the City's Municipal Utilities Department's Injury and Illness Prevention Program and the Safety Manual and incorporate appropriate safety procedures into their Safety Program. The Contractor shall also comply with the Department's "Contractor's Safety Rules" in Section 01500-10.

The program shall also address the following:

- a. Compliance with Laws, Rules, and Regulations
- b. Infractions of Safety Rules

1. Reported to Contractor's designated Safety Supervisor
 2. Time correction
 3. Contractor to enforce safety requirements on its subcontractors
 4. Non-complying employees to be removed from the Project
- c. Housekeeping
1. Continuous cleaning required
 2. Final clean up required
- d. Means of Implementing the Program
1. All new employees to receive training on the Contractor's Safety Program prior to starting work.
 2. Periodic toolbox meetings with agenda recorded.
 3. Documented safety inspections by Safety Supervisor.
 4. Establish emergency procedures and telephone numbers including the procedure for the immediate removal to a hospital or a doctor's care of persons who may be injured on the jobsite. The Contractor shall maintain at its office or other well-known place at the Site safety equipment applicable to the Work as prescribed by the authorities, and all items necessary for giving first aid to the injured.
 5. Project bulletin board with required policies.
 6. At least two employees on each shift should have First Aid training and maintain a current First Aid card issued by an agency such as the American Red Cross.
 7. Completion of a job hazard analysis for specific construction activities.
 8. Establish a hazard communication program for informing the Contractor's and subcontractor's personnel, Construction Manager, City, and other affected parties of specific hazards on the project.
 9. Establish a confined space entry program in accordance with Cal OSHA requirements.
- e. Define the duties and responsibilities of Contractor management personnel for safety.
1. Project Manager
 2. General Superintendent
 3. Foreman
 4. Safety Supervisor
- f. Accident Investigation
1. Investigate all accidents and near misses.

2. Develop steps to prevent a reoccurrence.
3. Completion of all reporting paperwork.

The Contractor's compliance with requirements for safety and/or the Construction Manager's review of the Contractor's Safety Program shall not relieve or decrease the liability of the Contractor for safety. The Construction Manager's review of the Contractor's Safety Program is only to determine if the above listed elements are included in the program.

- 4.12.3 Safety Supervisor - The Contractor shall appoint an employee as safety supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Program. The Contractor shall notify the Construction Manager in writing prior to the commencement of work of the name of the person who will act as the Contractor's safety supervisor and furnish the safety supervisor's resume to the Construction Manager.

The Contractor will, through and with his Safety Supervisor, ensure that all its employees and its subcontractors of any tier, fully comply with the Project Safety Policies. The Safety Supervisor shall be a full-time employee of the Contractor whose responsibility shall include supervising compliance with applicable safety requirements on the work site and for developing and implementing safety training classes for all job personnel. The City shall have the authority to require removal of the Contractor's Safety Supervisor if the representative is judged to be improperly or inadequately performing the duties; however, this authority shall not in any way affect the Contractor's sole responsibility for performing this work safely, nor shall it impose any obligation upon the City to ensure the Contractor perform its work safely.

- 4.12.4 Safety Coordination Meetings - The Contractor and its affected subcontractors shall attend safety coordination meetings with the Construction Manager and any other affected parties. The meeting shall be held at least monthly and prior to the start of new construction activities.

Construction activities will be reviewed prior to the start of work in the various areas to determine potential hazards. The Contractor will be responsible for preparing job hazard analyses to breakdown the activities to be performed in a step-by-step procedure and provide safety guidelines for each step and any special equipment necessary to protect workers. The Contractor will act as facilitator for the meeting. The Construction Manager will participate in the safety coordination meetings but will not direct the Contractor on how to perform its safety operations.

- 4.12.5 Safety and Protection - The Contractor shall take all necessary protection to prevent damage, injury, and loss to:
- a. All employees on the Project, employees of all subcontractors, and other persons and organizations who may be affected thereby.
 - b. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 - c. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement during construction.

The Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss and shall erect and maintain all necessary safeguards for such safety and protection. The Contractor shall notify owners of adjacent property and of underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor, supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the Contractor.

- 4.12.6 Excavation Safety - In accordance with the provisions of Section 6705 of the Labor Code, the Contractor shall submit, in advance of excavation five feet or more in depth, detailed plans showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from hazard of caving ground during such excavation. If such plans vary from the shoring system standards set forth in the Construction Safety Orders in Title 8, California Code of Regulations, the plans shall be prepared and signed by a registered civil or structural engineer. Shoring, bracing, sloping, or other protective system shall not be less effective than required by the California Construction Safety Orders. The City's review of the Contractor's excavation plan is only for general conformance to the California Construction Safety Orders.

Prior to commencing any excavation, the Contractor shall designate in writing to the Construction Manager the "competent person(s)" with the authority and responsibilities designated in the Construction Safety Orders.

- 4.12.7 Safety Emergencies - In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Construction Manager, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Construction Manager prompt written notice if the Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby.

- 4.12.8 Safety Violations - Should the Contractor fail to correct an unsafe condition; the Construction Manager shall immediately notify the City of the Contractor's failure to correct the unsafe condition. The City shall then notify the Contractor through the Construction Manager that the unsafe condition must be corrected or the work in question will be stopped in accordance with Paragraph 00700-6.6, Temporary Suspension of Work until the condition is corrected to the satisfaction of the City. No extension of time or additional compensation will be granted because of any stop order so issued. The notification and suspension of such work or the failure to provide such notification and suspension by the Construction Manager and City shall not relieve the Contractor of its sole responsibility and liability for safety.

The City shall have the authority to require the removal from the project of the foreman and/or superintendent in responsible charge of the work where safety violations occur.

- 4.12.9 Equipment Safety Provisions - The completed Work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the State and Federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the Work, including City-selected equipment, subject to such safety regulations shall be fabricated, furnished, and installed in compliance with these requirements. All equipment furnished shall be grounded and provided with guards and protection as required by safety codes. Where vapor-tight or explosion-proof electrical installation is required by safety codes, this shall be provided. Contractors and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. The Contractor shall notify all equipment suppliers and subcontractors of the provisions of this paragraph.

4.12.10 Hazard Communication Programs- Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

4.13 Review of Contract Documents and Field Conditions by Contractor; Single Point Responsibility of Contractor - In addition to the examination and reviews performed, and obligations assumed, incidental to making the representations set forth in the Contract, Contractor shall carefully study and compare each of the Contract Documents with the others and with information furnished by City, and shall promptly report in writing to City's Representative any errors, inconsistencies, or omissions in the Contract Documents or inconsistencies with applicable code requirements observed by Contractor. Contractor shall determine the most desirable method of achieving City's requirements in terms of cost, technology, quality and speed of delivery.

Contractor is responsible for the construction of the Project and shall provide all services pursuant to this Contract in a manner consistent with the standard of care under California law applicable to those who specialize in providing such services for projects of the type, scope, and complexity of the Project (including its contracting mode). Contractor shall perform its construction services in accordance with the best practices applicable to Contractor's field ordinarily used by member of construction industry in the location where the services are to be performed. Contractor shall take field measurements, verify field conditions, and carefully compare with the Contract Documents such field measurements, conditions, and other information known to Contractor before commencing the Work. Errors, inconsistencies, or omissions discovered at any time shall be promptly reported in writing to City's Representative.

If Contractor performs any construction activity which it knows, or should know, involves an error, inconsistency, or omission in relation to the Contract Documents, without notifying and obtaining the written consent of City, Contractor shall be responsible for the resultant losses, including, without limitation, the costs of correcting Defective Work.

Contractor agrees that it has single point responsibility for the construction of this Project.

4.14 Supervision and Construction Procedures - Contractor shall supervise, coordinate, and direct the Work using Contractor's best skill and attention. Contractor shall be solely responsible for, and have control over construction means, methods, techniques, sequences, procedures, and the coordination of all portions of the Work, including, but without limitation, landscape and site work, utilities, and building systems.

Contractor shall be responsible to City for acts and omissions of Contractor's agents, employees, and subcontractors, of all tiers, and their respective agents and employees.

Contractor shall not be relieved of its obligation to perform the Work in accordance with the Contract Documents either by acts or omissions of City or City's Representative in the administration of the Contract, or by tests, inspections, or approvals required, or performed, by persons or firms other than Contractor.

Contractor shall be responsible for inspection of all portions of the Work, including those portions already performed under this Contract, to determine that such portions conform to the requirements of the Contract Documents and are ready to receive subsequent Work.

Contractor shall always participate in, and implement, the CEQA and NEPA mitigation processes and ensure performance as required in the Contract Documents.

Contractor shall always maintain good discipline and order among its employees and subcontractors. Contractor shall provide competent, fully qualified personnel to perform the Work.

- 4.15 Labor And Materials - Unless otherwise provided in the Contract Documents, Contractor shall provide and pay for all services, other services, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other things necessary for proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work.

5.0 CONTROL OF WORK AND MATERIALS

5.1 Means and Methods

It is expressly stipulated that the drawings, specifications and other Contract Documents set forth the requirements as to the nature of the completed Work and do not purport to control the method of performing work except in those instances where the nature of the completed Work is dependent on the method of performance.

Except as provided elsewhere in the Contract Documents, neither the City, Design Consultant nor the Construction Manager will be responsible for or have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work. Except as provided elsewhere in the Contract Documents, neither the City, Design Consultant nor the Construction Manager will be responsible for or have control or charge over the acts or omissions of the Contractor, or any of their subcontractors, agents or employees, or any other persons performing any of the Work. Any general control of the Work exercised by the City or its authorized representatives shall not make the Contractor an agent of the City, and the liability of the Contractor for all damages to persons and/or to public or private property arising from the Contractor's execution of the Work shall not be lessened because of such general control.

Neither the inspection by the City, Design Consultant, or Construction Manager, nor any order, measurement, approved modification, or payment of monies, nor acceptance of any part or whole of the Work by the City, Design Consultants, Construction Manager, or their agents shall operate as a waiver of any provision of the Contract.

Acceptance by the Construction Manager, City and/or Design Consultant of any drawings, or any information regarding materials and equipment the Contractor proposes to furnish or method of work shall not be regarded as an assumption of risks or liability by the Construction Manager, Design Consultant, or the City, or any officer or employee thereof, and the Contractor shall have no claim under the Contract on account of the failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so accepted. Such acceptance shall be considered to mean merely that the Construction Manager, City, and/or Design Consultant has no objection to the Contractor using, upon its own full responsibility, the plan or method of work proposed, or furnishing the materials and equipment proposed.

5.2 City-Furnished Materials

Materials, if furnished by the City, will be made available as designated in the General Requirements. The cost of loading, unloading, hauling and handling, and placing City-furnished

materials shall be considered as included in the price bid for the Contract item involving such City-furnished material.

Contractor shall inspect and assure itself of the amount and soundness of such materials.

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 City for the cost of replacing City-furnished material and such costs may be deducted from any monies due or to become due by the Contractor.

5.3 Defective and Unauthorized Work

Materials and workmanship not conforming to the requirements of the Contract Documents shall be considered defective and will be subject to rejection. Defective work or material, whether in place or not, shall be removed immediately from the Site by the Contractor, at its expense, when so directed by the Construction Manager.

Any work done beyond the limits of work, lines, and grades shown on any approved plans or established by the Construction Manager, or any extra work done without written authority, will be considered as unauthorized and will not be paid for.

Upon failure on the part of the Contractor to comply with any order of the Construction Manager made under the provisions of this paragraph, the Construction Manager shall have authority to require special inspection and testing to verify if work is defective. Confirmed defective work shall be remedied, or removed and replaced, and unauthorized work be removed. The costs thereof will be deducted from any monies due or to become due to the Contractor. The time, cost and compliance requirements stipulated in Paragraph 00700-3.4, City's Right to Carry Out the Work, shall apply for this paragraph also.

5.4 Unnoticed Defects

Any defective work or material that may be discovered by the City, Construction Manager, or Design Consultant before the final acceptance of the Work, or before final payment has been made, or during the warranty period, shall be removed and replaced by work and materials which shall conform to the provisions of the Contract Documents. Failure on the part of the City, Construction Manager, or Design Consultant to condemn or reject bad or inferior work or materials shall not be construed to imply acceptance of such work or materials.

5.5 Right to Retain Imperfect Work

If any part or portion of the work performed or material furnished under this Contract shall prove defective and not in accordance with the Drawings and Specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance as to make the work dangerous or unsuitable, or if the removal of such work will create conditions which are dangerous or undesirable, the City shall have the right and authority to retain such work but shall make such deductions in the final payment therefore as may be just and reasonable.

6.0 PROGRESS OF THE WORK

6.1 Beginning of Work

The Contractor shall begin work within ten (10) days of the effective date of the Notice to Proceed and shall diligently prosecute the same to completion within the time limit.

Should the Contractor begin work in advance of receiving Notice to Proceed, any work performed 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.

6.2 Time of Completion

Time shall be of the essence of the Contract. The Contractor shall prosecute the work so that the various portions of the project shall be complete and ready for use within the time specified in Paragraph 01010-3.0, Time Allowed for Completion. It is expressly understood and agreed by and between the Contractor and the City that the Contract time for completion of the work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality and the nature of the work.

6.3 Delays

6.3.1 Notice of Delays - When the Contractor foresees a delay in the prosecution of the Work and, in any event, immediately upon the occurrence of a delay, the Contractor shall notify the Construction Manager in writing of the probability of the occurrence and the estimated extent of the delay, and its cause. The Contractor shall take immediate steps to prevent, if possible the occurrence or continuance of the delay. The Contractor agrees that no claim shall be made for delays which are not called to the attention of the Construction Manager at the time of their occurrence.

6.3.2 Non-excusable Delays - Non-excusable delays in the prosecution of the Work shall include delays which could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its subcontractors, at any tier level, or suppliers.

6.3.3 Excusable Delays - Excusable delays in the prosecution or completion of the Work shall include delays which result from causes beyond the control of the Contractor and City and which could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its subcontractors, at any tier level, or suppliers.

6.3.3.1 Abnormal Delays - Delays caused by acts of god, fire, unusual storms, floods, tidal waves, earthquakes, strikes, labor disputes, and freight embargoes, shall be considered as excusable delays insofar as they prevent the Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical activity item(s) on the latest favorably reviewed progress schedule.

6.3.3.2 Weather Delays - Should inclemently weather conditions or the conditions resulting from weather prevent the Contractor from proceeding with seventy-five (75) percent of the normal labor and equipment force engaged in the current critical activity item for a period of at least five (5) hours per day toward completion of such operation or operations, and the crew is dismissed as a result thereof, it shall be a weather delay day. The Contractor may be granted a time extension pursuant to Paragraph 00700-6.4.2.c, Weather Delays.

6.3.3.3 Material Shortages - Upon the submission of satisfactory proof to the Construction Manager by the Contractor, shortages of material may be acceptable as grounds for granting a time extension. In order that such proof may be satisfactory and acceptable to the Construction Manager, it must be demonstrated by the Contractor that the Contractor has made every effort to obtain such materials, or obtain acceptable substitute materials, from all known sources within reasonable reach of the proposed Work. Only the physical shortage of material, caused by unusual circumstances, will be considered under these provisions 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 Construction Manager 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 usual practices in obtaining such quantities. A time extension for shortage of material will not be considered for material ordered or delivered late or whose availability is affected by virtue of the mishandling of procurement. The above provisions apply equally to equipment to be installed in the work.

6.3.4 Compensable Delays - Compensable delays in the prosecution or completion of the Work shall include delays that occur through no fault of the Contractor and prevent the Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical activity item(s) on the latest favorably reviewed progress schedule due to the following cause(s):

- a. Delays due solely to the actions and/or inactions of the City.
- b. Delays due to differing site conditions as defined in Paragraph 00700-7.3, Differing Site Conditions.
- c. Delays due to other Contractors employed by the City who interfere with the Contractor's prosecution of the Work as defined above.

No delay shall be compensable unless the claimed event or occurrence delays completion of the work beyond the contractual completion date or the completion date shown in the accepted initial or updated schedules, and the delay affects a critical activity while such activity is on the critical path.

6.3.5 Concurrent Delays - Concurrent delays are those delay periods when the prosecution of the Work is delayed during the same period due to causes from a combination of the delays defined in Paragraphs 00700-6.3.2, Non-Excusable Delays, 00700-6.3.3, Excusable Delays, or 00700-6.3.4, Compensable Delays. During such concurrent delay periods, time extensions will be granted in accordance with Paragraph 00700-6.4, Time Extensions; however, the Contractor shall not be compensated for its delay damages as defined in Paragraph 00700-6.4.3, or for any other damages, and the City shall not assess its actual costs as defined in Paragraph 00700-6.4.1, Non-excusable Delays.

6.4 Time Extensions

6.4.1 Non-excusable Delays - The City may grant an extension of time for non-excusable delays if the City deems it is in its best interest. If the City grants an extension of time for non-excusable delays, the Contractor agrees to pay the City's actual costs, including charges for engineering, inspection and administration incurred during the extension.

6.4.2 Excusable or Compensable Delays - If the Contractor is delayed in the performance of its work as defined in Paragraphs 00700-6.3.3, Excusable Delays, or 00700-6.3.4, Compensable Delays, then the Contract completion date may be extended by the City for such time that, in the City's and Construction Manager's determination, the Contractor's completion date will be delayed, provided that the Contractor strictly fulfills the following:

- a. The Contractor shall provide notification, in accordance with Paragraph 00700-6.3.1, Notice of Delays, and submit in writing a request for an extension of time to the Construction Manager stating at a minimum the probable cause of the delay and the number of days being requested. The time extension request shall be submitted in accordance with the requirements of Paragraph 01310-4.0, Time Impact Analyses.
- b. If requested by the Construction Manager, the Contractor shall promptly provide sufficient information to the Construction Manager to assess the cause or effect of the alleged delay, or to determine if other concurrent delays affected the work.
- c. Weather Delays. The Contractor will be granted a non-compensable time extension for weather caused delays, pursuant to Paragraph 00700-6.3.3.2, Weather Delays, over and above an allowance as provided for in Paragraph 01010-5.0, Weather Days. No time extensions for weather delays will be granted until the total number of weather days exceeds this allowance.

Should the Contractor fail to fulfill any of the foregoing, which are conditions precedent to the right to receive a time extension, the Contractor waives the right to receive a time extension.

During such extension of time, neither extra compensation for engineering, inspection and administration nor damages for delay will be charged to the Contractor. It is understood and agreed by the Contractor and City that time extensions due to excusable or compensable delays will be granted only if such delays involve controlling operations which would prevent completion of the whole Work within the specified Contract time.

Should the Contractor fail to complete the work within the time specified in the contract, as extended in accordance with this clause if appropriate, the Contractor shall pay to the City liquidated damages in accordance with Paragraph 00700-6.5, Liquidated Damages.

6.4.3 Delay Damages

- 6.4.3.1 Indirect Overhead - The Contractor shall be reimbursed for indirect overhead expenses for periods of time when the Work is delayed as defined in Paragraph 00700-6.3.4, Compensable Delays. However, no reimbursement for indirect overhead or any other costs or damages shall be made for compensable delays which occur during a concurrent delay as defined in Paragraph 00700-6.3.5, Concurrent Delays. No reimbursement for indirect overhead as covered in this Section shall be made for any time extensions granted for Contract change orders as provided in Section 01035, Modification Procedures. As a condition precedent to any reimbursement, the Contractor must fulfill all conditions as provided in Paragraph 00700-6.4.2, Excusable or Compensable Delays. No additional markup for overhead or profit shall be provided for such indirect overhead expenses.

Payment to the Contractor for indirect overhead expenses will be made only if the extended Contract period granted for the compensable delay(s) is required to complete the work following the depletion of the original contract period and any time extensions granted other than compensable time extensions. Except as provided herein, the Contractor shall have no claim for damage or compensation for any delay including not limited to extended field costs, extended home office overhead costs, impact, inefficiency, unabsorbed home office overhead, under absorbed home office overhead, hindrance, disruption, or any other damage arising from delay, no matter how characterized, including delay claims of its subcontractors/suppliers of every tier.

- 6.4.3.1.1 Indirect Field Overhead - For those allowable delay periods as defined in Paragraph

00700-6.4.3, Indirect Overhead, the Contractor shall be reimbursed for its indirect field overhead based on:

- a. Invoices for all field office equipment.
- b. Actual salary for field office staff.
- c. Fair rental values acceptable to the Construction Manager as described in Paragraph 01035-3.0, Force Account Payment for construction equipment idled due to the delay.

6.4.3.1.2 Indirect Home Office Overhead - For those allowable delay periods as defined in Paragraph 00700-6.4.3, Indirect Overhead, the Contractor shall be reimbursed for its daily home office overhead based on the following formula:

$$\frac{\text{Contract Bid Price (\$)} \times (0.04)}{\text{Contract Period (Days)}} = \text{Daily Home Office Overhead (\$/Day)}$$

As it is impractical to determine the actual home office overhead, such reimbursement shall be mutually agreed between the City and Contractor to encompass full payment for any home office overhead expenses for such periods of time for the Contractor and all subcontractors. The Contractor agrees to indemnify, defend and hold the City harmless for any indirect overhead claims from its subcontractors.

6.5 Liquidated Damages

It is agreed by the parties to the Contract that time is of the essence in the completion of this Work, and that in case all the Work called for under the Contract is not completed before or upon the expiration of the time limit as set forth in these Contract Documents, as modified by extensions of time granted by the City, damage will be sustained by the City. As it is impracticable to determine the actual delay damage; it is, therefore, agreed that the Contractor shall pay liquidated damages to the City in the amount set forth in Paragraph 01010-4.0, Damages For Delays, per day for each day's delay beyond the time prescribed to complete the Work. The Contractor agrees to pay such liquidated damages and in case the same are not paid, agrees that the City may deduct the amount thereof from any monies due or that may become due the Contractor under the Contract.

6.6 Termination By City For Cause

Subject to prior notice from City and Contractor's cure rights set forth in this Section, City will have the right to terminate the Contract for cause after the occurrence of any of the following events:

- a. Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
- b. Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
- c. A receiver is appointed to take charge of Contractor's property.
- d. The Work is not completed with the applicable Contract Time, as such Contract Time may be adjusted in accordance with this Contract, and Contractor is not diligently prosecuting the completion or correction of the Work.

- e. Contractor persistently or repeatedly refuses or fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to complete the Work in accordance with the Contract Documents.
- f. Contractor fails to make prompt payment of amounts properly due subcontractors after receiving payment from City.
- g. Contractor disregards Applicable Code Requirements.
- h. Contractor persistently or materially fails to execute the Work in accordance with the Contract Documents.
- i. Contractor persistently or materially fails to comply with applicable safety requirements.
- j. Contractor abandons the Work.
- k. Contractor is in default of any other material obligation under the Contract Documents.

Upon the occurrence of any of the preceding events, City will have the right to terminate the Contract for cause if Contractor fails to promptly commence to cure such default and diligently prosecute such cure within 5 days after notice from City, or within such longer period as is reasonably necessary to complete such cure.

Upon any of the occurrences referred to above, City may, at its election and by notice to Contractor, terminate the Contract and take possession of the Project site and all materials, supplies, equipment, tools, and construction equipment and machinery thereon owned by Contractor; accept the assignment of any or all the subcontracts; and then complete the Work by any method City may deem expedient. If requested by City, Contractor shall remove any part or all of Contractor's materials, supplies, equipment, tools, and construction equipment and machinery from the Project site within 7 days of such request; and if Contractor fails to do so, City may remove or store, and after 90 days sell, any of the same at Contractor's expense.

If the Contract is terminated by City as provided in this Section, Contractor shall not be entitled to receive any further payment until the expiration of 35 days after Final Completion and acceptance of all Work by City.

If the unpaid balance of the Contract Sum exceeds the cost of completing the Work, including all additional costs and expenses made necessary thereby, including costs for City staff time, plus all losses sustained, including any liquidated damages provided under the Contract Documents and subject to provisions of this Contract that survive termination, such excess shall be paid to Contractor. If such costs, expenses, losses, and liquidated damages exceed the unpaid balance of the Contract Sum, Contractor shall pay such excess to City.

No termination or action taken by City after termination shall prejudice any other rights or remedies of City provided by law or by the Contract Documents upon such termination; and City may proceed against Contractor to recover all losses suffered by City.

6.7 Suspension By City For Convenience

City may, at any time and from time to time, without cause, order Contractor, in writing, to suspend, delay, or interrupt the Work in whole or in part for such period, up to 90 days, as City may determine, with such period of suspension to be computed from the date of delivery of the written order. Such order shall be specifically identified as a "Suspension Order" under this Section. The Work may be stopped for such further period as the parties may agree. Upon receipt of a Suspension Order, Contractor shall, at City's expense, comply with its terms and take all reasonable steps to minimize costs allocable to the Work covered by the Suspension Order during the period of Work stoppage. Within 90 days after the issuance of the Suspension Order, or such extension to that period as is agreed upon by Contractor and City, City shall either cancel the Suspension Order or delete the Work covered by such Suspension Order by issuing a Change Order.

If a Suspension Order is canceled or expires, Contractor shall continue with the Work. A Change Order will be issued to cover any adjustments of the Contract Sum or the Contract Time necessarily caused by such suspension. Any Claim by Contractor for an adjustment of the Contract Sum or the Contract Time shall be made within 21 days after the end of the Work suspension. Contractor agrees that submission of its claim within said 21 days is an express condition precedent to its right to recover on such a claim.

The provisions of this Section shall not apply if a Suspension Order is not issued by City. A Suspension Order shall not be required to stop the Work as permitted or required under any other provision of the Contract Documents.

6.8 Termination By City For Convenience

City may, at its option, terminate this Contract, in whole or from time to time in part, at any time by giving notice to Contractor. Upon such termination, Contractor agrees to waive any claims for damages, including loss of anticipated profits, on account thereof; and, as the sole right and remedy of Contractor, City shall pay Contractor in accordance with this Section.

Upon receipt of notice of termination under this Section, Contractor shall, unless the notice directs otherwise, do the following:

- a. Immediately discontinue the Work to the extent specified in the notice.
- b. Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of such portion of the Work as is not discontinued.
- c. Promptly cancel, on the most favorable terms reasonably possible, all orders and subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
- d. Thereafter do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment on the Project site or in transit thereto.

Upon such termination, the obligations of the Contract shall continue as to portions of the Work already performed and, subject to Contractor's obligations under this Section above, as to bona fide obligations assumed by Contractor prior to the date of termination.

Upon such termination, City shall pay to Contractor the sum of the following:

- a. The amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination, less sums previously paid to Contractor.
- b. Plus, previously unpaid costs of any items delivered to the Project site which were fabricated for subsequent incorporation in the Work.
- c. Plus, any proven losses with respect to materials and equipment directly resulting from such termination.
- d. Plus, reasonable demobilization costs.
- e. Plus, reasonable costs of preparing a statement of the aforesaid costs, expenses, and losses in connection with such termination. The above payment shall be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract by City pursuant to this Section; and Contractor will be entitled to no other compensation or damages and expressly waives same.

6.9 Temporary Suspension of Work

- 6.9.1 If the Contractor fails to correct defective work as required by Paragraph 00700-5.3, Defective and Unauthorized Work, or fails to carry out the Work in accordance with the Contract Documents or any other applicable rules and regulations, the City, by a written order of the City's representative or signed personally by an agent specifically so empowered by the City, in writing, may order the Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the City to stop the Work shall not give rise to any duty on the part of the City to exercise this right for the benefit of the Contractor or any other person or entity. All delays in the Work occasioned by such stoppage shall not relieve the Contractor of any duty to perform the Work or serve to extend the time for its completion. All necessary corrective work done to comply with the Contract Documents shall be performed at no cost to the City.
- 6.9.2 In the event that a suspension of Work is ordered, as provided in this paragraph, the Contractor, at its expense, shall perform all work necessary to provide a safe, smooth, and unobstructed passageway through construction for use by public, pedestrian, and vehicular traffic, during the period of such use by suspension. Should the Contractor fail to perform the Work as specified, the City may perform such work and the cost thereof may be deducted from monies due the Contractor under the Contract.
- 6.9.3 The City shall also have authority to suspend the Work wholly or in part, for such period as the City may deem necessary, due to unsuitable weather, or to such other conditions as are considered unfavorable for the suitable prosecution of the Work. Such temporary suspension of the Work will be considered justification for time extensions to the Contract in an amount equal to the period of such suspension if such suspended work includes the current critical activity on the latest favorably reviewed progress schedule. The Contractor as directed by the City shall provide the provisions as stipulated in Paragraph 00700-6.6.2 above. Such additional work shall be compensated as provided for in Paragraph 00700-7.0, Changes in The Work.

7.0 SCOPE OF WORK - CHANGES IN THE WORK

7.1 Changes

The City reserves the right to make such alterations, deviations, additions to, deletions or omissions from the plans and specifications, including the right to increase or decrease the quantity of any item or portion of the work, as may be deemed by the Engineer to be necessary or advisable and to require such extra work as may be determined by the Engineer to be required for the proper completion or construction of the whole work contemplated. Such changes, no matter how many, shall be within the contemplation of this Contract and shall not be the basis for a compensable delay or a claim for lost profits.

Any such changes will be set forth in a contract change order which will specify, in addition to the work to be done in connection with the change made, adjustment of contract time, if any, and the basis of compensation for such work. A contract change order will not become effective until approved by the authorized City official and/or the City Council.

For contracts approved by the City Council for initial prices under One Hundred Thousand Dollars (\$100,000), cumulative change orders which exceed the charter limit \$100,000 require City Council approval. For contracts with initial prices of One Hundred Thousand Dollars (\$100,000) or more, cumulative change orders which exceed the charter limit \$100,000 plus ten percent (10%) of the initial contract price over One Hundred Thousand Dollars (\$100,000) require City Council approval. Change orders not meeting the above criteria require approval by the authorized City official executing this Contract. The dollar amounts of change orders approved by specific City Council action, plus the dollar amounts of any change orders which predate such specific City Council action, shall not be counted in computing the authority limits set forth above for City officials to approve change orders hereunder.

In emergency situations, the authorized City official may issue a change order beyond the authority limits described above to:

- a. Prevent interruption of the work which would result in a substantial increase in the costs to, or liability of, City; or
- b. Protect the work, equipment, materials to be used in the work, human safety, or the environment at or near the work from substantial and immediate danger or injury; or
- c. Protect, where damage or injury has occurred, the work, equipment or materials to be used in the work, human safety, or the environment at or near the site of the work from further or additional damage or injury or deterioration.

The authorized City official shall have the authority to issue change orders in such sums as is reasonably necessary for such emergency purposes. After issuing a change order in an emergency described above, the authorized City official shall report such action and the reasons therefore to the City Council in writing not later than its next regularly scheduled meeting or as soon thereafter as is practicable.

Upon receipt of an approved contract change order, the Contractor shall proceed with the ordered work. If ordered in writing by the Engineer, the Contractor shall proceed with the work so ordered prior to actual receipt of an approved contract change order, therefore. In such cases, the Engineer will, as soon as practicable, issue an approved contract change order for such work and the provisions in Paragraph 7.1.1, Procedure and Protest, shall be fully applicable to such subsequently issued contract change order.

When the compensation for an item of work is subject to adjustment under the provisions of Paragraph 00700-7.1, Changes, the Contractor shall, upon request, promptly furnish the Engineer with adequate detailed cost data for such item of work.

- 7.1.1 Procedure and Protest - A contract change order approved by the Engineer may be issued to the Contractor at any time. Should the Contractor disagree with any terms or conditions set forth in an approved contract change order which he has not executed, he shall submit a written protest to the Engineer within 15 days after the receipt of such approved contract change order. The protest shall state the points of disagreement, and if possible, the contract specification references, quantities, and costs involved. If a written protest is not submitted, payment will be made as set forth in the approved contract change order and such payment shall constitute full compensation for all work included therein or required thereby. Such unprotested approved contract change orders will be considered as executed contract change orders as that term is used in Paragraphs 00700-7.1.2 to 7.1.4, inclusive.

Where the protest concerning an approved contract change order relates to compensation, the compensation payable for all work specified or required by said contract change order to which such protest relates will be determined as provided in Paragraphs 00700-7.1.2 to 7.1.4, inclusive. The Contractor shall keep full and complete records of the cost of such work and shall permit the Engineer to have such access thereto as may be necessary to assist in the determination of the compensation payable for such work.

Where the protest concerning an approved contract change order relates to the adjustment of contract time for the completion of the work, the time to be allowed therefore will be determined as provided in Paragraph 00700-6.5, Liquidated Damages.

Proposed contract change orders may be presented to the Contractor for his consideration prior to approval by the Engineer. If the Contractor signifies his acceptance of the terms and conditions of such proposed contract change order by executing such documents and if such change order is approved by the City Manager or City Council and issued to the Contractor, payment in accordance with the provisions as to compensation therein set forth shall constitute full compensation for all work included therein or required thereby. A contract change order executed by the City Manager or City Council is an executed contract change order as that term is used in Paragraph 00700-7.1.2 to 7.1.4, inclusive. An approved contract change order shall supersede a proposed, but unapproved, contract change order covering the same work.

- 7.1.2 Eliminated Items - The City reserves the right to eliminate any contract item of work prior to the award of the contract without incurring any obligation to pay, therefore. Should any contract item of the work be eliminated in its entirety following the award of the contract and in the absence of an executed contract change order covering such elimination, payment will be made to the Contractor for actual costs incurred in connection with such eliminated contract item if incurred prior to the date of notification in writing by the Engineer 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 Engineer, and if orders for such material cannot be canceled, it will be paid for at the actual cost to the Contractor. 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 Engineer so directs, the material shall be returned and the Contractor will be paid for the actual cost of charges made by the vendor for returning the material. The actual cost of handling returned material will be paid for.

The actual costs or charges to be paid by the City to the Contractor as provided in this Paragraph 00700-7.1.2 will be computed in the same manner as if the work were to be paid for on a force account basis as provided in Paragraph 01035-3.0.

- 7.1.3 Changes in Character of Work - If an ordered change in the plans or specification materially changes the character of the work of a contract item from that on which the Contractor based his bid price, and if the change increases or decrease the actual unit cost of such changed item as compared to the actual or estimated actual cost of performing the work of said item in accordance with the plans and specification originally applicable thereto, an adjustment in compensation therefore will be made by executed contract change order specifying the compensation payable, in accordance with the following:

The basis of such adjustment in compensation will be the difference between the actual unit cost to perform the work of said item or portion thereof involved in the change as originally planned and the actual unit cost of performing the work of said item or portion thereof involved in the change, as changed. Actual unit costs will be determined by the Engineer in the same manner as if the work were to be paid for on a force account basis as provided in Paragraph 01035-3.0; or such adjustment will be as agreed to by the Contractor and the Engineer. Any such adjustment will apply only to the portion of the work of said item changed in character. At the option of the Engineer, the work of said item or portion of item which is changed in character will be paid for by force account as provided in Paragraph 01035-3.0.

Failure of the Engineer to recognize a change in character of the work shall not be construed as relieving the Contractor of his duty and responsibility of filing a written notice in accordance with Paragraph 00700-7.5.2.1, Notice.

- 7.1.4 Extra Work - New, unforeseen work will be classed as extra work when determined by the Engineer that such work is not covered by any of the various items for which there is a bid price or by combinations of such items. In the event portions of such work are determined by the Engineer to be covered by some of the various items for which there is a bid price or combinations of such items, the remaining portion of such work will be classed as extra work. Extra work also includes work specifically designated as extra work in the plans and specifications.

The Contractor shall do such extra work and furnish labor, material, and equipment therefore upon receipt of an approved contract change order or written emergency order of the Engineer, and in the absence of such approved contract change order or written emergency order of the Engineer he shall not be entitled to payment of such extra work.

7.2 Change Orders

- 7.2.1 Without invalidating the Contract and without notice to sureties or insurers, the City through the Construction Manager, may at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by Field Directive, Field Order, or Change Order. A Change Order will not be issued for a Field Directive unless the Construction Manager concurs with an appeal by the Contractor that such Field Directive is a change in the scope of the Contract. The Contractor shall comply promptly with the requirements for all Change Orders, Field Orders, or Field Directives. The work involved in Change Orders shall be executed under the applicable conditions and requirements of the Contract Documents. If any Field Order causes an increase or decrease in the Contract Amount or an extension or shortening of the Contract Time, an equitable adjustment will be made by issuing a Change Order. If the Contractor accepts a Change Order that does not include a time extension, the Contractor waives any claim for additional time for the work covered by that Change Order. Additional or extra work performed by the Contractor without

written authorization of a Field Order or Change Order will not entitle the Contractor to an increase in the Contract Amount or an extension of the Contract Time. A reservation of rights, non-waiver of claims, or similar exceptions or reservations by the Contractor on a Change Order for additional time, money, or anything else shall not be permitted and are of no force or effect. It is the intent of the City to have all Change Orders issued comprehensively to address all issues known and unknown relating to time and/or costs.

- 7.2.2 Extra work shall be that work not shown or detailed on the Contract Drawings and not specified. Such work shall be governed by all applicable provisions of the Contract Documents. In giving instructions, the Construction Manager shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work; but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the City through the Construction Manager, and no claim for an addition to the total amount of the Contract shall be valid unless so ordered.
- 7.2.3 In case any change increases or decreases the work shown, the Contractor shall be paid for the work done at a mutually agreed upon adjustment to the Contract price, based upon the provisions of Section 01035 - Modification Procedures.
- 7.2.4 If the Contractor refuses to accept a Change Order, the City may issue it unilaterally. The Contractor shall comply with the requirements of the Change Order. The City shall provide for an equitable adjustment to the Contract and compensate the Contractor accordingly. If the Contractor does not agree that the adjustment is equitable, it may submit a claim in accordance with Paragraph 00700-7.5.2, Potential Claims/Change Orders.
- 7.2.5 Elimination Of Work - In accordance with Section 7.1.2 above, the City shall be allowed and authorized to eliminate portions of work from the Contract Work at its discretion, and in the best interests of the public, during action of the Project, and not only prior to award of contract. Said elimination of work shall not be determined to be a Termination for Convenience even if said elimination brings the Contract Work to a close. Upon elimination of work under this provision, the payment provisions of 7.1.2 shall apply.

7.3 Differing Site Conditions

Pursuant to Public Contract Code Section 7104, the Contractor shall promptly, and before such conditions are disturbed, notify the Construction Manager in writing, of any:

- a. 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.
- b. Subsurface or latent physical conditions at the site differing from those indicated.
- c. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The City shall promptly, investigate the conditions, and if it finds that the conditions do materially 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 the City shall cause to be issued a change order under the procedures provided in Paragraph 00700-7.2, Change Orders.

If 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 all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the contracting parties, Paragraph 00700-7.5, Resolution of Disputes.

No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required.

7.4 Value Engineering Change Proposals (VECP)

Refer to Section 01090, References, for the definition of a Value Engineering Change Proposal.

7.4.1 Applicability - The provisions of this Section shall apply only to Value Engineering Change Proposals (VECPs) resulting in net cost savings of Twenty Thousand dollars (\$20,000) or greater.

7.4.1.1 Future Changes - The Contractor is entitled to share in the net cost savings of the VECP to the full extent provided for in this Section and in the change order implementing the VECP. However, the net cost savings shall not continue to subsequent contract change orders nor other modifications of the contract which may change the service provided or increase the quantity of any item related to the VECP.

7.4.2 VECP Submittal - The Contractor must submit all VECPs to the Construction Manager after receipt of the Notice To Proceed and prior to surpassing forty percent (40%) of the contract time allowed in Section 01010-3.0, Time Allowed For Completion. The number of copies of the VECP submitted shall be in accordance with that designated for submittals in Section 01300, Submittals.

The Contractor shall include the following information for each VECP, in a form acceptable to the Construction Manager:

- a. Description of the differences between the existing design and the proposed design.
- b. Description of the advantages and disadvantages of the existing design and the proposed design.
- c. If the function of an item is altered, the justification for altering that function.
- d. The effect of the proposed modifications on the performance of the system or facility.
- e. Any test data regarding the proposed modification.
- f. A listing and analysis of all design criteria and specifications that must be changed if the VECP is accepted.
- g. A separate detailed estimate of the impact on the project costs, together with a copy of the Contractor's approved schedule of values or costs.
- h. A description and estimate of costs the City may incur to implement the VECP, including, but not limited to, design changes, inspection, testing, and evaluation costs.

- i. A prediction of any effects the VECP may have on life-cycle costs.
- j. The effect of the VECP on design and construction schedules.
- k. All preliminary engineering data necessary to support approval of the VECP.

7.4.3 Acceptance of VECP by City - The City shall have sole discretion to determine whether to accept a VECP. The City's decision shall be final.

A VECP will be rejected if it causes an increase to the contract amount.

Within thirty (30) days after receipt of a VECP by the Construction Manager, the Contractor shall be notified in writing that the VECP is acceptable, rejected or additional time is required for the Construction Manager's response.

If determined acceptable, the Construction Manager will initiate a contract change order to implement the VECP. A VECP which is acceptable shall be incorporated into the project only through a contract change order.

7.4.4 Contractor's Right to Withdraw VECP - The Contractor has the right to withdraw part or all of any VECP at any time prior to written acceptance by the City. Such withdrawal shall be made in writing. Each VECP submitted by the Contractor shall remain valid for a period of thirty (30) days from the date received, unless extended by the Construction Manager. If the Contractor desires to withdraw the VECP prior to its acceptance or rejection, the Contractor shall be liable for the costs incurred by the City in reviewing the VECP.

7.4.5 Change Order Content For Accepted VECP - The contract change order for an accepted VECP shall offer to the Contractor fifty percent (50%) of the net cost savings, as determined by the Construction Manager. The change order shall detail the cost savings of each contract item that is part of the final accepted VECP. The net cost savings shall be accomplished through progress payments for the various items of work listed in the contract change order. The Contractor's costs for development, design and/or implementation of the VECP are not eligible for reimbursement. The cost for review by the Construction Manager and all City design consultants will be added to the cost of the value engineering proposal prior to determining the reduction of cost.

7.4.6 Identical VECP - A VECP identical to a VECP submitted under any other contract, by the Contractor, or any other contractor, may also be submitted under this Contract, provided that the VECP originated with such contractor and not with the City, Design Consultant, or Construction Manager.

7.4.7 Restrictions - The Contractor may restrict the City's right to use any VECP data by marking it with the following statement:

This data, furnished pursuant to the Value Engineering Change Proposal Section of this Contract, shall not be duplicated, used or disclosed, in whole or in part, for any purpose except to evaluate the VECP, unless the VECP is accepted by the City. This restriction does not limit the City's right to use information contained in this data if it is or has been obtained or is otherwise available from the Contractor or from other sources, without limitations. When this VECP is accepted by the City, the City shall have the right to duplicate, use and disclose any data in any manner and for any purpose whatsoever, and have others do so whether under this or any other contract.

7.4.8 The City's acceptance, approval or use of the VECP shall not in any way reduce, limit or waive Contractor's responsibility under the Contract Documents, including, but not limited to, to perform

all work and services, including that called for by or because of the VECP, in a competent and workmanlike manner, and pursuant to the standards required by the Contract Documents.

- 7.4.9. The VECP must not impair any of the essential functions and characteristics of the Project, such as service life, reliability, economy of operation, ease of maintenance, safety and necessary standardized features.
- 7.4.10 In the event that the contractor and the City cannot reach agreement as to the reduction in contract price associated with the VECP, the VECP will be declared null and void and the original contract conditions will apply. The contractor will bear sole responsibility for the costs of review of the VECP in this case.

7.5 Contract Interpretation

- 7.5.1 Contract Interpretation by the Construction Manager - Questions regarding the meaning and intent of the Contract Documents shall be referred in writing by the Contractor to the Construction Manager. Where practical, the Construction Manager shall respond to the Contractor in writing with a decision within ten (10) days of receipt of the request.

At the City's discretion, the City may deduct from monies due the Contractor, time and expense costs incurred by the City, Construction Manager, and Design Consultant for reviewing and responding to unnecessary RFIs. This may include RFIs submitted to inquire about means, methods, or potential modifications for the Contractor's convenience.

7.5.2 Potential Claims/Change Orders

- 7.5.2.1 Notice – Inclusive of the provisions in paragraph 00700-7.7, Dispute Resolution, if the Contractor disagrees with the Construction Manager's decision in Paragraph 00700-7.5.1, Contract Interpretation by the Construction Manager, or in any case where the Contractor deems additional compensation or a time extension to the Contract period is due the Contractor for work or materials not covered in the Contract or which the Construction Manager has not recognized as extra work, the Contractor shall notify the Construction Manager, in writing, of its intention to make a claim or request a change order. Potential claims or change orders pertaining to decisions provided in Paragraph 00700-7.5.1 or such other determinations by the Construction Manager shall be filed in writing to the Construction Manager prior to Contractor performing the work giving rise to the potential claim or change order, if based on an act or failure to act by the City, or in all other cases, within five (5) days after the event or occurrence giving rise to the potential claim or change order. Written notice shall use the words "Notice of Potential Claim/Change Order." Such Notice of Potential Claim/Change Order shall state the circumstances and the reasons for the claim but need not state the amount.

Additionally, no claim for additional compensation or extension of time for a delay will be considered unless the provisions of Paragraphs 00700-6.3, Delays, 6.4, Time Extensions, 7.7, Dispute Resolution, are complied with. No claim filed after the date of final payment will be considered.

It is agreed that unless notice as required by the Contract Documents is properly given, the Contractor shall have waived all rights to recover, and shall not recover, costs incurred by it because of the alleged extra work, changed work or other situation which had proper notice been given would have given rise to a right for additional compensation. The Contractor should understand that timely notice of potential claims and change orders is of great importance to the Construction Manager and City and is not merely a formality. Such notice allows the City to consider preventative action, to monitor the Contractor's increased costs resulting from the situation, to marshal facts, and to plan its affairs. Such notice by the Contractor, and the fact that

the Construction Manager has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

- 7.5.2.2 Records of Disputed Work - In proceeding with a disputed portion of the Work, the Contractor shall keep accurate records of its costs and shall make available each day, to the Construction Manager or his designated representative, a daily summary of the hours and classification of equipment and labor utilized on the disputed work, as well as a summary of any materials or any specialized services used. Such information shall be submitted to the Construction Manager on a weekly basis, receipt of which shall not be construed as an authorization for or acceptance of the disputed work.

It is the intent of this Section that these records be provided such that the Construction Manager and Contractor can determine and agree upon the Contractor's daily effort expended on the disputed work and determine accurate costs for the disputed work. Such determination shall not be construed as authorization for or acceptance of the disputed work.

- 7.5.2.3 Meetings - From time to time the Construction Manager may call a special meeting to discuss outstanding claims and potential change orders should it deem this of possible help. The Contractor shall cooperate and attend prepared to discuss its claims, making available the personnel necessary for resolution, and all documents which may reasonably be requested by the Construction Manager.

- 7.5.3 Claims - The term "Claim" means a written demand or assertion by Contractor seeking an adjustment or interpretation of the terms of the Contract Documents, payment of money, extension of time, or other relief with respect to the Contract Documents, including a determination of disputes or matters in question between City and Contractor arising out of or related to the Contract Documents or the performance of the Work. The term "Claim" shall not include, and the Claims procedures provided under this Section, including but not limited to arbitration, shall not apply to the following:

- a. Claims respecting penalties for forfeitures prescribed by statute or regulation that a government agency is specifically authorized to administer, settle, or determine.
- b. Claims respecting personal injury, death, reimbursement, or other compensation arising out of or resulting from liability for personal injury or death.
- c. Claims respecting stop notices.

Inclusive of the provisions in paragraph 00700-7.7, Claim must include the following:

- a. A statement that it is a Claim and a request for a decision.
- b. A detailed factual narrative of events fully describing the nature and circumstances giving rise to the Claim, including but not limited to, necessary dates, locations, and items of work affected.
- c. A certification, executed by Contractor, that the claim is filed in good faith. The certification language is identified below. The language of the Claim Certification form may not be modified.
- d. A certification, executed by each subcontractor claiming not less than 5% of the total monetary amount sought by the claim, that the subcontractor's portion of the claim is filed in good faith. The certification language is identified below. The language of the Claim Certification form may not be modified.
- e. A statement demonstrating that a Change Order Request was timely submitted as required by Section 7 of the General Conditions and Section 01035.

- f. If a Cost Proposal or declaration was required by Section 7 of the General Conditions and Section 01035, a statement demonstrating that the Cost Proposal or the declaration was timely submitted as required by Section 7 of the General Conditions.
- g. A detailed justification for any remedy or relief sought by the Claim, including to the extent applicable, the following:

If the Claim involves Extra Work, a detailed cost breakdown of the amounts claimed, including the items specified in Section 7 of the General Conditions and Section 01035. The cost breakdown must be provided even if the costs claimed have not been incurred when the Claim is submitted. To the extent costs have been incurred when the Claim is submitted, the Claim must include actual cost records (including without limitation, payroll records, material and rental invoices and the like) demonstrating that costs claimed have been incurred. To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records must be submitted on a current basis not less than once a week during any periods costs are incurred. A cost record will be considered current if submitted within 7 days of the date the cost reflected in the record is incurred. At the request of the Construction Manager or City's Representative, claimed extra costs may be subject to further verification procedures (such as having an inspector verify the performance of alleged Extra Work daily). The cost breakdown must include an itemization of costs for i) labor including names, classifications, regular hours and overtime hours worked, dates worked, and other pertinent information; ii) materials stored or incorporated in the work including invoices, purchase orders, location of materials either stored or incorporated into the work, dates materials were transported to the project or incorporated into the work, and other pertinent information; and iii) itemization of machinery and equipment including make, model, serial number, hours of use, dates of use and equipment rental rates of any rented equipment.

If the Claim involves an extension of the Contract Time, written documentation demonstrating the Contractor's entitlement to a time extension under Section 6 of the General Conditions and Section 01310, including the specific dates for which a time extension is sought and the specific reasons for entitlement of a time extension. The Contract Schedule must demonstrate Contractor's entitlement to an adjustment of Contract Time under Section 6 of the General Conditions and Section 01310.

If the Claim involves an adjustment of the Contract Sum for delay, written documentation demonstrating the Contractor's entitlement to such an adjustment under Section 6 of the General Conditions and Section 01310, including but not limited to, a detailed time impact analysis of the Contract Schedule. The Contract Schedule must demonstrate Contractor's entitlement to such an adjustment under Section 6 of the General Conditions and Section 01310.

For each claim submitted or filed by Contractor, including, but not limited to, any claim on behalf of Contractor and/or any claim by or on behalf of any subcontractor or supplier, of any tier, Contractor shall include the following certification, signed in the same manner as the Contract was signed:

I, being the (must be an officer) of (general contractor or subcontractor), declare under penalty of perjury under the laws of the State of California, and do personally certify and attest that: I have thoroughly reviewed the attached claim for additional compensation and/or extension of time, and know its contents and said claim is made in good faith; the supporting data is truthful and accurate; that the amount requested accurately reflects the Contract adjustment for which the Contractor believes the City is liable; and, further, that I am familiar with California Penal Code Section 72 and California Government Code Section 12650, et. seq., pertaining to false claims, and further know and understand that submission or certification of a false claims may lead to fines, imprisonment and/or severe legal consequences."

7.6. Assertion of Claims

Claims by Contractor shall first be submitted to the Construction Manager for decision.

Notwithstanding the making of any Claim or the existence of any dispute regarding any Claim, unless otherwise directed by Construction Manager, Contractor shall not cause any delay, cessation, or termination in or of Contractor's performance of the Work but shall diligently proceed with performance of the Work in accordance with the Contract Documents.

Contractor shall submit a Claim in writing, together with all supporting data specified in Section 7.5 above, to Construction Manager as soon as possible but not later than 30 days after the date the Claim arises under Sections 6 and 7 of the General and Supplemental Conditions.

7.7 Dispute Resolution

All claims by Contractor for a time extension, payment of money or damages arising from work done by, or on behalf of, Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or as to the amount of payment which is disputed by the City of Three Hundred Seventy-Five Thousand Dollars (\$375,000) or less shall be subject to the provisions set forth in Public Contract Code Section 20104, et. seq. Those sections require that the claim be in writing, include the documents necessary to substantiate the claim, and be filed on or before the final date of payment, subject to all time limits and notice requirements for filing claims under the Contract.

Arbitration

Claims Subject to Public Contract Code Section 9204, Procedure

Application. This Section applies solely to the handling and resolution of a claim(s) sent to the City by registered mail or certified mail with return receipt requested in accordance with Public Contract Code Section 9204(c)(1). With respect to such claim(s), the provisions of Public Contract Code Section 9204 shall apply and are hereby incorporated by reference into these documents and set forth in full at the end of this Section.

Mediation Procedures. Mediation conducted pursuant to Public Contract Code Section 9204 shall be in accordance with the following procedures:

- Request for Mediation: A request for mediation must be in writing and set forth a brief statement that identifies the claim(s), the asserted damages, the names, addresses, and contact information of the parties, and identify their authorized representative, if any, that will participate in the mediation. Contractor hereby expressly waives all claims not timely submitted to mediation in accordance with this Section.
- Selection of Mediator: The parties agree that any neutral selected or appointed to preside over the mediation shall be an attorney admitted practicing law in the State of California or a retired judge, and he or she shall possess at least 10 years' experience practicing law in the substantive areas of public contracting, public construction contracts and construction litigation.
- Time and Place of Mediation: The mediator, using advice and input from the parties, shall set the time of each mediation session, as well as the mediation protocol (*i.e.*, submission of briefs, statement of damages, etc.). The mediation will be held at any convenient location agreeable to the mediator and the parties, as the mediator determines. All

reasonable efforts will be made by the parties and the mediator to schedule the first session within thirty (30) calendar days after selection of the mediator.

- The mediation may be terminated: (a) by the execution of a settlement agreement by the parties; (b) by a written declaration of the mediator to the effect that further efforts at mediation are no longer worthwhile; or (c) by a writing on behalf of a party or parties to the effect that the mediation proceedings are terminated.
- All meetings, communications and correspondence relative to the mediation procedures set forth in this Section shall be subject to any applicable mediation or settlement-related privilege afforded under California law, including, without limitation, California Evidence Code §§1115, *et seq.* and 1152.
- If, at the termination of the mediation proceedings pursuant to this Section, the claim(s), or any portion thereof, remain(s) in dispute, and as a condition precedent to the commencement by Contractor of any litigation or arbitration, the provisions of California law applicable to the presentation of claims and prosecution of disputes by the Contractor shall apply to claims asserted by the Contractor, including, without limitation, Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. Contractor shall be responsible to fully satisfy and comply with all such requirements as may be applicable to any claim(s) presented by Contractor, and nothing in this Section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with §900) and Chapter 2 (commencing with §910) of Part 3 of Division 3.6 of Title 1 of the Government Code. Contractor expressly waives the removal provisions of California Code of Civil Procedure Section 394.
- In the event of any dispute between the City and Contractor, or during the pendency of any claim(s) or associated proceedings under this Section, Contractor shall not stop, or delay performance of, the Work, but shall prosecute the Work diligently to completion in the manner directed by the Engineer.

Other Claims. The procedures and remedies provided herein do not apply to: (1) any claim(s) made by or on behalf of the City, unless the City consents to the application of these procedures and remedies; (2) any claim or dispute relating to stop payment notices; (3) any claim related to the approval, refusal to approve, or substitution of subcontractors, regardless of tier, and suppliers.

Public Contract Code - §9204 - Legislative findings and declarations regarding timely and complete payment of contractors for public works projects; claims process:

- (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 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 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 meeting and 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 about 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 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 about 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 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.

8.0 PAYMENT

8.1 Scope of Payment

- 8.1.1 General - The Contractor shall accept the compensation, as herein provided, as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary for completing the Work according to the Contract Documents, and no additional compensation will be allowed, therefore. Neither the payment of any partial payment estimates nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.
- 8.1.2 Payment for Patents and Patent Infringement - All fees or claims for any patented invention, article, or arrangement that may be used upon, or in any manner connected with, the performance of the work or any part thereof shall be included in the price bid for doing the work, and the Contractor and its sureties shall defend, protect, and hold the City, the Construction Manager, and Design Consultants, together with all their officers, agents, and employees harmless against liability of any nature or kind for any and all costs, legal expenses, and damages made for such fees or claims and against any and all suits and claims brought or made by the holder of any invention or patent, or on account of any patented or unpatented invention, process, article, or appliance manufactured for or used in the performance of the Contract, including its use by the City, unless otherwise specifically stipulated in the Contract. Before final payment is made on the Contract, the Contractor shall furnish an affidavit to the City regarding patent rights for the project. The affidavit shall state that all fees and payments due because of the work incorporated into the project or methods utilized during construction have been paid in full. The Contractor shall certify in the affidavit that no other fees or claims exist for work in this project.
- 8.1.3 Payment of Taxes - The Contractor shall pay and shall assume exclusive liability for all taxes levied or assessed on or in connection with the Contractor's performance of this Contract, including, but not limited to, State and local sales and use taxes, Federal and State payroll taxes or assessments, and excise taxes, and no separate allowance will be made therefore, and all costs in connection therewith shall be included in the total amount of the Contract price.
- 8.1.4 Payment for Labor and Materials - The Contractor shall pay and require its subcontractors to pay all accounts for labor including worker's compensation premiums, state unemployment and federal social security payments and other wage and salary deductions required by law. The Contractor also shall pay and cause its subcontractors to pay all accounts for services, equipment, and materials used by the Contractor and its subcontractors during the performance of work under this Contract. Such accounts shall be paid as they become due and payable. If requested by the City, the Contractor shall furnish proof of payment of such accounts to the City.

8.2 Partial Payments

In consideration of the faithful performance of the work carried out in accordance with the provisions of these Specifications and the Contract, the City will pay the Contractor for all such work installed based on percentage completion. Amounts earned will be based on accepted Cost Breakdown (Section 01025, Measurement and Payment).

Payments will be made by the City to the Contractor on estimates duly certified and approved by the Construction Manager, based on the value of equipment installed and tested, labor and materials incorporated into said permanent work by the Contractor during the preceding month, and acceptable materials and equipment on hand (materials and equipment furnished and delivered to the site by the Contractor and not yet incorporated into the work accompanied by an

approved invoice). Payments will not be made for temporary construction or material submittals unless specifically provided for in the Contract Documents.

Partial payments will be made monthly based on work accomplished as of a day mutually agreed between the City and the Contractor. Prior to submitting its payment estimate, the Contractor shall meet with the Construction Manager to reach agreement on the percent completion and materials on hand for that payment period.

The Contractor shall submit its estimate of the work completed during the prior month and the work completed to date in a format acceptable to the Construction Manager and corresponding to the accepted cost breakdown. Additionally, the Contractor shall submit a detailed statement of the Contractor's request for payment of acceptable materials and equipment on hand in compliance with Paragraph 00700-8.3, Partial Payments - Inclusion of Materials on Hand. Upon receipt of Contractor's requests for payment, the City shall act in accordance with the following:

- a. The Construction Manager shall review the submitted estimates, as soon as practical after receipt, for the purpose of determining that the estimates are a proper request for payment and shall prepare a certified estimate of the total amount of work done and acceptable materials and equipment on hand.
- b. Any request for payment determined not to be a proper payment request suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days after receipt. A request for payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the request for payment is not proper.
- c. The number of days available to the City to make a payment without incurring interest pursuant to this Section shall be reduced by the number of days by which the City exceeds the seven (7) day return requirement set forth in subdivision (b) above.

Payment will be made by the City to the Contractor in accordance with City's normal accounts payable procedures; the City shall retain amounts in accordance with Paragraph 00700-8.4, Right to Withhold Amounts.

No such estimate or payment shall be required to be made, when in the judgment of the Construction Manager, the Work is not proceeding in accordance with the provisions of the Contract, or when in the Construction Manager's judgment, the total value of the Work done since the last estimate amounts to less than One Thousand Dollars (\$1,000.00). Additionally, no payments shall be made until the Construction Manager has received an acceptable monthly schedule update covering the latest required period, certified payrolls and other required pay records, and a conditional waiver and release upon progress payment from Contractor for the current pay period and an unconditional waiver and release upon progress payment for the prior progress payment period. The City reserves the right to require, as a condition precedent to payment, that Contractor provide conditional and unconditional waivers and releases from Contractor's subcontractors and suppliers.

Subject to the provisions of this Section, the City shall pay the Contractor within thirty (30) days after receipt of undisputed and properly submitted requests for payment from the Contractor. In accordance with Public Contract Code, if the City fails to pay an undisputed request for payment within the allotted thirty (30) days, the City shall pay interest to the Contractor equivalent to the legal rate set forth in the Code of Civil Procedure.

8.3 Partial Payments - Inclusion of Materials on Hand

Materials, as used herein, shall be those items which are fabricated and manufactured goods and equipment. Only those materials for which the Contractor can transfer clear title to the City will be qualified for partial payment. The Contractor may request payment of seventy-five (75) percent of the actual net cost of these materials.

To receive partial payment for materials and equipment delivered to the Site, but not incorporated in the Work, it shall be necessary for the Contractor to submit to the Construction Manager a list of such materials, at least seven (7) days prior to submitting the monthly estimate of amount earned for work completed. At the Construction Manager's sole discretion, the Construction Manager will approve items for which partial payment is to be made subject to the following:

- a. Only equipment or materials which have received favorable review of shop drawings will qualify.
- b. Eligible equipment or materials must be delivered and properly stored, protected, and maintained in a manner favorably reviewed by the Construction Manager, at the job site or at a bonded warehouse.
- c. The Contractor's actual net cost for the materials must be supported by paid invoices of suppliers, or other documentation requested by the Construction Manager.
- d. Materials or equipment delivered to the Site less than thirty (30) days prior to their scheduled incorporation in the Work shall not qualify.
- e. Final payment shall be made only for materials incorporated in the Work. Upon acceptance of the Work, all materials remaining for which advance payments have been made shall return to the Contractor, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the Work.
- f. Partial payments for materials and equipment on hand shall not be deemed to be final payment for the material nor relieve the Contractor of its obligations under the Contract.
- g. Partial payments for materials and equipment on hand shall be subject to retention in accordance with Paragraph 00700-8.4., Right to Withhold Amounts.

8.4 Right to Withhold Amounts

- 8.4.1 Retention - The City will deduct from each partial payment and retain as part security, five (5) percent of the amount earned until the final payment.

Pursuant to Public Contract Code, for monies earned by the Contractor and withheld by the City to ensure the performance of the Contract, the Contractor, may, at his or her option, choose to substitute securities meeting the requirements of said Code. In the event the Contractor wishes to choose this option, the Contractor shall enter into an escrow agreement with the City, and the escrow agent, a qualified bank to be chosen by City, in the form of the agreement included in the project specifications. The costs of such escrow shall be paid by the Contractor. The securities to be deposited in said escrow account shall be equivalent, in fair market value, to the amount to be withheld as performance retention. The securities shall be held in accordance with the provisions of the Public Contract Code, and the implementing agreement.

Contractor shall have the obligation of ensuring that such securities deposited are sufficient to maintain, in total fair market value, an amount equal to the cash amount of the sums to be withheld under the Contract. If, upon written notice from the City, or from the appropriate escrow agent, indicating that the fair market value of the securities has dropped below the dollar amount of monies to be withheld by the City to ensure performance, Contractor shall, within five days of the date of such notice, post additional securities as necessary to ensure that the total fair market value of all such securities held by the City, or in escrow, is equivalent to the amount of money to be withheld by the City under the Contract.

Any Contractor wishing to exercise this option shall give notice in writing to City, and shall thereafter execute an escrow agreement in the following form:

ESCROW AGREEMENT FOR
SECURITY DEPOSITS IN LIEU OF RETENTION

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

whose address is _____

hereinafter called "City", and _____

whose address is _____

hereinafter called "Contractor", and _____

whose address is _____

hereinafter called "Escrow Agent."

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

1. Pursuant to the Public Contract Code of the State of California, Contractor has the option to deposit securities which meet the requirements set forth in said Code, with Escrow Agent, as a substitute for retention earnings required to be withheld by City pursuant to the Construction Contract entered into between City and Contractor for _____ in the amount of dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the City shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the City within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the City and Contractor. Securities shall be held in the name of City and shall designate the Contractor as the beneficial owner.
2. City shall make progress payments to Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.
3. When the City makes payment of retention earned directly to the Escrow Agent the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this Contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the City pays the Escrow Agent directly.
4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of the City. These expenses and payment terms shall be determined by the City, Contractor, and Escrow Agent.
5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the City.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from City to the

Escrow Agent that City consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. The City shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the City of default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the City.
8. Upon receipt of written notification from the City certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.
9. Escrow Agent shall rely on the written notifications from the City and the Contractor pursuant to Sections (4) to (6), inclusive, of this Agreement, and City and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.
10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the City and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On Behalf of City:

On Behalf of Contractor:

Title

Title

Name

Name

Signature

Signature

Address

Address

On Behalf of Escrow Agent:

Title

Name

Signature

Address

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

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

CITY:

CONTRACTOR:

Title

Title

Name

Name

Signature

Signature

8.4.2 Other Withholds - In addition to the amount which the City may otherwise retain under the Contract, the City may withhold enough or amounts of any payment or payments otherwise due the Contractor, as in its judgment may be necessary to cover:

- a. Payments which may be past due and payable for just claims against the Contractor or any subcontractor for labor or materials furnished for the performance of this Contract.
- b. Defective work not remedied.
- c. Failure of the Contractor to make proper payments to its subcontractors or suppliers.
- d. A reasonable doubt that the Contract can be completed for the balance then unpaid.
- e. Damage to another Contractor or third party, or to property.
- f. Failure of the Contractor to keep its work progressing in accordance with its progress schedule or maintaining current "As-Built" record drawings.
- g. The City's costs for the Contractor's failure to complete within the allowed time.
- h. Cost of insurance arranged by the City due to cancellation or reduction of the Contractor's insurance.
- i. Failure of the Contractor to make proper submissions, as specified herein.
- j. Failure to submit, revise, resubmit, or otherwise conform to the requirements herein for preparing and maintaining a construction schedule.
- k. Payments due to the City from the Contractor.
- l. Reduction of Contract Amount because of modifications.
- m. The Contractor's neglect or unsatisfactory prosecution of the work including failure to clean up.
- n. Provisions of law that enable or require the City to withhold such payments in whole or in part.

When the above reasons for withholding amounts are removed, payment may be made to the Contractor for amounts withheld.

The City in its discretion may apply any withheld amount or amounts to the payment of valid claims. In so doing, the City shall be deemed the agent of the Contractor, and any payment so made by the City shall be considered as a payment made under the Contract by the City to the Contractor, and the City shall not be liable to the Contractor for such payment made in good faith. Such payments may be made without prior judicial determination of the claim or claims. The City will render to the Contractor a proper accounting of such funds disbursed in behalf of the Contractor.

8.5 Substantial Completion

When the Contractor considers that the Work is substantially complete, the Contractor shall notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager, the City and/or their authorized representatives will make inspection, to determine if the Work is sufficiently complete in accordance with the Contract Documents so the City can occupy or utilize the Work for its intended use. If items are found which prevent such use or occupancy, the Construction Manager shall notify the Contractor in writing of such items.

Upon the completion of such corrective work, the Contractor shall notify the Construction Manager in writing. The Construction Manager shall inspect the Work to determine its acceptability for Substantial Completion and for determination of other items which do not meet the terms of the Contract. Upon verification that the project is substantially complete the Construction Manager shall prepare a Certificate of Substantial Completion. The Certificate shall establish the date of Substantial Completion and the responsibilities of the City and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, commencement of warranties required by the Contract Documents, and shall fix the time, not to exceed 60 days, within which the Contractor shall finish all items on the punch list accompanying the Certificate. When the preceding provisions have been approved by both the City and the Contractor, they shall sign the Certificate to acknowledge their written acceptance of the responsibilities assigned to them in such Certificate. By such acknowledgement, the Contractor agrees to pay the City's actual costs including, but not limited to, charges for engineering, inspection and administration incurred due to the failure to complete the punch list within the time provided in the Certificate of Substantial Completion.

City shall have the right to exclude Contractor from the Site after the date of Substantial Completion, but City will allow Contractor reasonable access to complete the Work or correct items on any deficiency list or punch lists at times and in areas designated by the City in its sole discretion and without additional compensation to Contractor.

8.6 Final Inspection and Payment

Upon completion of the Work, and upon completion of final cleaning, the Contractor shall so notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager, the City and/or their authorized representatives will conduct the final inspection, to determine the actual status of the Work in accordance with the terms of the Contract. If materials, equipment, or workmanship are found which do not meet the terms of the Contract, the Construction Manager shall prepare a punch list of such items and submit it to the Contractor. Following completion of the corrective work by the Contractor, the Construction Manager shall notify the City that the Work has been completed in accordance with the Contract. Final determination of the acceptability of the Work shall be made by the City. After completion of the work, but prior to its acceptance by the City, the last partial payment will be made to the Contractor in accordance with Paragraph 00700-8.2, Partial Payments.

After receipt of the last partial payment, but prior to acceptance of the Work by the City, the Contractor shall send a letter to the Construction Manager. The letter shall state that acceptance of the final payment described below shall operate as and shall be, a release to the City, the Construction Manager, the Design Consultant, and their duly authorized agents, from all claims of and/or liability to the Contract arising by virtue of the Contract related to those amounts. Disputed Contract claims in stated amounts previously filed, as provided in Paragraph 00700-7.5, may be specifically excluded by the Contractor from the operation of the release.

Neither final payment nor any retention shall become due until Contractor submits the following items to Construction Manager:

- a. The final Application For Payment and all submittals required in accordance with the General Conditions.
- b. All guarantees and warranties procured by Contractor from subcontractors, all operation and maintenance manuals for equipment installed in the Project, as-built documents, and all other submittals required by the Contract Documents.
- c. Unconditional waivers and releases upon final payment from all subcontractors and suppliers and a conditional waiver and release upon final payment from Contractor.
- d. Certified payroll records and all other pay records as determined by the City.

Following receipt of all required submittals and the Construction Manager's written statement that construction is complete and recommendation that the City accept the project, the City will take formal action on acceptance.

Within ten (10) days of the acceptance by the City of the completed work embraced in the Contract, the City will cause to be recorded in the office of the County Recorder a Notice of Completion.

Thirty-five (35) days after recording the Notice of Completion of the work involved in the Contract, the City will pay the Contractor in lawful money such sums of money as may be due the Contractor including all sums retained but excluding such sums as have previously been paid the Contractor. This payment will constitute the final payment to the Contractor under this Contract.

8.7 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 the Contractor, 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.

9.0 EXISTING UTILITIES

9.1 General

Pursuant to Government Code Section 4216, et. seq., the Contractor shall notify the appropriate notification center, U.S.A., 1-800-642-2444.

9.2 Notification and Location

At least three (3) working days before performing any excavation work, the Contractor shall request the utility owners to mark or otherwise indicate the location of their service.

It shall be the Contractor's responsibility to determine the exact location and depth of all utilities, including service connections, which have been marked by the respective owners and which the Contractor believes may affect or be affected by the Contractor's operations. If no pay item is provided in the Contract for this work, full compensation for such work shall be considered as included in the prices bid for other items of work.

9.3 Damage and Protection

The Contractor shall immediately notify the Construction Manager and utility owner of any damage to a utility.

For work within a public right of way or utility easement, the party responsible for the cost of repairing and/or relocating damaged utilities shall be as follows:

Description	Responsible Party
a. Utility mains delineated incorrectly on City's plans	City/Utility Company
b. Utility mains delineated correctly on City's plans but information provided incorrectly by utility company	Utility Company
c. Utility mains not shown on City's plan	Utility Company
d. Utility mains incorrectly marked in the field by utility company	Utility Company
e. Utility mains incorrectly marked and/or delineated on City's plans	Contractor
f. Utility service laterals whether indicated or not indicated on plans and whether correctly or incorrectly shown on City's plans	Contractor

9.4 Utility Relocation and Rearrangement

The right is reserved to the City and the owners of utilities or their authorized agents to enter upon the Work area for the purpose of making such changes as are necessary for the rearrangement of their facilities or for making necessary connections or repairs to their properties. The Contractor shall cooperate with forces engaged in such work and shall conduct its operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by such forces and shall allow the respective utilities time to relocate their facility.

The Contractor assumes responsibility for the removal, relocation, or protection of existing facilities wherein said facilities are identified by the Plans, field located by a utility company, or as provided for in the General Requirements. The Contractor shall coordinate with the owner of utility facilities for the rearrangement of said facilities.

If underground utilities are found that are not shown in the Contract Documents or are found to exist in a different location than shown in the Contract Documents, the Contractor shall: (1) notify the Construction Manager of the existence of said facilities immediately; and (2) take steps to ascertain the exact location of all underground facilities prior to doing work that may damage such facilities.

Requests for extensions of time arising out of utility rearrangement delays shall be made by Construction Manager. In accordance with Government Code Section 4215 the Contractor shall not be assessed liquidated damages for delay in completion of the project, when such delay is caused by the failure of the City or utility company to provide for the removal or relocation of facilities for which they are the responsible party as defined in Paragraph 00700-9.3, Damage and Protection.

Where it is determined by the Construction Manager that the rearrangement of an underground main, the existence of which is not shown on the Plans, Specifications, or in the General Requirements, is essential to accommodate the contemplated improvement, the Construction Manager will provide for the rearrangement of such facility by other forces or by the Contractor in accordance with the provisions of Paragraph 00700-7.2, Change Orders.

When the General Requirements, Specifications, or Plans indicate that a utility is to be relocated, altered or constructed by others, the City will conduct all negotiations with the utility company and the work will be done at no cost to the Contractor.

Temporary or permanent relocation or alteration of utilities desired by the Contractor for its own convenience shall be the Contractor's responsibility and it shall decide and bear all costs.

10.0 APPLICABLE LAW/CODE REQUIREMENTS

Contractor shall perform the Work in accordance with the following Applicable Law/Code Requirements and all code requirements listed in the Scope of Work:

- a. All laws, statutes, the most recent building codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over City, Contractor, any subcontractor, the Project, the Project site, the Work, or the prosecution of the Work, including, but not limited to:
 - (1) any federal, state or local law, code, regulation or consent order or agreement having the force of law.
 - (2) any formally adopted and generally applicable rule, requirement, determination, standard, policy, implementation schedule or order of any governmental or regulatory agency having appropriate jurisdiction.
 - (3) any established interpretation of law or regulation utilized by an appropriate governmental or regulatory agency if such interpretation is documented by such governmental or regulatory agency and generally applicable; and,
 - (4) any governmental or regulatory agency approval, in each case applicable from time to time to the siting, permitting, design, acquisition, construction, equipping, financing, ownership, possession, start-up, testing, operation, maintenance, repair, replacement or management of the Facilities
- b. Applicable Sections in the State of California Labor Code.

- c. All Applicable Code Requirements relating to nondiscrimination, payment of prevailing wages, payroll records, apprentices, and workday.

Contractor shall comply with and give notices required by all Applicable Code Requirements, including all environmental laws and all notice requirements under the State of California Safe Drinking Water and Enforcement Act of 1986 (State of California Health and Safety Code Section 25249.5, and applicable sections that follow). Contractor shall promptly notify City's Representative in writing if Contractor becomes aware during the performance of the Work that the Contract Documents are at variance with Applicable Code Requirements.

If Contractor performs Work which it knows or should know is contrary to Applicable Code Requirements, without prior notice to City and City's Representative, Contractor shall be responsible for such Work and any resulting damages including, without limitation, the costs of correcting Defective Work.

The Applicable Code Requirements under this Section shall be those in existence at the time the Contract is approved by the City Council. Any significant change in the Applicable Code Requirements that occurs after approval of the Contract by the City Council, and that significantly changes the scope or cost of work in the respective stages, shall be addressed through the change order and modifications procedures established in the Contract Documents.

11.0 USE OF SITE AND CLEAN UP

Contractor shall confine operations at the Project site to areas permitted by law, ordinances, permits, and the Contract Documents. Contractor shall not unreasonably encumber the Project site with materials or equipment.

Contractor shall, during performance of the Work, keep the Project site and surrounding area free from the accumulation of excess dirt, waste materials, and rubbish caused by Contractor. Contractor shall remove all excess dirt, waste material, and rubbish caused by the Contractor; tools; equipment; machinery; and surplus materials from the Project site and surrounding area at the completion of the Work.

Personnel of Contractor and subcontractors shall not occupy, live upon, or otherwise make use of the Project site during any time that Work is not being performed at the Project site, except as otherwise provided in the Contract Documents.

Contractor shall conduct and cause all working forces at the site to maintain the site in a neat orderly manner throughout the construction operations. The work shall be conducted in a manner that will control the dust. When ordered to provide dust control, the Contractor shall use water or turn soil to reduce the dusty conditions, all to the satisfaction of the City's Representative and in accordance with Section 10 of the City of Stockton Standard Specifications. During construction, Contractor shall remove all rubbish and debris as it is generated to the satisfaction of the Engineer.

12.0 CORRECTION OF DEFECTIVE WORK AND GUARANTEE TO REPAIR PERIOD

The term "Guarantee To Repair Period" means a period of 1 year from Final Completion unless a longer period is specified.

Contractor shall (1) correct Defective Work that becomes apparent during the progress of the Work or during the Guarantee To Repair Period, and (2) replace, repair, or restore to City's satisfaction any other parts of the Work and any other real or personal property which is damaged or destroyed

because of Defective Work or the correction of Defective Work. Contractor shall promptly commence such correction, replacement, repair, or restoration upon notice from City's Representative or City, but in no case later than 10 days after receipt of such notice; and Contractor shall diligently and continuously prosecute such correction to completion. Contractor shall bear all costs of such correction, replacement, repair, or restoration, and all losses resulting from such Defective Work, including additional testing, inspection, and compensation for City's Representative's services and expenses. Contractor shall perform corrective Work at such times that are acceptable to City and in such a manner as to avoid, to the extent practicable, disruption to City's activities.

If immediate correction of Defective Work is required for life safety or the protection of property and is performed by City or Separate Contractors, Contractor shall pay to City all reasonable costs of correcting such Defective Work. Contractor shall replace, repair, or restore to City's satisfaction any other parts of the Construction Work and any other real or personal property which is damaged or destroyed because of such Defective Work or the correction of such Defective Work.

Contractor shall remove from the Project site portions of the Construction Work and materials which are not in accordance with the Contract Documents and which are neither corrected by Contractor nor accepted by City.

If Contractor fails to commence correction of Defective Work within 10 days after notice from City or City's Representative or fails to diligently prosecute such correction to completion, City may correct the Defective Work; and, in addition, City may remove the Defective Work and store salvageable materials and equipment at Contractor's expense.

If Contractor fails to pay the costs of such removal and storage as required by the Contract Documents within 10 days after written demand, City may, without prejudice to other remedies, sell such materials at auction or at private sale, or otherwise dispose of such material. Contractor shall be entitled to the proceeds of such sale, if any, more than the costs and damages for which Contractor is liable to City, including compensation for City's Representative's services and expenses. If such proceeds of sale do not cover costs and damages for which Contractor is liable to City, the Contract Sum shall be reduced by such deficiency. If there are no remaining payments due Contractor or the remaining payments are insufficient to cover such deficiency, Contractor shall promptly pay the difference to City.

Contractor's obligations under this Section are in addition to, and not in limitation of, its warranty under Section 01015 or any other obligation of Contractor under the Contract Documents. Enforcement of Contractor's express warranties and guarantees to repair contained in the Contract Documents shall be in addition to and not in limitation of any other rights or remedies City may have under the Contract Documents or at law or in equity for Defective Work, including, but not limited to, under CCP Sections 337.1 and 337.15. Nothing contained in this Section shall be construed to establish a period of limitation with respect to other obligations of Contractor under the Contract Documents. Establishment of the Guarantee To Repair Period relates only to the specific obligation of Contractor to correct the Work and in no way limits either Contractor's liability for Defective Work or the time within which proceedings may be commenced to enforce Contractor's obligations under the Contract Documents.

*****END OF SECTION*****

SECTION 00800 - SUPPLEMENTARY CONDITIONS

1.0 LOCAL EMPLOYMENT (For contracts valued at \$100,000 and above)

Contractor shall make a good-faith effort, with the assistance of local labor union hiring halls or community organizations designated by the City to employ qualified individuals who are and have been for one year prior to the effective date of the contract, residents of Stockton in sufficient numbers so that no less than 50% of the contractor's total construction work force, including any subcontractor work force, measured in labor work hours, is comprised of Stockton residents.

Contractor or subcontractor shall make a good faith effort to employ apprentices who are enrolled in and participating in a viable apprenticeship program serving the San Joaquin Valley and approved by the State Department of Apprenticeship Standards. This apprenticeship requirement shall apply for each apprenticeable craft or trade in which the contractor employs workers in performing any of the work under the contract.

If, in response to a written request made at least 48 hours (excluding Saturdays, Sundays and holidays) before the date on which one or more apprentices are required, an apprenticeship program(s) does not dispatch any apprentice or dispatches fewer apprentices than requested to a contractor (that has agreed to employ and train apprentices in accordance with California Labor Code Section 1777.5) within 72 hours of such request (excluding Saturdays, Sundays and holidays), that contractor shall be considered in compliance with the apprentice employment requirement for that trade or craft for a 90-day period from the request date, provided the contractor employs those apprentices who are dispatched. Where there is more than one viable apprenticeship program for that trade or craft serving the San Joaquin Valley, a contractor, that is not a participant in or an affiliate of an apprenticeship program and receives fewer apprentices dispatched than requested, shall not be considered in compliance with the apprentice employment requirement unless the contractor has made a written request for the dispatch of apprentices from at least two viable apprenticeship programs. A contractor, that is a participant in or an affiliate of an apprenticeship program, shall make dispatch requests to the program in which it is affiliated or participating.

If no viable apprenticeship program exists for a particular craft or trade, the contractor shall be exempt from the requirements of this Section about that craft or trade.

A contractor employing apprentices pursuant to this Section shall employ apprentices in a ratio of not less than one apprentice for each five journeymen in the apprenticeship craft or trade classification that are employed on the public work contract unless to do so would result in apprentice employment in ratios below the minimum ratios prescribed by California Labor Code Section 1777.5 in which case apprentice employment shall be at least in the ratios prescribed by California Labor Code Section 1777.5.

This Section shall not be construed to exempt a contractor from any otherwise applicable requirement imposed upon the contractor by the California Labor Code.

1.1 GOOD FAITH EFFORT

A bidder or contractor who fails to meet the goal of having 50 percent of its work force be residents of Stockton shall, nevertheless, be deemed to have made a "good faith effort" to hire enough

residents of Stockton if, prior to execution of the contract with the City, six (6) or more of the following employee recruitment activities have been undertaken and documented:

- (A) Placing a valid job order for existing and projected position vacancies with the local office of the State Employment Development Department, for no less than 10 consecutive calendar days.
- (B) Placing a valid job order for existing and projected position vacancies with Worknet of San Joaquin County, for no less than 10 consecutive calendar days.
- (C) Advertising existing and projected position vacancies, job informational meetings, job application workshops, job application centers and job interviews by posting notices which identify the positions to be filled, the qualifications required, and where to obtain additional information about the application process, in conspicuous local authorized public places, including but not limited to the City Hall, schools, post offices, libraries, and senior citizens' centers.
- (D) Conducting a job informational meeting to inform the community of employment opportunities of the contractor, to be held at a City or other public facility (may be combined with other contractors).
- (E) Providing ongoing assistance to Stockton residents in completing job application forms.
- (F) Conducting a job application workshop to assist the community in applying and interviewing for jobs in the contracting industry, to be held at a City or other public facility (maybe combined with other contractors).
- (G) Establishing a job application center located in the City of Stockton, where job applications may be obtained, delivered to and collected.
- (H) Conducting job interviews within 10 miles of the location designated for contract performance.
- (I) Advertising valid existing and projected position vacancies through the local media, such as community television network, local newspapers of general circulation, and trade papers or minority focus newspapers.
- (J) Telephone solicitation of known potential local subcontractors or employees.
- (K) Any other means of obtaining employees who are residents of Stockton that are reasonably calculated to comply with the goals of this ordinance.

1.2 REQUIRED DOCUMENTATION

The contractor shall keep, and provide to the City, on standardized forms acceptable to the City, an accurate record showing the name, place of residence, hours employed and per diem wages and benefits of each person employed by the contractor, and the contractor's subcontractors, on the specific public works project, including full-time, part-time, permanent and temporary employees.

The contractor shall keep, and provide to the City, on forms acceptable to the City, an accurate record, documenting the contractor's good faith efforts to comply with the local resident employment and apprentice employment provisions of this Section. Said records shall include: a listing by name and address of all local recruitment sources contacted by the contractor; the date of the local recruitment contact and the identity of the person contacted; the trade *and* classification *and* number of employment referrals requested; *the* number of residents employed because of the contact; and the identity and address of the person(s) employed pursuant to the contact.

1.3 FORMS SUBMITTED UNDER PENALTY OF PERJURY

All forms required under this Section shall attest to the veracity of the information set forth therein and shall be submitted under penalty of perjury.

1.4 IRRESPONSIBLE BIDDER DECLARATION

Should any contractor or subcontractor fail to abide by the good-faith local resident employment and apprentice employment provisions of this Section, the contractor or subcontractor may be declared by the City to be an irresponsible bidder on future projects pursuant to Section 3.72.010 of this Code.

1.5 BINDING ON SUBCONTRACTORS

The good-faith local resident employment and apprentice employment provisions of this Section shall bind the contractor both with respect to persons employed directly by the contractor and to all persons employed by the contractor's subcontractors. The contractor shall be responsible for assuring that all subcontractors document said compliance by submitting, and making available to the City, the forms required by this Section.

1.6 DEFINITIONS

As used in this Section, the following terms shall have the following definitions:

- (A) "Qualified individual" means an individual who is in a certified state or federally approved apprenticeship program in an applicable trade or has become a journeyman in his or her applicable trade.
- (B) "Contract for public works or improvement" means any contract with the City for construction, alteration, demolition or repair work.
- (C) "Resident of Stockton" means an individual who has been domiciled, as defined by Section 200(b) of the California Elections Code, within the boundaries of Stockton for at least one year immediately preceding the date of the award of contract by the City and who can verify his or her domicile upon request of the contractor or City by producing documentation such as a rent/lease agreement, telephone and utility bills or payment receipts, a valid California driver's license or identification card, and/or any other similar, reliable evidence that verifies that the individual is domiciled within Stockton. For the purposes of this Section, the following Zip Code areas are within Stockton: 95202, 95203,

95204, 95205, 95206, 95207, 95209, 95210, 95212, 95215 and 95219.

- (D) "Viable apprenticeship program" means an apprenticeship program approved by the California Department of Apprenticeship Standards that has graduated apprentices annually for at least the past five years. Any apprenticeship program that has been approved for less than ten years shall be deemed a viable apprenticeship program provided that, following the fifth anniversary of its approval by the California Department of Apprenticeship Standards, it graduates apprentices each subsequent year.

1.7 CONTRACTS - SUBCONTRACTS

Contracts and bid documents shall incorporate this Section by reference and shall provide that the failure of any contractor or subcontractor to comply with any of the requirements of this Section shall be deemed a material breach of the contract or subcontract.

All subcontracts shall expressly acknowledge the City's status as a third party beneficiary to that subcontract and further expressly acknowledge that the City, as a third party beneficiary, shall have the right to enforce the provisions of this Section about that subcontract or seek remedies available under this Section should a party to the subcontract fail to comply with any of the provisions of this Section that apply to the subcontract. However, nothing set forth herein shall create a contractual relationship, or privity, between the City and any subcontractor. Bidders or contractors and subcontractors shall maintain records necessary for monitoring their compliance with this Section.

1.8 EXCEPTIONS

The provisions of this Section shall not apply:

- (A) Where the City determines that the contract is necessary to respond to a declared emergency which endangers the public health, welfare, or safety and there is no time to apply the provisions of this Section.

To City construction contracts or portions thereof, wherein the work is of a highly specialized nature as determined by the City Council when the contract specifications are approved (Ord. 011-09 § 1, eff. 10-01-09)

**LOCAL EMPLOYMENT ORDINANCE
COMPLIANCE DOCUMENTATION**

Final Report

For

**PROJECT NAME
PROJECT NO.**

**CITY OF STOCKTON
MUNICIPAL UTILITIES DEPARTMENT**



Notice to Proceed: _____ **Date** _____

General Information

The Prime Contractor and every subcontractor shall complete this page and the accompanying forms no later than 30 days after Substantial Completion of the Project.

Project Name: _____

Project Number: _____

Contract Date: _____

Contractor: _____

Address: _____

City: _____ **STATE:** _____ **ZIP:** _____

Phone: _____

Contractor's License Number: _____

Type of Contractor's License (s): _____

SUMMARY SHEET FOR LOCAL RESIDENT PARTICIPATION

List the actual number of hours performed in Table 1

TABLE 1

ITEM	DESCRIPTION	HOURS TO DATE
A	Total number of hours performed at the jobsite	
B	Qualifying number of labor hours performed at the jobsite	

Qualifying hours are defined as hours performed by Local Residents.

Percent local participation: $B/A \times 100 =$

GOOD FAITH EFFORT DOCUMENTATION

CITY OF STOCKTON
MUNICIPAL UTILITIES DEPARTMENT

Please check all boxes that apply:

- Placed a valid job order for existing and projected position vacancies with the local office of the State Employment Development Department, for no less than 10 consecutive calendar days.
- Placed a valid job order for existing and projected position vacancies with Worknet of San Joaquin County, for no less than 10 consecutive calendar days.
- Advertised existing and projected position vacancies, job informational meetings, job application workshops, job application centers and job interviews by posting notices which identify the positions to be filled, the qualifications required, and where to obtain additional information about the application process, in conspicuous local authorized public places, including but not limited to the City Hall, schools, post offices, libraries, and senior citizens' centers.
- Conducted a job informational meeting to inform the community of employment opportunities of the contractor, to be held at a City facility (may be combined with other contractors).
- Provided ongoing assistance to Stockton residents in completing job application forms.
- Conducted a job application workshop to assist the community in applying and interviewing for jobs in the contracting industry, to be held at a City facility (maybe combined with other contractors).
- Established a job application center located in the City of Stockton, where job applications may be obtained, delivered to and collected.
- Conducted job interviews within 10 miles of the location designated for contract performance.
- Advertised valid existing and projected position vacancies through the local media, such as community television network, local newspapers of general circulation, and trade papers or minority focus newspapers.
- Telephone solicitation of known potential local subcontractors or employees.
- Any other means of obtaining employees who are residents of Stockton that are reasonably calculated to comply with the goals of this ordinance.

Please provide supporting documentation for all boxes checked.

I declare under the penalty of perjury that the foregoing information is true and correct.

By my signature below, I acknowledge that I have met the requirements of the City of Stockton's Local Employment Ordinance.

I understand this information is subject to audit verification, and I acknowledge and am hereby advised that upon, and because of, a finding of non-compliance with the Local Employment Ordinance Provisions, the City may determine that I and/or my firm is not a responsible bidder on future projects.

Owner/Authorized Representative (Signature)

Name of Firm

Name and Title (Print)

Date

2.0 COMMUNITY WORKFORCE AND TRAINING AGREEMENT (For contracts valued at \$1,000,000 and above)

COMMUNITY WORKFORCE AND TRAINING AGREEMENT FOR THE CITY OF STOCKTON

INTRODUCTION/FINDINGS

The purpose of this Agreement is to promote efficiency of construction operations performed for and within the City of Stockton and to provide for peaceful settlement of labor disputes and grievances without strikes or lockouts, thereby promoting the public interest in assuring the timely and economical completion of the projects subject to this Agreement, and to support the efforts of the City to increase employment opportunities for workers who reside in Stockton, to help increase training and employment opportunities for the City's students in the construction trades through apprenticeship and pre-apprentice programs as the students graduate from the City's schools.

WHEREAS, the City adopts a five-year Capital Improvement Plan that identifies the public projects necessary to maintain and improve the physical properties of the City, including buildings, parks, entertainment venues, golf courses, utility systems, the transportation system and other facilities; and

WHEREAS, the City undertakes and anticipates undertaking many of the projects identified in the current and proposed Capital Improvement Plan and other City public works projects that involve significant construction costs in excess of threshold set forth in this Agreement; and

WHEREAS, the City Council has determined that the successful and cost-effective completion of these Capital Improvement Plan projects and other major City public works projects is of the utmost importance to the City and its taxpayers and the residents it serves; and

WHEREAS, the City has determined that applying the same Agreement to the Capital Improvement Plan and other public works construction projects that exceed the threshold set forth in this Agreement during the term of this Agreement will provide efficiencies for the City and its contractors; and

WHEREAS, large numbers of workers of various skills will be required in the performance of the construction work, including those workers represented by Unions affiliated with the San Joaquin Building and Construction Trades Council ("the Council") and employed by contractors and subcontractors who are signatory to agreements with said labor organizations; and

WHEREAS, it is recognized that projects with multiple contractors and bargaining units on the job site at the same time over an extended period of time, the potential for work disruption is substantial without an overriding commitment to maintain continuity of work; and

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WHEREAS, the interests of the general public, the City and the Contractor(s)/Employer(s) would be best served if the construction work proceeded in an orderly manner without disruption due to labor disputes; and

WHEREAS, the Contractor(s)/Employer(s) and the Unions desire to mutually establish and stabilize wages, hours and working conditions for the workers employed on the construction projects subject to this Agreement in order to promote a satisfactory, continuous and harmonious relationship among the parties to this Agreement; and

WHEREAS, unemployment rates in Stockton have been consistently higher than in California as a whole and statistics indicate that the higher unemployment level in Stockton correlates to a higher number of families living in poverty and to a higher crime rate; and

WHEREAS, due to the lack of jobs, much of the work force residing in Stockton is forced to commute long distances to find work, causing increased traffic, increased pollution, and other serious environmental impacts; and

WHEREAS, because of the shortage of local jobs, many residents of Stockton must leave for work very early in the morning and return late in the evening, often leaving children and teenagers alone and unsupervised during the day; and

WHEREAS, absentee parents and unsupervised youth can result in increased problems for families, communities, and the City as a whole; and

WHEREAS, the contracts for the construction of the projects will be awarded in accordance with the applicable provisions of the California State Public Contract Code and state, local and federal laws and regulations; and

WHEREAS, the City has the absolute right to select the lowest responsive and responsible bidder for the award of construction contracts on the projects; and

WHEREAS, the parties signatory to this Agreement pledge their full good faith and trust to work towards mutually satisfactory completion of the Capital Improvement Plan projects and other major City public works projects that will be subject to this Agreement; and

NOW, THEREFORE, IT IS AGREED BETWEEN AND AMONG THE PARTIES HERETO, AS FOLLOWS:

ARTICLE I
DEFINITIONS

- 1.1 "Agreement" means this Community Workforce and Training Agreement.
- 1.2 "City" means the City of Stockton and its public employees, including managerial personnel.

1.3 "Contractor(s)/Employer(s)" or "Contractor" means any individual, firm, partnership or corporation, or combination thereof, including joint ventures, that is an independent business enterprise and has entered into a contract with the City or Project Manager or any of its contractors or subcontractors of any tier, with respect to the construction of any part of the Project under contract terms and conditions approved by the City and which incorporate this Agreement.

1.4 "Construction Contract" means a contract awarded by the City for public work within the meaning of Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 of the California Labor Code.

1.5 "Project" means any construction project of the City whose value as determined by the higher of the engineer's estimate of the total cost of the project or the actual cumulative bid amounts submitted by the contractor or contractors awarded the Construction Contracts for the Project, exceeds one million dollars (\$1,000,000). By mutual consent of the City and the Council, this threshold amount may be reduced to an amount not below two hundred and fifty thousand dollars (\$250,000) after one year from the effective date of this Agreement.

1.6 "Union" or "Unions" means the San Joaquin Building and Construction Trades Council, AFL-CIO ("the Council") and any other labor organization, including those affiliated with the Council, signatory to this Agreement, acting in their own behalf and on behalf of their respective affiliates and member organization whose names are subscribed hereto and who have through their officers executed this Agreement ("Local Unions").

1.7 "Stockton Resident" means a resident of the City of Stockton as defined by Stockton Municipal Code Section 3.68.095(I)(3).

1.8 "Local Area Resident" means any Stockton Resident or any individual domiciled within the boundaries of San Joaquin County according to the criteria set forth in Stockton Municipal Code Section 3.68.095(I)(3) for Stockton Residents.

1.9 "Project Manager" means the business entity or City employee designated by the City to oversee all phases of construction on the Project.

1.10 "Master Agreement" or "Schedule A" means the Master Collective Bargaining Agreement of each craft union signatory hereto, which shall be on file with the City.

1.11 "Completion" means that point at which the City accepts a project at issue by filing a Notice of Completion, or as otherwise provided by applicable state law. "Punch List" items and any other work within the scope of this Agreement not completed prior to commencement of revenue service shall nonetheless be included within the scope of this Agreement. It is understood by the parties that portions of the Project may be completed in phases and Completion of any such phase may occur prior to Completion of the Project.

ARTICLE II
SCOPE OF AGREEMENT

2.1 **Parties:** The Agreement shall apply and is limited to the City and all Contractor(s)/Employer(s) performing construction contracts on the Project, including surveying and on-site testing and inspection where such work is traditionally covered by a Master Agreement with a Union, and the Council and any other labor organization signatory to this Agreement, acting in their own behalf and on behalf of their respective affiliates and member organizations whose names are subscribed hereto and who have through their officers executed this Agreement.

2.2 **Project Description:** The Agreement shall govern the award of all Construction Contracts identified by the City as part of the Project. The City has the absolute right to combine, change, consolidate, suspend or cancel Construction Contract(s) or portions of Construction Contract(s) identified as part of the Project. Should the City suspend or remove any individual contract from the Project and thereafter authorize that construction work be commenced on such contract, then such contract shall be performed under the terms of this Agreement. Once a Construction Contract is completed it is no longer covered by this Agreement except when a Contractor is directed to engage in repairs, warranty work or modifications required by its Construction Contract with the City. For the purposes of this Agreement, a Construction Contract shall be considered Completed as set forth in Section 1.11 of this Agreement.

2.3 **Covered Work:** This Agreement covers, without limitation, all site preparation, surveying, on-site construction, alteration, demolition, installation, improvement, painting or repair of buildings, structures, modular furniture installations, and other works and related activities for the Project that is within the craft jurisdiction of one of the Unions and that is part of the Project, including, without limitation to the following examples, geotechnical and exploratory drilling, temporary HVAC, landscaping and temporary fencing, pipelines (including those in linear corridors built to serve the Project), pumps, pump stations, on-site soils and material inspection and testing, and demolition of any existing structures required to be performed to complete the Project. This Agreement shall apply to any start-up, calibration, commissioning, performance testing repair, and operational revisions to systems and/or subsystems for the Project performed after completion, unless it is performed by City employees. On-site work includes work done for the Project in temporary yards or areas adjacent to the Project, and at any on-site or off-site batch plant constructed solely to supply materials to the Project. This Agreement covers all onsite fabrication work over which the City or any Contractor(s)/Employer(s) possess the right of control (including work done for the Project in any temporary yard or area established for the Project.) This Agreement also covers all off-site work, including fabrication traditionally performed by the Unions, that is part of the Project, provided such off-site work is covered by a current "Master Agreement" or local addenda to a National Agreement of the applicable Union(s) that is in effect as of the execution date of this Agreement. The furnishing of supplies, equipment or materials which are stockpiled for later use shall not be considered Covered Work; however, the delivery of ready-mix, asphalt, aggregate, sand or other fill material which are directly incorporated into the construction process as well as the off-hauling of debris and excess fill, material and/or mud shall be covered by the terms and conditions of this Agreement. Contractor(s)/Employer(s), including brokers, of persons providing construction trucking work shall provide certified payroll records to the City within ten (10) days of a written request or as required by bid specifications.

2.4 Exclusions from Covered Work

2.4.1 The Agreement shall be limited to construction work on the Project and is not intended to, and shall not affect or govern the award of public works contracts by the City which are not a part of the Project.

2.4.2 The Agreement shall not apply to a Contractor's/Employer's non-construction craft employees, including but not limited to executives, managerial employees, engineering employees and supervisors above the level of General Foreman (except those covered by existing Master Agreements), staff engineers or other professional engineers, administrative and management personnel.

2.4.3 This Agreement shall not apply to work by employees of the City.

2.4.4 This Agreement shall not apply to any work performed on or near or leading to the site of work covered by this Agreement that is undertaken by state, county, City or other governmental bodies or their contractors; or by public or private utilities or their contractors that is not part of the Project.

2.4.5 This Agreement shall not apply to the Project where the Agreement is prohibited by state or federal law or where the express conditions for the receipt of non-de minimis state or federal funding prohibit the City from applying this Agreement to the Project.

2.5 Project Labor Disputes: All Project labor disputes involving the application or interpretation of the Master Agreement to which a signatory Contractor(s)/Employer(s) and a signatory Union are parties shall be resolved pursuant to the resolution procedures of the Master Agreement. All disputes relating to the interpretation or application of this Agreement shall be subject to resolution by the Grievance Committee and the Grievance and Arbitration Procedure set forth in Article XII.

2.6 Work covered by this Agreement within the following craft jurisdictions shall be performed under the terms of their National Agreements as follows: the National Transient Lodge ("NTL") Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, and the National Agreement of Elevator Constructors, and any instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Technicians, with the exception that Articles IV, XII, XIII of this Agreement shall apply to such work.

2.7 Award of Contracts. It is understood and agreed that the City has the absolute right to select any qualified bidder for the award of contracts under this Agreement. The bidder need only be willing, ready and able to execute and comply with this Agreement. It is further agreed that this Agreement shall be included in all invitations to bid or solicitations for proposals from contractors or subcontractors for work on the Project that are issued on and after the effective date of this Agreement.

ARTICLE III
EFFECT OF AGREEMENT

3.1 By executing the Agreement, the Unions and the City agree to be bound by each and all of the provisions of the Agreement.

3.2 This Agreement shall be included as a condition of the award of Construction Contracts for the Project. By accepting the award of a Construction Contract for the Project, whether as contractor or subcontractor, the Contractor(s)/Employer(s) agrees to be bound by each and every provision of the Agreement and agrees that it will evidence its acceptance prior to the commencement of work by executing the Agreement to be Bound in the form attached hereto as Addendum A.

3.3 At the time that any Contractor(s)/Employer(s) enters into a subcontract with any subcontractor providing for the performance of a Construction Contract, the Contractor(s)/Employer(s) shall provide a copy of this Agreement to said subcontractor and shall require the subcontractor as a part of accepting an award of a construction subcontract to agree in writing, to be bound by each and every provision of this Agreement prior to the commencement of work by executing the Agreement to be Bound in the form attached hereto as Addendum A.

3.4 This Agreement shall only be binding on the signatory parties hereto, their successors and assigns, and shall not apply to the parents, affiliates, subsidiaries, or other ventures of any such party. Each Contractor shall alone be liable and responsible for its own individual acts and conduct and for any breach or alleged breach of this Agreement. Any dispute between the Union(s) and the Contractor(s) respecting compliance with the terms of the Agreement, shall not affect the rights, liabilities, obligations and duties between the signatory Union(s) and other Contractor(s)/Employer(s) party to this Agreement.

3.5 It is mutually agreed by the parties that any liability by a signatory Union to this Agreement shall be several and not joint. Any alleged breach of this Agreement by a signatory Union shall not affect the rights, liabilities, obligations and duties between the signatory Contractor(s) and the other Union(s) party to this Agreement.

3.6 The provisions of this Agreement, including the Master Agreements of the Local Unions having jurisdiction over the work on the Project, incorporated herein by reference, shall apply to the work covered by this Agreement, notwithstanding the provisions of any other local, area and/or national agreements which may conflict with or differ from the terms of this Agreement. Where a subject covered by the provisions of this Agreement is also covered by a Master Agreement, the provisions of this Agreement shall prevail. Where a subject is covered by the provisions of a Schedule A and is not covered by this Agreement, the provisions of the Master Agreement shall prevail.

ARTICLE IV
WORK STOPPAGES, STRIKES, SYMPATHY
STRIKES AND LOCKOUTS

4.1 The Unions, City and Contractor(s)/Employer(s) agree that for the duration of the Project:

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(1) There shall be no strikes, sympathy strikes, work stoppages, picketing, hand billing or otherwise advising the public that a labor dispute exists, or slowdowns of any kind, for any reason, by the Unions or employees employed on the Project, at the job site of the Project or at any other facility of the City because of a dispute on the Project. Nor shall the Unions or any employees employed on the Project participate in any strikes, sympathy strikes, work stoppages, picketing, hand billing, slowdowns, or otherwise advising the public that a labor dispute exists at the jobsite of the Project because of a dispute between Unions and Contractor(s)/Employer(s) on any other project. It shall not be considered a violation of this Article if labor is withheld by a Union due to lack of payments to a Trust Fund or failure to make payroll on the Project. Nothing stated in this Agreement shall prevent Unions from participating in the actions mentioned in this section on jobsites other than the Project jobsite because of disputes between the Unions and Contractor(s)/Employer(s) on projects other than the Project.

(2) As to employees employed on the Project, there shall be no lockout of any kind by a Contractor(s)/Employer(s) covered by the Agreement.

(3) If a Master Agreement between a Contractor(s)/Employer(s) and the Union expires before the Contractor(s)/Employer(s) completes the performance of a Construction Contract for work covered under this Agreement and the Union or Contractor(s)/Employer(s) gives notice of demands for a new or modified Master Agreement, the Union agrees that it will not strike the Contractor(s)/Employer(s) on said contract for work covered under this Agreement and the Union and the Contractor(s)/Employer(s) agree that the expired Master Agreement shall continue in full force and effect for work covered under this Agreement until a new or modified Master Agreement is reached between the Union and Contractor(s)/Employer(s). If the new or modified Master Agreement reached between the Union and Contractor(s)/Employer(s) provides that any terms of the Master Agreement shall be retroactive, the Contractor(s)/Employer(s) agrees to comply with any retroactive terms of the new or modified Master Agreement which is applicable to employees employed on the Project within seven (7) days after the effective date of the new or modified Master Agreement.

4.1.1. Notification: If the City contends that any Union has violated this Article, it will notify in writing (including email) the Senior Executive of the Council and the Senior Executive of the Union, setting forth the facts alleged to violate the Article, prior to instituting the expedited arbitration procedure set forth below. The Senior Executive of Council will immediately use his/her best efforts to cause the cessation of any violation of this Article. The Senior Executive of the Union will immediately inform the membership of their obligations under this Article. A Union complying with this obligation shall not be held responsible for unauthorized acts of employees it represents.

4.2 Expedited Arbitration: Any party to this Agreement shall institute the following procedure, prior to initiating any other action at law or equity, when a breach of this Article is alleged to have occurred:

(1) A party invoking this procedure shall notify Robert Hirsch, as the permanent arbitrator, or, William Riker, as the alternate under this procedure. In the event that the permanent arbitrator is unavailable at any time, the alternate will be contacted. If neither is available, then a selection shall be made from the list of arbitrators in Article XII. Notice to the arbitrator shall be

by the most expeditious means available, with notices by facsimile, electronic mail or telephone to the party alleged to be in violation, to the City, to the Council and to the involved Local Union if a Union is alleged to be in violation.

(2) Upon receipt of said notice, the City will contact the designated arbitrator named above or his alternate who will attempt to convene a hearing within twenty-four (24) hours if it is contended that the violation still exists.

(3) The arbitrator shall notify the parties by facsimile or telephone of the place and time for the hearing. Said hearing shall be completed in one session, which, with appropriate recesses at the arbitrator's discretion, shall not exceed twenty-four (24) hours unless otherwise agreed upon by all parties. A failure of any party to attend said hearings shall not delay the hearing of evidence or the issuance of any award by the arbitrator.

(4) The sole issue at the hearing shall be whether or not a violation of Article IV, Section 4.1 of the Agreement has occurred. The arbitrator shall have no authority to consider any matter of justification, explanation or mitigation of such violation or to award damages, which issue is reserved for court proceedings, if any. The award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with or enforcement of the award. The arbitrator may order cessation of the violation of this Article and other appropriate relief and such award shall be served on all parties by hand or registered mail upon issuance.

(5) Such award may be enforced by any Court of competent jurisdiction upon the filing of this Agreement and all other relevant documents referred to above in the following manner. Written notice of the filing of such enforcement proceedings shall be given to the other party. In the proceeding to obtain a temporary order enforcing the arbitrator's award as issued under Section 4.2 of this Article, all parties waive the right to a hearing and agree that such proceedings may be *ex-parte*. Such agreement does not waive any party's right to participate in a hearing for a final order or enforcement. The Court's order or orders enforcing the arbitrator's award shall be served on all parties by hand or delivered by certified mail.

(6) Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure, or which interfere with compliance, are waived by the parties.

(7) The fees and expenses of the arbitrator shall be divided equally between the party instituting the arbitration proceedings provided in this Article and the party alleged to be in breach of its obligation under this Article.

ARTICLE V
PRE-CONSTRUCTION CONFERENCE

5.1 The Project Manager shall convene a pre-construction conference to be held at least fourteen (14) days prior to the commencement of each construction phase, at a time and location mutually agreeable to the Council. Such conference shall be attended by a representative each from the participating Contractor(s)/Employer(s) and Union(s) and the Project Manager.

5.2 Review Meetings: In order to ensure the terms of this Agreement are being fulfilled and all concerns pertaining to the City, the Unions, and the Contractors are addressed, the Project Manager, General Contractor and Senior Executive of the Council or designated representatives thereof shall meet on a periodic basis during the term of construction. The City and the Council shall have the right to call a meeting of the appropriate parties to ensure the terms of this Agreement are being fulfilled.

ARTICLE VI
NO DISCRIMINATION

6.1 The Contractor(s)/Employer(s) and Unions agree to comply with all anti-discrimination provisions of federal, state and local law, to protect employees and applicants for employment, on the Project.

ARTICLE VII
UNION SECURITY

7.1 The Contractor(s)/Employer(s) recognize the Union(s) as the sole bargaining representative of all craft employees working within the scope of this Agreement.

7.2 All employees performing work covered by this Agreement shall, as a condition of employment on or before the eighth (8th) cumulative day of employment on the Project, be responsible for the payment of the applicable periodic working dues and fees uniformly required for union membership in the Local Union that is a signatory to this Agreement for the duration of his or her employment on the Project. Nothing in this Agreement is intended to prevent any non-union employees from joining the Local Union.

7.3 Authorized representatives of the Unions shall have access to the Project whenever work covered by this Agreement is being, has been, or will be performed on the Project.

ARTICLE VIII
REFERRAL

8.1 Contractor(s)/Employer(s) performing construction work on the Project described in the Agreement shall, in filling craft job requirements, utilize and be bound by the registration facilities and referral systems established or authorized by the Local Unions ("Job Referral System"). Such Job Referral System shall be operated in a non-discriminatory manner and in full compliance with all federal, state, and local laws and regulations, including those which require

equal employment opportunities and non-discrimination. The Contractor(s)/Employer(s) shall have the right to reject any applicant referred by the Union(s), in accordance with the applicable Master Agreement.

8.2 The Contractor(s)/Employer(s) shall have the unqualified right to select and hire directly all supervisors above general foreman it considers necessary and desirable, without such persons being referred by the Union(s).

8.3 In the event that referral facilities maintained by the Union(s) are unable to fill the requisition of a Contractor(s)/Employer(s) for employees within a forty-eight (48) hour period (Saturdays, Sundays and Holidays excluded) after such requisition is made by the Contractor(s)/Employer(s), the Contractor(s)/Employer(s) shall be free to obtain work persons from any source. A Contractor who hires any personnel to perform covered work on the Project pursuant to this Section shall immediately provide the appropriate Union with the name and address of such employee(s) and shall immediately refer such employee(s) to the appropriate Union to satisfy the requirements of Article VII of this Agreement.

8.4 Unions will exert their utmost efforts to recruit sufficient numbers of skilled craft persons to fulfill the requirements of the Contractor(s)/Employer(s). Recognizing the special needs of the Project and the acute shortage of skilled craftspeople, the Unions shall consider a Contractor's request to transfer key employees to work on this Project in a manner consistent with the Union's referral procedures.

8.5 The parties to this Agreement support the development of increased numbers of skilled construction workers from the City of Stockton and San Joaquin County. To the extent allowed by law, and consistent with the Local Union's hiring hall provisions, and as long as they possess the requisite skills and qualifications, Local Area Residents, including journeymen and apprentices, shall be referred for Project work covered by this Agreement.

ARTICLE IX WAGES AND BENEFITS

9.1 All Contractors/Employers agree to pay contributions to the established vacation, pension and other form of deferred compensation plan, apprenticeship, and health benefit funds established by the applicable Master Agreement for each hour worked on the Project in the amounts designated in the Master Agreements of the appropriate Local Unions.

9.2 By signing this Agreement, the Contractor(s)/Employer(s) adopts and agrees to be bound by the written terms of the legally established Trust Agreements, as described in section 9.1, specifying the detailed basis on which payments are to be made into, and benefits paid out of, such Trust Funds established by such appropriate local agreements. The Contractor(s)/Employer(s) authorizes the parties to such local trust agreements to appoint trustees and successor trustees to administer the trust funds and hereby ratify and accept the trustees so appointed as if made by the Contractor(s)/Employer(s).

9.3 Wages, Hours, Terms and Conditions of Employment: The wages, hours and other terms and conditions of employment on the Project shall be governed by the Master Agreement of the respective crafts, copies of which shall be on file with the City to the extent such Master

Agreement is not inconsistent with this Agreement. All employees covered by this Agreement shall be classified and paid in accordance with the classification and wage scales contained in the appropriate local agreements which have been negotiated by the historically recognized bargaining entity and in compliance with the applicable general prevailing wage determination made by the Director of Industrial Relations pursuant to the California Labor Code.

9.4 During the period of construction on this Project, the Contractor(s)/Employer(s) agrees to recognize and put into effect such increases in wages and recognized fringe benefits as shall be negotiated between the various Unions and the historically recognized local bargaining entity on the effective date as set forth in the applicable agreement. The Unions shall notify the Contractor(s)/Employer(s) in writing of the specific increases in wages and recognized fringe benefits and the date on which they become effective.

9.5 Holidays: Holidays shall be in compliance with the applicable Schedule A agreement.

ARTICLE X
EMPLOYEE GRIEVANCE PROCEDURE

10.1 All disputes involving discipline and/or discharge of employees working on the Project shall be resolved through the grievance and arbitration provision contained in the Master Agreement for the craft of the affected employee. No employee working on the Project shall be disciplined or dismissed without just cause.

ARTICLE XI
COMPLIANCE

11.1 It shall be the responsibility of the Contractor(s)/Employer(s) and Unions to investigate and monitor compliance with the provisions of the Agreement contained in Article IX. Nothing in this agreement shall be construed to interfere with or supersede the usual and customary legal remedies available to the Unions and/or employee benefit Trust Funds to collect delinquent Trust Fund contributions from Employers on the Project. The City shall monitor and enforce compliance with the prevailing wage requirements of the state and Contractors'/Employers' compliance with this Agreement.

ARTICLE XII
GRIEVANCE ARBITRATION PROCEDURE

12.1 The parties understand and agree that in the event any dispute arises out of the meaning, interpretation or application of the provisions of this Agreement, the same shall be settled by means of the procedures set out herein. No grievance shall be recognized unless the grieving party (Local Union or City on its own behalf, or on behalf of an employee whom it represents, or a contractor on its own behalf) provides notice in writing to the signatory party with whom it has a dispute within five (5) days after becoming aware of the dispute but in no event more than thirty (30) days after it reasonably should have become aware of the event giving rise to the dispute. The time limits in this Section 12.1 may be extended by mutual written agreement of the parties.

12.2 Grievances shall be settled according to the following procedures:

Step 1: Within five (5) business days after the receipt of the written notice of the grievance, the Business Representative of the involved Local Union or City, or his/her designee, or the representative of the employee, and the representative of the involved Contractor(s)/Employer(s) shall confer and attempt to resolve the grievance.

Step 2: In the event that the representatives are unable to resolve the dispute within the five (5) business days after the meeting to resolve the dispute in Step 1, the International Union Representative and the Contractor(s)/Employer(s) involved shall meet within seven (7) working days of the referral of the dispute to this second step to arrive at a satisfactory settlement thereof. Meeting minutes shall be kept by the Contractor. In the event that these representatives are unable to resolve the dispute after its referral to Step 2, either involved party may submit it within three (3) business days to the Grievance Committee, which shall meet within five (5) business days after such referral (or such longer time as is mutually agreed upon by all representatives on the Grievance Committee), to confer in an attempt to resolve the grievance. The Grievance Committee shall be comprised of two (2) representatives of the City; and one (1) representative of the Project Manager, and three (3) representatives of the San Joaquin Building & Construction Trades Council. If the dispute is not resolved within such time (five (5) business days after its referral or such longer time as mutually agreed upon) it may be referred within five (5) business days by either party to Step 3.

Step 3: If the grievance is not settled in Step 2 within five (5) business days, either party may request the dispute be submitted to arbitration or the time may be extended by mutual consent of both parties. Within five (5) business days after referral of a dispute to Step 3, the representatives shall choose a mutually agreed upon arbitrator for final and binding arbitration. If the parties are unable to agree on an arbitrator, an arbitrator shall be selected by the alternate striking method from the list of five (5) below. The order of striking names from the list of arbitrators shall be determined by a coin toss, the winner of which shall decide whether they wish to strike first or second. If any of the arbitrators listed below or in Article 4 is no longer working as a labor arbitrator at the time of selection, the City and the Council shall mutually agree to a replacement. In addition, the City and the Council may mutually agree to add additional arbitrators to those listed below.

1. William Riker
2. Barry Winogard
3. Thomas Angelo
4. Robert Hirsch
5. William Engler

12.3 The Arbitrator shall arrange for a hearing on the earliest available date from the date of his/her selection. A decision shall be given to the parties within five (5) calendar days after completion of the hearing unless such time is extended by mutual agreement. A written opinion may be requested by a party from the presiding arbitrator. The decision of the Arbitrator shall be

final and binding on all parties. The Arbitrator shall have no authority to change, amend, add to or detract from any of the provisions of the Agreement. The expense of the Arbitrator shall be borne equally by both parties.

12.4 The time limits specified in any step of the Grievance Procedure set forth in Section 12.2 may be extended by mutual agreement of the parties initiated by the written request of one party to the other, at the appropriate step of the Grievance Procedure. However, failure to process a grievance, or failure to respond in writing within the time limits provided above, without an agreed upon extension of time, shall be deemed a waiver of such grievance without prejudice, or without precedent to the processing of and/or resolution of like or similar grievances or disputes. In order to encourage the resolution of disputes and grievances at Steps 1 and 2 of this Grievance Procedure, the parties agree that such settlements shall not be precedent setting.

ARTICLE XIII
WORK ASSIGNMENTS AND JURISDICTIONAL DISPUTES

13.1 The assignment of Covered Work will be solely the responsibility of the Employer performing the work involved; and such work assignments will be in accordance with the Plan for the Settlement of the Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

13.2 All jurisdictional disputes on this Project between or among the building and construction trades Unions and the Employers parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Employers and Unions parties to this Agreement.

13.3 If a dispute arising under this Article involves the Northern California Carpenters Regional Council or any of its subordinate bodies, an Arbitrator shall be chosen by the procedures specified in Article V, Section 5, of the Plan from a list composed of John Kagel, Thomas Angelo, Robert Hirsch, and Thomas Pagan, and the Arbitrator's hearing on the dispute shall be held at the offices of the California State Building and Construction Trades Council in Sacramento, California within fourteen (14) days of the selection of the Arbitrator. All other procedures shall be as specified in the Plan.

13.4 All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature and the Employer's assignment shall be adhered to until the dispute is resolved. Individual employees violating this section shall be subject to immediate discharge. Each Employer will conduct a pre-job conference with the Council prior to commencing work. The Project Manager and City will be advised in advance of all such conferences and may participate if they wish. Pre-job conferences for different Employers may be held together.

**ARTICLE XIV MANAGEMENT
RIGHTS**

14.1 The Contractor(s)/Employer(s) shall retain full and, exclusive authority for the management of their operations, including the right to direct their workforce in their sole discretion. Except as provided by Section 2.3 and by the lawful manning provisions in the applicable Master Agreement, no rules, customs or practices shall be permitted or observed which limit or restrict production, or limit or restrict the working efforts of employees.

**ARTICLE XV
HELMETS TO HARDHATS**

15.1 The Contractor(s)/Employer(s) and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans and members of the National Guard and Reserves who are interested in careers in the building and construction industry. The Contractor(s)/Employer(s) and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center), a joint Labor-Management Cooperation Trust Fund, established under the authority of Section 6(b) of the Labor-Management Cooperation Act of 1978, 29 U.S.C. Section 175(a), and Section 302(c)(9) of the Labor-Management Relations Act, 29 U.S.C. Section 186(c)(9), and a charitable tax exempt organization under Section 501(c)(3) of the Internal Revenue Code, and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

15.2 The Unions and Contractor(s)/Employer(s) agree to coordinate with the Center to participate in an integrated database of veterans and members of the National Guard and Reserves interested in working on the Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

15.3 Nothing in this Article shall be interpreted to preclude any Contractor(s)/Employer(s) that is not signatory to a Master Agreement to utilize an alternative plan or program for recruiting, training and facilitating construction industry employment opportunities for military veterans and members of the National Guard and Reserves. Before utilizing such alternative program on the Project, such Contractor(s)/Employer(s) shall provide the City with a description of such plan or program.

**ARTICLE XVI
DRUG & ALCOHOL TESTING**

16.1 The use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms at any time during the work day is prohibited.

16.2 The Parties agree to recognize and use the Substance Abuse Program contained in each applicable Union's Schedule A.

ARTICLE XVII
TERM SAVINGS CLAUSE

17.1 The parties agree that in the event any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void as being in contravention of any applicable law, by a court of competent jurisdiction, the remainder of the Agreement shall remain in full force and effect. The parties further agree that if any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void, by a court of competent jurisdiction, the parties shall substitute, by mutual agreement, in its place and stead, an article, provision, clause, sentence or word which will meet the objections to its validity and which will be in accordance with the intent and purpose of the article, provision, clause, sentence or work in question.

17.2 The parties also agree that in the event that a decision of a court of competent jurisdiction materially alters the terms of the Agreement such that the intent of the parties is defeated, then the entire Agreement shall be null and void.

17.3 If a court of competent jurisdiction determines that all or part of the Agreement is invalid and/or enjoins the City from complying with all or part of its provisions and the City accordingly determines that the Agreement will not be required as part of an award to a Contractor(s)/Employer(s), the unions will no longer be bound by the provisions of Article IV.

ARTICLE XVIII
LOCAL HIRE, PRIORITY APPRENTICE AND WORKFORCE
DEVELOPMENT PROGRAM

18.1 The objective of the City in creating this Local Hire, Priority Apprenticeship and Workforce Development Program is to enhance and encourage employment opportunities for Stockton residents and to enable effective construction career pathways for Local Area Residents through California State approved Joint Apprenticeship Programs. To that end, as part of the Agreement, the City establishes goals for the hiring, training and retention of Local Area Residents.

18.2 Local Hire. The City establishes the following Local Hire goals and commitments:

18.2.1 The parties agree to make a good faith effort to refer on a priority basis, consistent with the non-discriminatory referral procedures of the applicable Union, qualified and available, Local Area Residents for Project work. The parties agree to a goal that Stockton residents shall perform a minimum of 50% of the hours worked on the Project by the Contractors' total construction workforce. In the event that a sufficient number of Stockton residents are not available to fulfill the 50% local hire requirement, the next tier of residents shall come from anywhere in San Joaquin County. The Contractor(s) shall make good faith efforts to reach this goal through the utilization of the Unions' hiring hall procedures. The Unions shall exercise their best efforts in their recruiting and training of Stockton resident workers and in utilizing their hiring hall procedures to facilitate this 50% goal.

18.2.2 The parties also recognize and support the City's commitment to provide opportunities for participation on the Project to Stockton businesses through the City's Local Business Preference Ordinance. In furtherance of this commitment, the parties agree that such

Stockton contractors and subcontractors awarded work on the Project may request by name, and the Local Union will honor, referral of persons who have applied to the Local Union for Project work, and who demonstrate the following qualifications:

- (1) possess any license required by state or federal law for the Project work to be performed;
 - (2) have worked a total of at least two thousand (2,000) hours in the construction craft during the prior two (2) years;
 - (3) were on the Contractor's active payroll for at least ninety (90) out of the one hundred and twenty (120) calendar days prior to the contract award;
 - (4) have the ability to perform safely the basic functions of the applicable trade;
- and
- (5) are Stockton residents.

The Union will refer to such Contractor one journeyman employee from the hiring hall out-of-work list for the affected trade or craft, and will then refer one of such Contractor's "core" employees as a journeyman and shall repeat the process, one and one, until such Contractor's crew requirements are met or until such Contractor has hired five (5) "core" employees, whichever occurs first. Thereafter, all additional employees in the affected trade or craft shall be hired exclusively from the hiring hall out-of-work list(s). For the duration of the Contractor's work, the ratio shall be maintained and when the Contractor's workforce is reduced, employees shall be reduced in the same ratio of core employees to hiring hall referrals as was applied in the initial hiring.

18.2.3 The Contractor shall notify the appropriate Union of the name and social security number of each direct hire and each direct hire shall register with the Union's hiring hall and comply with Article VII before commencing Project work. If there is any question regarding an employee's eligibility under Section 18.2, the City, at a Union's request, shall obtain satisfactory proof of such from the Contractor.

18.3 Priority Apprenticeship and Workforce Development

18.3.1 Recognizing the need to develop adequate numbers of competent workers in the construction industry, the Contractor(s)/Employer(s) shall employ apprentices of a California State approved Joint Apprenticeship Program in the respective crafts to perform such work as is within their capabilities and which is customarily performed by the craft in which they are indentured. The apprentice ratios will be in compliance with the applicable provisions of the California Labor Code and Prevailing Wage Rate Determination.

18.3.2 The parties agree to a goal that 50% of apprentices employed on the Project shall be residents of the City of Stockton or other Local Area Residents. In achieving this goal, at-risk youth who reside in the following zip codes within the City of Stockton, shall be given priority in the apprenticeship recruitment process: 95202, 95203, 95204, 95205, and 95206. If sufficient numbers of Stockton residents are not available, then a good faith effort will be made by the Unions to utilize residents of San Joaquin County. All apprentices referred to Contractors under this

Agreement shall be enrolled in State of California approved Joint Apprenticeship Programs. Subject to any legal restrictions, the parties agree to a goal that apprentices will perform twenty percent (20%) of the total craft hours worked on the Project unless an applicable Master Agreement provides for a greater percentage. The Unions agree to cooperate with the Contractors in furnishing apprentices as requested and they shall be properly supervised and paid in accordance with the provisions of the applicable Master Agreement.

18.3.3 The Contractors and Unions shall make good faith efforts to reach the apprenticeship goals set forth in this Section 18.3 through the utilization of normal hiring hall and apprentice procedures and, when appropriate, the identification of potentially qualified apprentices through community-based organizations working in collaboration with the apprentice programs. The Unions are committed to working with the Contractors and community based organizations to achieve these goals. At least annually, the Unions and the City will each conduct a Community Career Fair to provide at-risk youth, veterans and others an opportunity to learn about each craft and the process for entering their apprenticeship program.

18.4 Good Faith Efforts. A Contractor or subcontractor must take the following good faith steps to demonstrate that it has made every effort to reach the Local Hire, Priority Apprenticeship and Workforce Development Program goals of the City. The Contractor or subcontractor shall attend scheduled Pre-Job meetings held under this Agreement and shall submit written workforce projections and projected work hours on a craft-by-craft basis.

18.4.1 Within seven (7) calendar days after Notice to Proceed, the Contractor or subcontractor shall meet with the Unions and the City to present its plan for reaching the Local Hire, Priority Apprenticeship and Workforce Development Program goals.

18.4.2 The Contractor or subcontractor shall notify the Project Manager of the City by U.S. Mail or electronic mail if a Union hiring hall cannot, upon request by the Contractor or subcontractor, dispatch Local Area Residents to the Project. It shall be the responsibility of the Contractor or subcontractor to retain all evidence of such good faith efforts.

18.4.3 The Contractor or subcontractor may use the "Name Call", "Rehire" or other available hiring hall procedures to reach the goals of this Article XVIII.

18.5 Enforcement, Compliance and Reporting

18.5.1 Contractors will be required to submit Certified Weekly Payrolls to the City along with monthly workforce utilization reports documenting the Contractor's compliance with the requirements described in this Article. At a minimum, the monthly reports must include: 1) data on Stockton and Local Area Residents work hour utilization on the Project and Local Area Residents; and 2) documentation showing any requests made to the Union dispatchers for Stockton residents and the Union's response to the request.

18.5.2 The City staff shall monitor the operation of the Local Hire, Priority Apprenticeship and Workforce Development Program and shall consider allegations of non-compliance with the goals stated in this Article. If there is a determination by the City that a Contractor or subcontractor has not complied with the goals or demonstrated good faith efforts to


do so, the City and the Contractor or subcontractor shall meet and confer in order to identify necessary actions to resolve the issue and ensure a good faith effort to achieve the objectives of this Article.

18.5.3 For any Project subject to this Agreement, the Local Hire, Priority Apprentice and Workforce Development Program requirements of this Article shall apply in lieu of the requirements of Stockton Municipal Code Section 3.68.095 and no separate compliance with Section 3.68.095 will be required of the Contractors/Employers working on the Project.

ARTICLE
XIX TERM

19.1 This Agreement shall become effective 30 days after the day the City Council takes action to authorize its execution, and it shall continue in full force and effect for a period of three (3) years, at which time this Agreement may be considered for extension or renewal. The terms of this Agreement shall apply to any Project that is bid or solicited after the effective date and before the expiration of this Agreement. The Agreement shall continue to apply to any Project subject to this Agreement until the completion of all Covered Work on the Project.

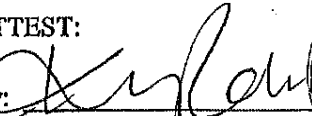
CITY OF STOCKTON



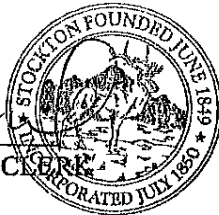
Name: KURT O. WILSON
Title: CITY MANAGER


Date: 8/24/16

ATTEST:

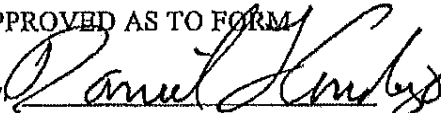
By: 

BONNIE PAIGE, CITY CLERK



APPROVED AS TO FORM
By: 

JOHN M. LUEBBERKE
CITY ATTORNEY

APPROVED AS TO FORM
By: 

DANIEL CARDOZO

Title: ATTORNEY AT SAN JOAQUIN BTC

SAN JOAQUIN BUILDING AND CONSTRUCTION TRADES COUNCIL, AFL-CIO COUNCIL

Name:
Title:

Date: _____

do so, the City and the Contractor or subcontractor shall meet and confer in order to identify necessary actions to resolve the issue and ensure a good faith effort to achieve the objectives of this Article.

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CITY OF STOCKTON

Name: KURT O. WILSON
Title: CITY MANAGER

Date: _____

ATTEST:

APPROVED AS TO FROM

By: _____
BONNIE PAIGE, CITY CLERK

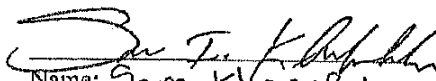
By: _____
JOHN M. LUEBBERKE
CITY ATTORNEY

APPROVED AS TO FORM

By: _____
DANIEL CARDOZO

Title: _____

SAN JOAQUIN BUILDING AND CONSTRUCTION TRADES COUNCIL, AFL-CIO COUNCIL


Name: Sam Kharoufeh
Title: Secretary/Treasurer

Date: 8/24/16

UNIONS

Daniel D. Chivello
Electrical Workers # 595.

Rick
Sheet Metal Workers # 104

Mark Sloan
Boilermakers # 549

Mark Sloan
Cement Masons # 400

Mark Sloan
District Council # 16

Chris Gray
Heat & Frost Insulators & Asbestos # 16

Bill Evans
Iron Workers # 378

Miguel Siqueira
Underground Utility/Landscape # 355

Joseph D. Tolack
Sign & Display # 510

James Quinn
Operating Engineers # 3

Mark Bell
Northern California Carpenters Regional Council on behalf of itself and its affiliated local Unions

Keith Smith
Plasterers and Cement Masons # 300

William Taylor
Plumbers and Pipefitters # 442

ON BEHALF OF BUSINESS MANAGER SHAWN BAYBICK, BUSINESS AGENT Mark Water
Road Sprinkler Fitters # 669

Mark
Roofers and Water proofers # 81

Karl Rines
Iron Workers # 116

Bill
Laborers # 73

Mark
Teamsters # 439

Addendum A

**CITY OF STOCKTON COMMUNITY WORKFORCE AND TRAINING AGREEMENT
AGREEMENT TO BE BOUND**

The undersigned, as a Contractor or Subcontractor, including construction material trucking company/entity, (CONTRACTOR) on the City of Stockton Project, (hereinafter PROJECT), for and in consideration of the award to it of a contract to perform work on said PROJECT, and in further consideration of the mutual promises made in this Community Workforce and Training Agreement (hereinafter AGREEMENT), a copy of which was received and is acknowledged, hereby:

(1) Accepts and agrees to be bound by the terms and conditions of the AGREEMENT for this Project, together with any and all amendments and supplements now existing or which are later made thereto:

(2) The CONTRACTOR agrees to be bound by the legally established local trust agreements designated in the applicable Schedule A as set forth in Article IV of this AGREEMENT.

(3) The CONTRACTOR authorizes the parties to such local trust agreements to appoint trustees and successor trustees to administer the trust funds and hereby ratifies and accepts the trustees so appointed as if made by the CONTRACTOR;

(4) Certifies that it has no commitments or agreements which would preclude its full and complete compliance with the terms and conditions of said AGREEMENT.

(5) Agrees to secure from any CONTRACTOR(S) (as defined in said AGREEMENT) which is or becomes a subcontractor (of any tier) to it, a duly executed Agreement to be Bound in form identical to this document.

(6) This Agreement to be Bound constitutes a subscription agreement to the extent of its terms. However, the undersigned agrees to execute a separate Subscription Agreement(s) or contributing employer agreement for Trust Funds when such Trust Fund(s) requires such document(s).

Date: _____

Name of Contractor

(Name of Contractor Representative)

(Authorized Officer & Title)

CSLB # or Motor Carrier Permit

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**COMMUNITY WORKFORCE AND TRAINING AGREEMENT
COMPLIANCE DOCUMENTATION**

Monthly Workforce Utilization Report
MM/DD/YYYY through MM/DD/YYYY

For

PROJECT NAME
PROJECT NO.

CITY OF STOCKTON
MUNICIPAL UTILITIES DEPARTMENT

General Information

The Prime Contractor and every subcontractor shall complete this page and the accompanying forms to be submitted monthly.

Project Name: _____

Project Number: _____

Contract Date: _____

Contractor: _____

Address: _____

City: _____ **STATE:** _____ **ZIP:** _____

Phone: _____

Contractor's License Number: _____

Type of Contractor's License (s): _____

SUMMARY SHEET FOR LOCAL WORKFORCE UTILIZATION

TABLE 1

ITEM	DESCRIPTION	HOURS
A	Total hours performed at the jobsite ($\Sigma 2 + \Sigma 3$)	
B	Labor hours performed at the jobsite by Stockton Residents ($\Sigma 1$)	
C	Labor hours performed by Local Area (San Joaquin) Residents ($\Sigma 2$)	
D	Labor hours performed at the jobsite by Apprentices ($\Sigma 5 + \Sigma 6$)	
E	Labor hours performed at the jobsite by Stockton Apprentices ($\Sigma 4$)	
F	Labor hours performed by Local Area (San Joaquin) Apprentices ($\Sigma 5$)	

Local Hire Requirements:

$$\begin{aligned} \text{Primary Goal} &= \frac{\mathbf{B}}{\mathbf{A}} \times 100\% \\ &= \underline{\hspace{2cm}}\% \text{ must be equal to or greater than } 50\% \end{aligned}$$

If the primary goal of 50% is not achieved, provide as an attachment, documentation showing any requests made to the Union dispatchers for Stockton residents and the Union's response to the request.

$$\begin{aligned} \text{Secondary Goal} &= \frac{\mathbf{C}}{\mathbf{A}} \times 100\% \\ &= \underline{\hspace{2cm}}\% \text{ must be equal to or greater than } 50\% \end{aligned}$$

State of California, Department of Industrial Relations, Division of Apprenticeship Standards Requirements:

$$\begin{aligned} &\frac{\mathbf{D}}{\mathbf{A}} \times 100\% \\ &= \underline{\hspace{2cm}}\% \text{ must be equal to } 20\% \end{aligned}$$

Priority Apprenticeship and Workforce Development Requirements:

$$\begin{aligned} \text{Primary Goal} &= \frac{\mathbf{E}}{\mathbf{D}} \times 100\% \\ &= \underline{\hspace{2cm}}\% \text{ must be equal to or greater than } 50\% \end{aligned}$$

If the primary goal of 50% is not achieved, provide as an attachment, documentation showing any requests made to the Union dispatchers for Stockton residents and the Union's response to the request.

$$\begin{aligned} \text{Secondary Goal} &= \frac{\mathbf{F}}{\mathbf{D}} \times 100\% \\ &= \underline{\hspace{2cm}}\% \text{ must be equal to or greater than } 50\% \end{aligned}$$

BREAKDOWN OF WORK HOURS PERFORMED AT THE JOBSITE

TABLE 2

Employee Name *	Union	Zip Code of Residence	Employee Residency					
			Stockton Resident		S.J. County (Local Area) Resident		Neither	
			<i>Check, if Yes</i>	<i>Number of Hours Worked</i>	<i>Check, if Yes</i>	<i>Number of Hours Worked</i>	<i>Check, if Yes</i>	<i>Number of Hours Worked</i>
TOTAL				Σ1	Σ2		Σ3	

If apprentice, please indicate with an asterisk (*)

Stockton Resident means a resident of the City of Stockton as defined by Stockton Municipal Code Section 3.68.095 (l) (3).

Local Area Resident means any Stockton Resident or any individual domiciled within the boundaries of San Joaquin County.

You may be required to provide supporting documentation for proof of residency.

Priority zip codes are: 95202, 95203, 95204, 95205, and 95206.

BREAKDOWN OF WORK HOURS PERFORMED AT THE JOBSITE BY APPRENTICES

TABLE 3

Trade/Classification	Number of Journeymen Hours	Number of Apprentices Hours	Apprentice Residency					
			Stockton Resident		S.J. County (Local Area) Resident		Neither	
			<i>Check, if Yes</i>	<i>Number of Hours Worked</i>	<i>Check, if Yes</i>	<i>Number of Hours Worked</i>	<i>Check, if Yes</i>	<i>Number of Hours Worked</i>
TOTAL			Σ4		Σ5		Σ6	

Stockton Resident means a resident of the City of Stockton as defined by Stockton Municipal Code Section 3.68.095(1)(3).

Local Area Resident means any Stockton Resident or any individual domiciled within the boundaries of San Joaquin County.

I declare under the penalty of perjury that the foregoing information is true and correct.

By giving my signature below, I acknowledge that I have met the requirements of the City of Stockton's Community Workforce and Training Agreement.

I understand this information is subject to audit verification, and I acknowledge and am hereby advised that upon, and because of, a finding of non-compliance with the Community Workforce and Training Agreement, the City may determine that I and/or my firm is not a responsible bidder on future projects.

Owner/Authorized Representative (Signature)

Name of Firm

Name and Title (Print)

Date

3.0 Labor, Working Hours:

- 3.1. No Work shall be done between **[6:00 p.m. and 7:00 a.m.]** without permission of the City. However, emergency work may be done without prior permission.
- 3.2. Night Work may be undertaken as a regular procedure with the permission of the City; such permission, however, may be revoked at any time by the City if Contractor fails to maintain adequate equipment and supervision for the proper prosecution and control of the Work at night.

4.0 Services, Materials, and Equipment:

A. Interfaces to Equipment, Instruments, and Other Components:

1. The drawings, specifications, and overall design are based on preliminary information furnished by various equipment manufacturers which identify a minimum scope of supply from the manufacturers. This information pertains to, but is not limited to, instruments, control devices, electrical equipment, packaged mechanical systems, and control equipment provided with mechanical systems.
2. Provide all material and labor needed to install the actual equipment furnished, and include all costs to add any additional conduit, wiring, terminals, or other electrical hardware to the work, which may be necessary to make a complete, functional installation based on the actual equipment furnished. Make all changes necessary to meet the manufacturer's wiring requirements.
3. Submit all such changes and additions to the Construction Manager for acceptance in accordance with the General Conditions.
4. Review the complete set of drawings and specifications to ensure that all items related to the electrical power and control systems are completely accounted for. Include any such items that appear on drawings or in specifications from another discipline in the scope of Work.

B. Until Substantial Completion of the Work is acknowledged by the City, Contractor shall have the responsible charge and care of the Work and of materials to be used herein, including materials for which Contractor has received partial payment or materials which have been furnished by the City, and shall bear the risk of injury, loss, or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the nonexecution of the Work.

C. Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the Work or the materials occasioned by any cause before the Work's completion and acceptance and shall bear the expense thereof. Where necessary to protect the Work or materials from damage, Contractor shall, at Contractor's own expense, provide suitable drainage and erect such temporary structures or rent such structures as are necessary to protect the Work or materials from damage. The suspension of the Work or the granting of an extension of time from any cause whatever shall not relieve Contractor of Contractor's responsibility for the Work and materials as specified herein.

D. When the quality of a material, process, or article is not specifically set forth in the Contract Documents, the best available quality of the material, process, or article shall be provided.

E. Delivery and Inspection:

1. Deliver products in undamaged condition, in manufacturer's original container or packaging with identifying labels intact and legible. Include date of manufacture on label.

*****END OF SECTION*****

SECTION 00810 - MODIFICATIONS TO GENERAL CONDITIONS

NONE

*****END OF SECTION*****

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SECTION 00820 - LIABILITY AND INSURANCE REQUIREMENTS

Exhibit B: Insurance Requirements for Construction Contracts

1.0 INSURANCE REQUIREMENTS

Contractor shall procure and maintain for the duration of the contract, *and for 5 years thereafter*, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

MINIMUM SCOPE AND LIMIT OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than **\$2,000,000** per accident for bodily injury and property damage.
3. **Workers' Compensation** insurance as required by the State of California, with Statutory Limits, and Employers' Liability insurance with a limit of no less than **\$1,000,000** per accident for bodily injury or disease.
4. **Surety Bonds** as described below.

If the contractor maintains broader coverage and/or higher limits than the minimums shown above, the City of Stockton requires and shall be entitled to the broader coverage and/or the higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City of Stockton.

Self-Insured Retentions

Self-insured retentions must be declared to and approved by the City of Stockton. The City of Stockton may require the Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City of Stockton. The CGL and any policies, including Excess liability policies, may not be subject to a self-insured retention (SIR) or deductible that exceeds \$25,000 unless approved in writing by City of Stockton. Any and all deductibles and SIRs shall be the sole responsibility of Contractor or subcontractor who procured such insurance and shall not apply to the Indemnified Additional Insured Parties. City of Stockton may deduct from any amounts otherwise due Contractor to fund the SIR/deductible. Policies shall NOT contain any self-insured retention (SIR) provision that limits the satisfaction of the SIR to the Named Insured. The policy must also provide that

Defense costs, including the Allocated Loss Adjustment Expenses, will satisfy the SIR or deductible. City of Stockton reserves the right to obtain a copy of any policies and endorsements for verification.

Other Insurance Provisions

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

1. **The City of Stockton, its officers, officials, employees, and volunteers are to be covered as additional insureds** on the CGL policy 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 and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or **both** CG 20 10, CG 20 26, CG 20 33, or CG 20 38; **and** CG 20 37 forms if later revisions used). Additional insured Name of Organization shall read "City of Stockton, its officers, officials, employees, and volunteers." Policy shall cover City of Stockton, its officers, officials, employees, and volunteers for all locations work is done under this contract.
2. For any claims related to this project, the **Contractor's insurance coverage shall be primary and non-contributory** insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the City of Stockton, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City of Stockton, its officers, officials, employees, or volunteers shall be in excess of the Contractor's insurance and shall not contribute with it. This requirement shall also apply to any Excess or Umbrella liability policies. The City of Stockton does not accept endorsements limiting the Contractor's insurance coverage to the sole negligence of the Named Insured.
3. Each insurance policy required by this clause shall provide that coverage shall not be canceled, except with notice to the City of Stockton.

Claims Made Policies (Professional & Pollution only)

If any coverage required is written on a claims-made coverage form:

1. The retroactive date must be shown, and this date must be before the execution date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
3. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor must purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work.
4. A copy of the claims reporting requirements must be submitted to the City of Stockton for review.
5. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

Umbrella or Excess Policies

The Contractor may use Umbrella or Excess Policies to provide the liability limits as required in this agreement. This form of insurance will be acceptable provided that all of the Primary and Umbrella or Excess Policies shall provide all of the insurance coverages herein required, including, but not limited to, primary and non-contributory, additional insured, Self-Insured Retentions (SIRs), indemnity, and defense requirements. The Umbrella or Excess policies shall be provided on a true "following form" or broader coverage basis, with coverage at least as broad as provided on the underlying Commercial General Liability insurance. No insurance policies maintained by the Additional Insureds, whether primary or excess, and which also apply to a loss covered hereunder, shall be called upon to contribute to a loss until the Contractor's primary and excess liability policies are exhausted.

Acceptability of Insurers

Insurance is to be placed with insurers authorized to conduct business in the state with a current A.M. Best rating of no less than A: VII, unless otherwise acceptable to the City of Stockton.

Waiver of Subrogation

Contractor hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation. **The Workers' Compensation policy shall be endorsed with a waiver of subrogation** in favor of the City of Stockton for all work performed by the Contractor, its employees, agents and subcontractors.

Verification of Coverage

Contractor shall furnish the City of Stockton with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause and **a copy of the Declarations and Endorsements Pages of the CGL and any Excess policies listing all policy endorsements**. All certificates and endorsements and copies of the Declarations & Endorsements pages are to be received and approved by the City of Stockton before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The City of Stockton reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time. City of Stockton reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Subcontractors

Contractor shall require and verify that all subcontractors maintain insurance meeting all requirements stated herein, and Contractor shall ensure that City of Stockton is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a form at least as broad as CG 20 38 04 13.

Duration of Coverage

CGL & Excess liability policies **for any construction related work, including, but not limited to, maintenance, service, or repair work**, shall continue coverage for a minimum of 5 years for Completed Operations liability coverage. Insurance must be maintained and evidence of insurance must be provided **for at least five (5) years after completion of the contract of work**.

Surety Bonds

Contractor shall provide the following Surety Bonds:

1. Bid Bond
2. Performance Bond

3. Payment Bond

4. Maintenance Bond

The Payment Bond and the Performance Bond shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. If the warranty period specified in the contract is for longer than one year a Maintenance Bond equal to 10% of the contract price is required. Bonds shall be duly executed by responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.

Special Risks or Circumstances

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

Certificate Holder Address

The address for mailing certificates, endorsements and notices shall be:

City of Stockton
Its Officers, Officials, Employees and Volunteers
400 E Main Street, 3rd Floor – HR
Stockton, CA 95202

*****END OF SECTION*****

SECTION 01010 - SUMMARY OF WORK

1.0 **WORK COVERED BY CONTRACT DOCUMENTS**

The work shall be performed in accordance with the intent of the Contract Documents as stated in the Contract Documents, excluding only the Work indicated or specified to be provided by the City or others under separate contract or other arrangement.

2.0 **CONTRACT ADMINISTRATION**

The following are designated:

2.1 **Name of Construction Manager**

Amin Kazemi, P.E., M.S.
Associate Civil Engineer
Municipal Utilities Department
Stockton, CA 95206
(209) 937-8716

2.2 **Name of Design Consultant**

Richard C. Smith, PE
HCS Engineering, Inc
4512 Feather River Drive #F
Stockton, CA 95219
209-478-8270

2.3 **Name of City's Representative**

Gemma Biscocho, P.E.
Senior Civil Engineer
Municipal Utilities Department
Stockton, CA 95206

3.0 **TIME ALLOWED FOR COMPLETION**

In accordance with the provisions of Paragraph 00700-6.2, Time of Completion, substantial completion of this project shall be completed within **one hundred fifty (150)** consecutive calendar days from the effective date of the Notice to Proceed and final completion shall be achieved within **thirty (30)** consecutive calendar days following substantial completion.

4.0 DAMAGES FOR DELAYS

In accordance with the provisions of Paragraph 00700-6.5, Liquidated Damages, for the period of time that any portion of the work remains unfinished after the time fixed for substantial completion, and for the period of time that any portion of the work remains unfinished after the time fixed for final completion, in the Contract documents, as modified by extensions of time granted by the City, it is understood and agreed by the Contractor and the City that the Contractor shall pay the City **One Thousand Dollars (1,000)** per day liquidated damages. Should work remain unfinished after the time fixed for both substantial completion and final completion, the liquidated damages shall remain **One Thousand Dollars (1,000)** per day.

5.0 WEATHER DAYS

In accordance with the provisions of Paragraph 00700-6.4.2.c., Weather Delays, an allowance of **Ten (10)** calendar days of weather caused delay is provided.

6.0 WORK SEQUENCE AND CONSTRAINTS

Refer to Section 01040, Coordination.

7.0 OCCUPANCY REQUIREMENTS

Refer to Section 01040, Coordination.

8.0 CITY FURNISHED MATERIALS

8.1 **Plans and Specifications** - At the Contractor's request, the City will deliver original documents to, and pickup up from, a duplication service in the Stockton metropolitan area. The Contractor shall be responsible for the cost of the additional copies, and for picking up such copies. At no time will the City make the original documents available to the Contractor.

9.0 TRENCH EXCAVATION

The maximum amount of trench remaining open without backfill shall be Zero (0) feet. No trench in public areas shall be left open during periods when the Contractor is not at the site of work, trenches in these areas shall either be backfilled and temporarily paved, where applicable, or covered with steel trench plates as specified in the technical specifications. No more than two consecutive trench plates will be allowed at any time when the Contractor is not at the site of work.

10.0 WORK UNDER OTHER CONTRACTS

The City's Utility Facilities are critical facilities that operate twenty-four hours each and every day. During the life of this contract, other contracts may be allowed to construct, operate, maintain, or repair facilities in and/or around the project sites. The Contractor shall refer to the provisions pertaining to cooperation and coordination elsewhere in these Contract Documents and shall coordinate with the City to minimize interferences to or caused by other contracts.

Other work anticipated to occur during the life of this project includes, but is not limited to, the following: N/A

11.0 CONTRACTOR'S WORK PERCENTAGE

The minimum portion of the work to be performed by the Contractor's forces shall be Fifty One percent (51%) for this contract.

12.0 UNDERGROUND FACILITIES

The Contractor is responsible for coordinating all project documentation, including but not necessarily limited to, the Contract Documents and existing record drawings for the determination of the location of all underground facilities.

The Contractor shall exercise care in all excavations to avoid damage to existing underground facilities. This shall include potholing or hand digging in those areas where underground facilities are known to exist, prior to installation work, until they have been sufficiently located to avoid damage to the facilities.

Prior to fabrication, the Contractor shall verify the location and elevations of existing underground facilities which the Contractor is connecting to.

No additional compensation shall be provided to the Contractor for compliance with the provisions of this section or for the damage and repair of facilities due to the lack of such care.

13.0 LEGAL AND CITY HOLIDAYS

New Years Day	Martin Luther King's Birthday
Lincoln's Birthday	President's Day
Cesar Chavez Observance	Memorial Day
Fourth of July	Labor Day
Columbus Day	Veteran's Day
Thanksgiving and the Day after	Christmas

The City will have limited staff and support capabilities available during these holidays. Requests for inspection or other City services on holidays will be paid for by the Contractor at the established holiday pay scale rate for the services required. The City shall determine the appropriate level of response and support needed in terms of any request.

*****END OF SECTION*****

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SECTION 01015 – GENERAL PROVISIONS

1.0 GENERAL

1.1 Description

This Section covers general provisions and requirements for the Work and is supplementary to the Standard Specifications and the Conditions of the Contract.

1.2 Guarantee

The Contractor shall guarantee that the equipment, materials and workmanship furnished under this Contract will be as specified and will be free from defects for a one-year guarantee period, starting from the date of Final Completion of the Work, unless a longer period is prescribed by law or required by special provisions elsewhere in the Contract Documents and except as otherwise noted herein. If a specific item (or items) of equipment or material cannot be utilized by the Owner at Final Completion because the Work is incomplete or defective, the guarantee for that item (or items) shall begin when the Owner is provided beneficial use. Beneficial use for any such items shall be provided prior to Final Completion. In addition, the equipment furnished by the Contractor shall be guaranteed to be free from defects in design. Within the guarantee period and upon notification of the Contractor by the Owner, the Contractor shall promptly make all needed adjustments, repairs or replacements arising out of defects, failure or abnormalities which, in the judgment of the Owner, become necessary during such period. The cost of all materials, parts, labor, transportation, supervision, special tools and supplies required for correction of defects, failure or abnormalities shall be paid by the Contractor. In the event warranty work involves repair or replacement of parts, machine work, or any other work which affects the equipment or materials installed under this Contract, the Contractor's guarantee on such items and work shall be extended for a period of one year from the date of installation of said items, or the performance of said work. If, within ten (10) days, unless specified otherwise by the Owner, after the Owner gives the Contractor notice of a defect, failure, or abnormality of the Work, the Contractor neglects to make the necessary repair or adjustments, the Owner may make the repair or adjustments or order the Work to be done by a third party, with the cost of the Work to be paid by the Contractor. In the event of an emergency where, in the judgment of the Owner, delay would cause serious loss or damage, repairs or adjustments may be made by the Owner, without giving notice to the Contractor, and the cost of the work shall be paid by the Contractor.

1.3 Contractor's License

The Contractor for this Project shall possess at the time of bid, and maintain throughout the duration of the Contract, a valid California Class C-10 Contractor's License.

1.4 Patents

Royalties and fees from patents covering materials, articles, apparatus, devices, or equipment (as distinguished from processes) used in the Work, shall be included in the Contract amount. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he shall be liable for any damage or claims for patent infringements. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted against the Owner for infringement or alleged infringement of any patents involved in the Work and, in case of an award of damages, the Contractor shall pay such award. Final payment to the Contractor by the Owner

will not be made while any suit or claim remains unsettled. The Contractor, however, will not be held liable for the defense of any suit or other proceeding, nor the payment of any damages or other costs for the infringement of any patented process required by the Contract Documents; except if the Contractor has information that the process so required is an infringement of a patent, the Contractor shall be liable for any damages or claims in connection therewith unless he promptly notifies the Owner of such infringement.

2.0 PRODUCTS (Not applicable in this Section)

3.0 EXECUTION

3.1 Public Complaints.

The Contractor shall respond to public complaints when requested by the Owner.

3.2 Guarantees and Warranties

Except as herein specified, all guarantees and warranties shall conform with applicable requirements of Sections 7-1.23 and 7-1.24 of the Standard Specifications, entitled "Guarantee (General)" and "Guarantee (Specific)," respectively.

3.3 Precedence of Contract Documents

- A. Section 00700, Paragraph 1.2 applies.
- B. Detail Drawings take precedence over small-scale drawings and full-size Drawings shall be followed in preference to both. Full-size Drawings take precedence over reduced-size Drawings.

3.4 Care and Protection of Property

If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect or misconduct in the execution of the Work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition, as determined by the City, which is similar or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the Owner. The Contractor is responsible for the following at his own expense:

- A. To conduct his operation in a manner which will cause the least amount of damage, inconvenience and interference with the normal use of any public or private property. Such operations shall be confined to the least possible space and shall be accomplished in a neat and workmanlike manner, taking care not to unnecessarily disturb or damage adjoining property, disturbing only those trees, shrubbery, floral pieces or other landscaping planting, fences, buildings, structures or other facilities of any kind or description in the manner and as directed by the Owner. Remove all transplantable trees, shrubs and bushes that may be damaged or destroyed by construction and reset them after construction. Re-vegetation of disturbed property shall be accomplished in such manner as required to return the property to its prior condition or better.
- B. To store his apparatus, materials, supplies, and equipment in such orderly fashion at the site of the Work as will not unduly interfere with the progress of his Work or the work of any other contractor.

- C. To provide suitable storage facilities for all materials which are liable to injury by exposure to weather, theft, breakage, or otherwise. If the Owner determines that suitable storage for certain materials is not being provided, he may direct the Contractor to remove it from the job site, or to store it properly at the job site.
- D. To place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work.
- E. To clean up not less than at the end of each workday, all refuse; rubbish, scrap materials, and debris caused by his operations, to the end that always the site of the Work shall present a neat, orderly and workmanlike appearance. More frequent clean-up shall be performed as required to maintain access to all other Owner facilities still in operation.
- F. To remove and dispose of off-site in accordance with all Federal, State and local regulations, all surplus material, false-work, temporary structures, including foundations thereof, plants of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition before final payment.
- G. To affect all cutting, fitting or patching of his Work required to make the same to conform to the Drawings and Specifications and, except with the consent of the Owner, not to cut or otherwise alter the work of any other contractor.
- H. To close work access during time when active construction work is not ongoing.

3.5 Field Check of Existing Improvements

It shall be the responsibility of the Contractor to check all dimensions, elevations, and location of existing structures, utilities, pipelines, grades or other existing items affected by or affecting the Work under this Contract, prior to the start of construction and ordering of materials and equipment affected thereby. The Contractor shall be solely responsible for determining the extent and cost of all removal and salvage operations. The Contractor shall notify the Owner if existing conditions are not as shown on drawings.

3.6 Protection of Existing Improvements

- A. In the performance of the Work contemplated under this Contract, the Contractor shall take all precautions necessary, including but not limited to those described herein, to ensure that all existing improvements not specifically indicated for removal are not damaged or interfered with in any way. Should the Contractor disturb or damage such improvements without authorization, all expense for replacement or repair of the existing improvements so disturbed or damaged shall be borne by the Contractor. The Owner has diligently attempted to correctly locate and show the existing utilities, pipelines and substructures in the vicinity of the Work, but the Owner does not guarantee that there are not improvements other than those shown, nor that the locations shown are entirely correct. Failure of the Owner to show all the existing utilities, pipelines and substructures and their locations shall not be a basis for claim for extra work. The Contractor shall be held responsible for all damage to existing utilities, pipelines and substructures whether shown or not.
- B. Notify Underground Service Alert (U.S.A.), telephone 800-642-2444, at least forty-eight (48) hours prior to performing any excavation for this Work. In coordination with the appropriate authorities probe, pothole, or otherwise ascertain the exact location of all existing underground improvements in advance of excavation such that no damage to these improvements will occur.

In the event interferences in construction are encountered with the various existing improvements, the Owner reserves the right to appropriately change the alignment and grade of the facilities. Additional materials required to accommodate such change shall be paid in accordance with unit prices as prescribed in Section 9 of the Standard Specifications.

3.7 Cooperation With Others

- A. The Contractor is hereby advised that work on other contracts within or adjacent to his contract limits may already be in progress. Contracts for construction may also be subsequently awarded to others and because of relocation and construction of various utilities he may not have exclusive occupancy of the territory within or adjacent to the limits of the Contract.
- B. In case of interferences between the operations of different construction contractors, the Owner will determine the work priority of each contractor and the sequence of work necessary to expedite the completion of the entire project. In all such cases, the decision of the Owner shall be accepted as final. The temporary delay of the Contractor's work due to such circumstances shall not be considered as justification for any claims for additional compensation.
- C. The Contractor shall coordinate his activities with the Owner as they relate to utility shutdowns. The Plant must operate 24 hours per day and only the Owner's staff will be permitted to operate valves or other utilities.

3.8 Unfavorable or Hazardous Construction Conditions

During unfavorable weather, wet ground, or other unsuitable construction conditions, the Contractor shall confine his operation to work, which will not be affected adversely thereby. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof unless special means or precautions are taken by the Contractor to perform the Work in a proper and satisfactory manner as determined by the Owner.

3.9 Testing and Substantial and Final Completion

See Section 01660.

***** END OF SECTION *****

SECTION 01025 - MEASUREMENT AND PAYMENT

1.0 GENERAL

1.1. Measurement of Quantities

Measurements of the completed work shall be in accordance with, and by instruments and devices calibrated to United States Standard Measures and the units of measurement for payment, and the limits thereof, shall be made as shown on the Plans, Specifications, General Requirements, and Supplementary Conditions.

1.2 Units of Measurement

Measurements shall be in accordance with U.S. Standard Measures. A pound is an avoirdupois pound. A ton is 2,000 pounds avoirdupois. The unit of liquid measure is the U.S. gallon.

1.3 Certified Weights

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

1.4 Methods of Measurement

Materials and items of work which are to be paid for based on measurement shall be measured in accordance with the method stipulated in the sections involved. In determining quantities, all measurements shall be made in a horizontal plane unless otherwise specified.

Material not used from a transporting vehicle shall be determined by the Construction Manager and deducted from the certified tag.

When material is to be measured and paid for on a volume basis and it would be impractical to determine the volume, or when requested by the Contractor in writing and approved by the Construction Manager in writing, the material will be weighed and converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Construction Manager and shall be agreed to by the Contractor before such method of measurement of pay quantities is adopted.

Full compensation for all expense involved in conforming to the above requirements for measuring and weighing materials shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional allowances will be made, therefore.

Quantities of material wasted or disposed of in a manner not called for under the Contract; or rejected loads of material, including material rejected after it has been placed by reason of failure of the Contractor to conform to the provisions of the Contract; or material not unloaded from the transporting vehicle; or material placed outside the lines indicated on the plans or given by the

Construction Manager; or material remaining on hand after completion of the Contract, will not be paid for and such quantities will be deducted from the final total quantities. No compensation will be allowed for hauling rejected material.

2.0 DESCRIPTION OF BID ITEMS

2.1. General

Bid Items 1 through 8 are presented to indicate major categories of the work for purposes of comparative bid analyses, payment breakdown for monthly progress payments. Bid items are not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item (work phase) as shown and specified.

2.2 Duration of Prices

Quoted prices accepted by the City shall be held good and in effect until the Work is completed and accepted by the City, unless modified by Change Order.

2.3 Bid Items

Compensation for all equipment, tools, materials, labor, service, travel, and incidentals, and for doing the work and all other items required to complete the Work in conformity with the Contract Documents will be included in the payment provided in this Section unless specifically excluded. No other compensation will be made except for the items listed in the Bid Proposal. Work for which no separate payment has been provided will be considered as a subsidiary obligation of the Contractor, and the cost therefore included in the applicable contract price for the item to which the work applies. All measurements of work done will be made by the Construction Manager. No adjustment in prices will be made where any quantities provided in the Item Description vary from actual quantities, unless the work described and shown in the Contract Documents has been modified by the City.

- 2.3.1 **Bid Item 1 - Mobilization, Demobilization, Bonds, Permits, and Insurance** – This item includes preparatory work and operations, including but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; for the marshaling of equipment; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site, including obtaining the bonds, insurance policies, and permits required by the Contract Documents for this Project.

Payment for Bid Item 1 will be in the amount shown in the Bid Schedule and will be made on a lump sum basis at one hundred percent (100%) of the indicated amount contingent upon the Contractor furnishing, and the Construction Manager's acceptance of, the Construction Schedule, the Contractor's Cost Breakdown, and proof of acquisition of all required bonds, insurance, and permits. Payment for Bid Item 1 shall be subject to retention in accordance with applicable contract requirements.

- 2.3.2 **Bid Item 2 – Demolition Items** - Bid Item 2 is a demolition item for the removal and disposal of all items as shown on Drawing Sheet No. E-3, Demolition Plan and as described in the Specifications, except for that work and items covered in Bid Items 1, and 3 through 7.

Payment for Bid Item 2 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.3 **Bid Item 3 – PG&E Underground Conduits** - Bid Item 3 is a furnish and install item as shown on the Drawings Sheet No. E2.1 and as described in the Specifications, except for that work and items covered in Bid Items 1, 2, and 4 through 7.

Payment for Bid Item 3 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.4 **Bid Item 4 – Transformer Concrete Pad, Sawcut, Trench Backfill and Patch** - Bid Item 4 is a furnish and install item as shown on the Drawings and as described in the Specifications, except for that work and items covered in Bid Items 1, 2, 3, and 5, 6, and 7.

Payment for Bid Item 4 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.5 **Bid Item 5 – New Low Voltage Transformer, Primary and Secondary Feeders** - Bid Item 5 is a furnish and install bid item to include wirings and SCADA and Instrumentation connection as shown on the Drawings and as described in the Specifications, except for that work and items covered in Bid Items 1, 2, 3, 4 and 6 and 7.

Payment for Bid Item 5 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.6 **Bid Item 6 – Test & Terminate MCC and Pump Feeders** - Bid Item 6 includes testing and termination of MCC and Pump Feeders as shown on the Drawings and as described in the Specifications, except for that work and items covered in Bid Items 1, 2, 3, 4 and 5 and 7.

Payment for Bid Item 6 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.7 **Bid Item 7 – Instruction (O & M) Manuals** - Bid Item 7 includes all labor, material, equipment and incidentals includes performing the work and payment of all related expenses necessary for providing Instruction (O & M) Manuals on all work as shown on the Drawings and as described in the Specifications.

Payment for Bid Item 7 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.8 **Bid Item 8 – Contractor's Record Drawings** - Bid Item 8 includes all labor, material, equipment and incidentals includes performance of the work necessary for the maintenance and submission of Contractor's Record Drawings as shown on the Drawings and as described in the Specifications.

Payment for Bid Item 8 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Contractor's Cost Breakdown and subject to retention in accordance with applicable contract requirements.

- 2.3.9 **Total Bid** - The total amount bid includes the summation of Bid Items 1 through 8 and represents the total price bid to provide the work as shown on the drawings and as specified.

2.4 PAYMENT FOR MOBILIZATION

- A. Limit amounts included under mobilization to the following items:

1. Moving on the site any equipment required for first month of operations.
2. Installing temporary construction power, wiring, and lighting facilities.
3. Establishing fire protection plan and safety program.
4. Developing construction water supply.
5. Providing field office trailers for the Contractor and the Construction Manager, complete with all specified furnishings and utility services including telephones.
6. Providing on-site sanitary facilities and potable water facilities as specified.
7. Arranging for and erection of Contractor's work and storage yard, employee parking facilities, and entrance road.
8. Submit all required insurance certificates and bonds.
9. Obtaining all required permits, licenses, and fees.
10. Developing construction schedule.
11. Submit preliminary schedule of values of the Work.
12. Provide and erect the project sign.
13. Post all OSHA, (state agency), Department of Labor, and all other required notices.
14. Limits of construction and clearing have been located and flagged.
15. Have Contractor's project manager and/or general superintendent on job site full-time.
16. The Construction Manager is satisfied that responsive and responsible progress on the Contract Work is under way.

- B. Furnish data and documentation to substantiate the amounts claimed under mobilization.

- C. Limit price for mobilization to no more than five percent (5%) of Contract Price.

- D. No payment for mobilization, or any part thereof, will be recommended until all mobilization items listed above have been completed.

2.5 PAYMENT FOR START-UP AND DEMOBILIZATION

- A. Total Price for start-up and demobilization shall not be less than 3 percent (3%) of Contract Price.

3.0 CONTRACTOR'S COST BREAKDOWN

Lump Sum Price Breakdown - For work to be performed for a lump sum price, the Contractor shall submit a price breakdown to the Construction Manager prior to the first payment and within ten (10) days after Notice to Proceed. The price breakdown, as agreed upon by the Contractor

and the Construction Manager, shall be used for preparing future estimates for partial payments to the Contractor, and shall list the major items of work with a price fairly apportioned to each item.

If not identified as a bid item, mobilization, overhead, bond, insurance, other general costs and profit shall be prorated to each item so that the total of the prices for all items equal the lump sum price. At the discretion of the Construction Manager, mobilization, bond and insurance costs may be provided for separately if accompanied by invoices to verify actual expenses.

The price breakdown shall be generally in the same format as the Contract specifications divisions and subdivisions, with major items of work listed individually. The price breakdown shall be by structure, civil, landscaping, or other logical division of work. The price breakdown for architectural, structural, mechanical, and electrical work shall include separate items for identifiable portions of the structures. The price breakdown shall include separate allowances for any testing and startup work required. Measurable approximate quantities of work performed by the Contractor or its subcontractors shall be provided. For quantities that are the sum of several individual quantities, backup summaries shall be provided which list the individual descriptions and quantities. These summaries will then be used to determine the quantities of work in place in subsequent progress payment requests.

The above is a statement of the intent of the Contract Documents to provide a moderate level of detail, acceptable to the Construction Manager, to allow a fair and reasonable estimate to be made of the value of work installed. The detail of the price breakdown must be sufficient to provide timely processing of the monthly progress payment request.

The price breakdown will be subject to the approval of the Construction Manager, and upon request, the Contractor shall substantiate the price for any or all items and provide additional level of detail, including quantities of work. The price breakdown shall be sufficiently detailed to permit its use by the Construction Manager as one of the bases for evaluating requests for payments. The Construction Manager shall be the sole judge of the adequacy of the price breakdown.

***** END OF SECTION *****

SECTION 01035 - MODIFICATION PROCEDURES

1.0 CHANGES IN CONTRACT PRICE

Whenever corrections, alterations, or modifications of the work under this Contract are ordered by the Construction Manager and approved by the City and increase the amount of work to be done, such added work shall be known as extra work; and when such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as work omitted.

The difference in cost of the work affected by such change will be added to or deducted from the amount of said Contract price by a fair and reasonable valuation, which shall be determined in one or more of the following ways as directed by the Construction Manager:

- a. By unit prices accepted by the City and stated in the Contract Documents.
- b. Unit prices subsequently fixed by agreement between the parties.
- c. By an acceptable lump sum proposal from the Contractor; or
- d. By Force Account (as described in Paragraph 01035-3.0, Force Account Payment, when directed in writing and administered by the City through its agents or representatives.

When required by the Construction Manager, the Contractor shall submit, in the form prescribed by the Construction Manager, an itemized breakdown with supporting data of the quantities and prices used in computing the value of any change that may be ordered.

The Construction Manager will review the Contractor's proposal for the change and negotiate an equitable adjustment with the Contractor. After there is an agreement the Construction Manager will prepare and process the Change Order and make a recommendation for action by the City. All Change Orders must be approved by the City in writing before the work can be authorized and the Change Order executed.

The prices agreed upon and any agreed upon adjustment in Contract Time shall be incorporated in the written order issued by the City, which shall be written to indicate an acceptance on the part of the Contractor as evidenced by its signature. By signature of the Change Order, the Contractor acknowledges that the adjustments to cost and time contained in the Change Order are in full satisfaction and accord, payment in full, and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by the Change Order.

2.0 NEGOTIATED CHANGE ORDERS

Under the methods described in Paragraph 01035-1.0b and 1.0c above, the Contractor shall submit substantiating documentation with an itemized breakdown of Contractor and subcontractor direct costs, including labor, material, equipment rentals, and approved services, pertaining to such ordered work in the form and detail acceptable to the Construction Manager. The direct costs shall include only the payroll cost for workers and foremen, including wages and fringe benefits as established by negotiated labor agreements or state prevailing wages. To the actual payroll cost will be added a labor surcharge which shall be the actual costs of taxes and insurance. Such labor

surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workmen, other than actual payroll cost and subsistence and travel allowances. No other fixed labor burdens will be considered, unless approved in writing by the Construction Manager.

Other direct costs include the cost of materials used and equipment delivered and installed in such work as substantiated by appropriate documents; the cost of construction machinery and equipment based on fair rental or ownership values acceptable to the Construction Manager as described in Paragraph 01035-3.0, Force Account Payment; and the cost of incidentals directly related to such work. The direct costs shall not include any 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 Site or in CONTRACTOR's principal or branch office for general administration of the Work, labor or office costs pertaining to the Contractor's managers or superintendents, its office and office facilities, or anyone not directly employed on such work, nor the cost of small tools as all such indirect costs form a part of the Contractor's overhead expense.

Under the method described in Paragraph 01035-1.0b and 1.0c the maximum percentage which will be allowed for the Contractor's combined overhead and profit will be:

a. For work by its own organization, the Contractor may add the following percentages:

1.	Direct Labor	24 percent
2.	Materials	15 percent
3.	Equipment (owned or rented)	15 percent

b. For all such work performed by a subcontractor, approved in accordance with the provisions in Section 00100-17.0 Subcontractors, said subcontractor may add the same percentages listed in (a.) above to its net costs, for combined overhead and profit. The Contractor may add up to five (5) percent of the subcontractor's net cost, before above markup. Said additional five (5) percent markup shall reimburse the Contractor for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

For all such work performed by a sub tier-subcontractor, approved in accordance with the provisions in Section 00100-17.0 Subcontractors, said sub tier-subcontractor may add the same percentages listed in (a.) above to its net costs, for combined overhead and profit. The subcontractor may add up to five (5) percent of the sub tier-subcontractor's net cost, before markup, for its combined overhead and profit. The Contractor may add up to five (5) percent of the net cost of the sub tier-subcontractor who performed the work, before markup. Said additional five (5) percent markup shall reimburse the subcontractor and the Contractor, respectively, for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a sub tier-subcontractor.

c. To the total of the actual costs and fees allowed herein under, not more than two (2) percent shall be added for additional bond and insurance other than labor insurance. The above fees represent the maximum limits which will be allowed, and they include the Contractor's and all subcontractors' indirect home office expenses and all costs for cost proposal preparation.

When both additions and credits are involved in any one change, the combined overhead and profit shall be figured based on the net increase, if any, for each area of work, i.e. direct labor, materials, equipment, and subcontractors. The amount of credit to be allowed by

the Contractor to the City for any such change which results in a net decrease in cost will be the amount of the actual net decrease and a credit in accordance with the markups allowed under the use of the method described in Paragraph 01035-3.0, Force Account Payment. The Contractor shall not claim for anticipated profits on work that may be omitted.

3.0 FORCE ACCOUNT PAYMENT

If either the amount of work or payment for a Change Order cannot be determined or agreed upon beforehand, the City may direct by written Change Order or Field Order that the work be done on a force account basis. The term "force account" shall be understood to mean that payment for the work will be done on a time and expense basis, that is, on an accounting of the Contractor's forces, materials, equipment, and other items of cost as required and used to do the work. For the work performed, payment will be made for the documented actual cost of the following:

- a. Direct labor cost for workers, including foremen, who are directly assigned to the force account work: Direct labor cost is the actual payroll cost, including wages and fringe benefits as established by negotiated labor agreements or state prevailing wages. To the actual payroll cost will be added a labor surcharge which shall be the actual costs of taxes and insurance. Such labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workmen, other than actual payroll cost and subsistence and travel allowances. No other fixed labor burdens will be considered, unless approved in writing by the City.
- b. Material delivered and used on the designated work, including sales tax, if paid for by the Contractor or its subcontractor.
- c. Equipment rental, including necessary transportation for items having a value more than One Thousand Dollars (\$1,000.00).
- d. Additional bond.
- e. Additional insurance, other than labor insurance.

To the preceding costs, there shall be added the following fees for the Contractor, subcontractor, or sub-subcontractor performing the work:

1. A fixed fee not to exceed twenty-four (24) percent of the cost of Item a above, and fifteen (15) percent of the costs of Items b and c above.
2. To the total of the actual costs and fees allowed in Items a, b, and c above, not more than two (2) percent shall be added for additional bond and insurance as the cost of Items d and e above.

For all such work performed by forces other than the Contractor's organization, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the City for such work. No additional payment therefore will be made by the City by reason of the performance of the work by a subcontractor or other forces.

The added fixed fees shall be full compensation, covering the cost of general supervision, overhead, profit, and any other general expense. The above fixed fees represent the maximum limits which will be allowed, and they include the Contractor's and all subcontractors' indirect home office expenses and all costs for cost proposal preparation and record keeping.

The City reserves the right to furnish such materials and equipment as it deems expedient and the Contractor shall have no claim for profit or added fees on the cost of such materials and equipment.

For equipment under Item c above, rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Payment shall be based on actual rental and transportation invoices but shall not exceed the monthly rate in the Cal Trans "Labor Surcharge and Equipment Rental Rates" publication. The rental cost allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, ownership, and incidental costs and no further allowances will be made for those items, unless specific agreement to that effect is made. For Contractor owned equipment, costs shall be based on either actual cost accounting records or the Cal Trans "Labor Surcharge and Equipment Rental Rates" publication. Hourly rates shall be determined by dividing the monthly rate by 176 hours.

Prior to the commencement of force account work, the Contractor shall notify the Construction Manager of its intent to begin work. Labor, equipment and materials furnished on force account work shall be recorded daily by the Contractor upon report sheets approved by the Construction Manager. The reports, if found to be correct, shall be signed by both the Contractor and Construction Manager, or inspector, and a copy of which shall be furnished to the Construction Manager no later than the working day following the performance of said work. The daily report sheet shall thereafter be considered the true record of force account work provided. If the Construction Manager, or inspector, do not agree with the labor, equipment and/or materials listed on the Contractor's daily force account report, the Contractor and Construction Manager, or inspector, shall sign-off on the items on which they agree. The Construction Manager shall then review the items of disagreement and will advise the Contractor, in writing, of its determination. If the Contractor disagrees with this determination, it shall have the right to file a claim notice as provided in Paragraph 00700-7.4.2.1, Notice. The Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of work paid for on a force account basis and the costs of other operations.

To receive partial payments and final payment for force account work, the Contractor shall submit, in a manner approved by the Construction Manager, detailed and complete documented verification of the Contractor's and any of its subcontractor's actual costs involved in the force account pursuant to the pertinent Change Order or Field Order. Such costs shall be submitted within thirty (30) days after said work has been performed.

The force account invoice shall itemize the materials used and shall cover the direct costs of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces. The invoice shall be in a form acceptable to the Construction Manager and shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and the size, type, and identification number of equipment and hours operated. Material charges shall be substantiated by valid copies of vendor's invoices.

When both additions and credits are involved in any one change, the combined overhead and profit shall be figured based on the net increase, if any. The amount of credit to be allowed by the Contractor to the City for any such change which results in a net decrease in cost will be the amount of the actual net decrease and a credit in accordance with the markups allowed under the use of the method described in this Section. The Contractor shall not claim for anticipated profits on work that may be omitted.

4.0 UNIT PRICE ADJUSTMENTS DUE TO INCREASED OR DECREASED QUANTITIES

The unit prices as stated in the bid form and as negotiated in Change Orders shall apply to one hundred (100) percent of the quantity indicated to be estimated quantity for the bid item, plus or minus twenty-five (25) percent. Adjustments in unit prices will be made in accordance with Section 9-1.06, Increased or Decreased Quantities, and 9-1.15, Changes in Character of Work, of the State of California Specifications, with the following modifications:

- a. Delete all references to "Section 9-1.04" and insert "Paragraph 01035-3.0, Force Account Payment."
- b. Delete the last paragraph (fourth paragraph) of Section 9-1.15, Changes in Character of Work.

5.0 TIME EXTENSIONS FOR CHANGE ORDERS

If the Contractor requests a time extension for the extra work necessitated by a proposed Change Order, the request must comply with the applicable requirements of Paragraph 01310-6.0, Time Impact Analyses.

6.0 CONTRACTOR CHANGE REQUESTS

Change requests may be initiated by the Contractor's Representative. Such requests must be presented in a format mutually agreeable to the Construction Manager, and shall include the following information:

- a. Reason for Request - An introductory statement which clearly identifies the need for the change; change requests which do not directly benefit the City or the project, or which are intended solely as contractual relief shall be rejected.
- b. Nature of the Request - A complete description of the requested change, its impact on the functional performance of the System, and its effect on the delivery schedule of the System.
- c. Cost or credit of the Requested Change - The total impact on cost or credit to the City for the change to the System.

7.0 VALUE ENGINEERING COST PROPOSALS

Refer to section 00700-7.4, Value Engineering Change Proposals (VECP).

*****END OF SECTION*****

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SECTION 01040 - COORDINATION

1.0 GENERAL

This Section covers coordination requirements supplementary to those of the Contract and other Sections of these Specifications. These requirements may be modified as mutually agreed upon by the Contractor and Construction Manager.

The Contractor will obtain construction schedules from subcontractors and suppliers and assume responsibility for correctness.

The Contractor will incorporate schedules from subcontractors and suppliers into Progress Schedule to plan for and comply with sequencing constraints.

2.0 COOPERATION WITH OTHERS

The Contractor is hereby advised that work on other contracts within or adjacent to its contract limits may already be in progress. Contracts for construction may also be subsequently awarded to others and because of relocation and construction of various utilities he may not have exclusive occupancy of the territory within or adjacent to the limits of the Contract.

In case of interferences between the operations of different construction contractors, the Construction Manager will determine the work priority of each contractor and the sequence of work necessary to expedite the completion of the entire project. In all such cases, the decision of the Construction Manager shall be accepted as final. The temporary delay of the Contractor's work due to such circumstances shall not be considered as justification for claims for additional compensation.

The Contractor shall coordinate his activities with the City as they relate to utility shutdowns. The City facilities must operate 24 hours per day, except as otherwise noted elsewhere in these specifications, and only the Owner's staff will be permitted to operate valves or other utilities.

3.0 ORGANIZATION AND COORDINATION

3.1 Monthly Reports

The Contractor shall prepare and submit a progress report to the Construction Manager by the tenth calendar day of each month. This progress report shall include a description of all efforts completed during the previous month, tasks scheduled for the next month, outstanding problems, and personnel changes. The report shall also include updated schedule milestones with narratives.

3.2 Daily Reports

The Contractor shall complete a Contractor's daily report, a copy of which shall be submitted to the Construction Manager daily by the end of the succeeding workday. The information contained in the daily report shall include, but not necessarily be limited to, the following:

- Project name and number
- Contractor's name
- Date
- Report #__ (also "page ___ of ___")
- Weather conditions
- Staff employed on the project and duties performed (Distinguish between field and office staff)
- Trades on job site, respective number of trades persons used, and work description
- Subcontractors on job site, number of respective subcontractor's staff present and work description
- Equipment on job site, type and number and weather used.
- Summary of work performed
- Materials delivered to site
- Delays to project
- Visitors to project
- Other comments
- Contractor's signature
- Safety/accident activities

The Contractor's standard daily report form may be used provided it furnishes, as a minimum, all the information cited above.

3.3 Correspondence

All correspondence from the Contractor to the Construction Manager shall be dated and numbered in sequence. The Construction Manager will likewise number its correspondence and transmittals to the Contractor.

4.0 SYSTEM OUTAGE REQUESTS

Modifications to existing facilities, the construction of new facilities, and the connection of new to existing facilities may require the temporary outage or bypass of treatment processes, equipment, utilities, or other facilities. In addition to the Construction Schedule required under Section 01310, the Contractor shall submit a System Outage Request (SOR) and a detailed outage plan and time schedule for all construction activities which will make it necessary to remove a tank, pipeline, channel, electrical circuit, control circuit, equipment, structure, road or other facilities from service.

The SOR and outage plan shall be submitted to the Construction Manager for review and acceptance a minimum of two weeks in advance of the time that such outage is needed. The outage plan shall be coordinated with the construction schedule specified in Section 01310 and shall meet the restrictions and conditions specified in this section. The detailed plan shall describe the Contractor's method for preventing bypassing of other facilities; the length of time required to complete said operation; any necessary temporary power, controls, instrumentation or alarms required to maintain control, monitoring and alarms for the City's facilities; and the manpower, plant and equipment which the Contractor shall provide to ensure proper operation of associated treatment units.

In addition, the outage plan shall describe the Contractor's contingency plan that shall be initiated if his temporary facilities fail or it becomes apparent that the time constraints described in the approved outage plan cannot be met. The contingency plan shall conform to all specified outage requirements. All costs for preparing and implementing both the outage and contingency plans shall be borne by the Contractor with no additional compensation, therefore.

The Contractor shall provide, Monday through Friday at least two days prior to the actual shutdown, written confirmation of the shutdown date and time, or written notification that the schedule for performing the work has changed or revisions to the outage plan are required.

5.0 SEQUENCING OF THE WORK

Operations of the City's facilities are critical to the public health and safety of the citizens of Stockton. Sufficient facilities to serve the needs and demands of the City shall always remain in service. The City shall be the sole judge as to its needs and the facilities that must remain in service to provide adequate service.

The Contractor shall coordinate and cooperate with the City to establish his schedule for work at all the project facilities. The approved project schedule shall be subject to change as it pertains to site work and shutdowns, when required by the City to accommodate unforeseen or emergency situations in the operation of its facilities.

6.0 ACCESS TO PROJECT FACILITIES

The City will provide keys and alarm codes to the Contractor to provide access to each facility site included in this contract work. Keys and alarm codes will be provided only to the Contractor's Representative and jobsite foremen; the actual number of keys provided shall be determined by the City, based upon the Contractor's scheduling for work crews.

The Contractor shall ensure that each site is locked and secure, with alarm activated, always that workers are not at the site.

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SECTION 01050 - FIELD ENGINEERING

1.0 CHECK OF EXISTING IMPROVEMENTS

It shall be the responsibility of the Contractor to check all dimensions, elevations, and location of existing structures, utilities, pipelines, grades or other existing items affected by or affecting the Work under this Contract, prior to the start of construction and ordering of materials and equipment affected thereby. The Contractor shall be solely responsible for determining the extent and cost of all removal and salvage operations. The Contractor shall notify the Construction Manager if existing conditions are not as shown on the Contract Documents.

2.0 DATUM

Where applicable, elevation datum for this Project is based on the Project benchmark shown on the Drawings. All connections shall be installed based on actual elevations of existing structures to which connections are made.

3.0 LINES AND GRADES

The Contractor shall lay out all work, including structures and pipelines, and shall be responsible for any errors resulting from. In all questions arising as to proper location of lines and grades, the Construction Manager'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 Drawings and as required for the proper operation and function. The Contractor shall set the work limits.

The Contractor's layout shall be based on existing structures, survey control and benchmarks established by the City.

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

***** END OF SECTION *****

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SECTION 01060 - REGULATORY REQUIREMENTS

1.0 APPLICABLE CODES

This Section summarizes without limitation the laws and codes by which the Work has been designed and to which the Contractor shall conform in the prosecution of the Work. The Contractor shall make available for their use at the site such copies of laws, regulations, or codes applicable to the Work as the City may request of it.

1.1 Laws and Regulations

As specified in Sections 00700-4.11 and 00700-4.12 of the General Conditions, and in Section 7-1.09 of the Standard Specifications.

1.2 Codes

- a. California Building Code (CBC), 2010 Edition.
- b. Title 8, Industrial Relations, California Administrative Code, Chapter 4, Division of Occupational Health and Safety, Safety Orders.
- c. Title 19, Public Safety, California Administrative Code, State Fire Marshal.
- d. Codes and Standards listed in Section 16010 of these Specifications.
- e. Local Mechanical Code.
- f. Local Plumbing Code.
- g. National Fire Protection Association.
- h. National Electric Code
- i. State and Local Public Health Codes.
- j. San Joaquin Valley Unified Air Pollution Control District Regulations.

1.3 Specifications

Standard Specifications and State of California Specifications, as defined in Section 01090.

2.0 LICENSES, FEES, AND PERMITS

The City will pay the fee for City of Stockton and County of San Joaquin issued permits specific to the Project; the Contractor will be responsible for picking up said permits at the appropriate times. For those permits and licenses generally required to work or do business as a Contractor, the Contractor shall procure the permit or license and pay all charges and fees. In all cases, the Contractor shall pay all costs for complying with special requirements of permits and shall give notice necessary and incident to the prosecution of the Work. For any permits obtained by the City after the Contract Bid Date, an adjustment (add or deduct) in the Contract Price, as appropriate, will be made by change order, to account for all costs incurred in complying with the requirements of the respective permit. See also Section 00700-4.9 of the General Conditions.

2.1 Contractor's License

The Contractor shall possess at the time of bid and maintain throughout the duration of the contract, a valid California Class "C-10" Contractor License.

2.2 Business License

The Contractor shall possess prior to the execution of the contract and maintain throughout the duration of the contract, a valid City of Stockton business license.

2.3 Permits

N/A

***** END OF SECTION *****

SECTION 01090 - REFERENCES

1.0 DEFINITIONS

Unless otherwise stated, the words directed, required, permitted, ordered, instructed, designated, applicable, appropriate, sufficient, proper, desirable, necessary, prescribed, approved, acceptable, satisfactory or words of like import, refer to actions, expressions, and prerogatives of the City Design Consultant, or Construction Manager.

Masculine gender words include the feminine. References to gender, such as "workman" and "flagman" and the pronouns "he" or "his" referring to such titles, are abstract in the specifications, used for the sake of brevity, and are intended to refer to persons of either sex.

Singular words include the plural and "person" includes firms, companies, and corporations.

Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine, and feminine of the words and terms.

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

Act of God - An earthquake, flood, cyclone, or other cataclysmic phenomenon of nature. A rain, windstorm, high water, or other natural phenomenon, which might reasonably have been anticipated from historical records of the general locality of the work, shall not be construed as an Act of God.

Addenda - Written or graphic instruments issued prior to the bid which modify or interpret the Contract Documents, drawings, and specifications, by additions, deletions, clarifications, or corrections.

Agreement - The written document covering the performance of the Work as more fully described in the Contract Documents.

Authorized City Official - The City Manager or his designee.

Beneficial Occupancy - The City operating and maintaining specific constructed facilities for the purpose for which they are intended, after City has provided written acceptance of substantial completion for such facilities.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the price for the work to be performed.

Bidder - Any properly licensed and qualified individual, firm, partnership, corporation, joint venture, or combination thereof, submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

Bond(s) - Bid, Performance, or Labor and Material Bonds and other instruments of surety, furnished by the Contractor and Contractor's surety in accordance with the Contract Documents.

Calendar Day - Any day including legal holidays, Saturdays and Sundays.

City - A public or quasi-public agency or authority, corporation, association, partnership, or individual for whom the work is to be performed. Under this contract, the City is identified by name in the agreement.

City's Representative - The person designated, in writing, by the City to act as its agent on specified matters relating to this Contract. The City's Representative is an employee of the City or other individual who has been designated to represent the City. The City's Representative may also act as the Construction Manager.

Construction Manager - The person designated, in writing, by the City to act as its representative at the construction site and to perform construction inspection services and administrative functions relating to this Contract. Initial contact by the Contractor with the City shall be through the Construction Manager.

Contract Change Order - A written order to the Contractor, covering changes in the plans or quantities, or both, and establishing the basis of payment and time adjustments for the work affected by the changes. Also referred to as a Change Order.

Contract Documents - The words "Contract Documents" shall mean any or all, but not limited to, the following items, as applicable:

Notice Inviting Bids
Instructions to Bidders
Official Bidding Documents
Designation of Subcontractors
Bid Guaranty Bond
Agreement
Acknowledgments
Performance Bond
Payment Bond
General Conditions
Supplementary Conditions
General Requirements
Standard Specifications
Technical Specifications
Drawings and Plans
Addenda, if any
Executed Change Orders if any
Notice of Award
Notice to Proceed
Standard Drawings

Each of these items is to be considered by reference as part of the Contract Documents, also referred to as Contract.

Contract Price - The amount payable to the Contractor under the terms and conditions of the Contract based on the price given on the bidding schedule, with adjustments made in accordance with the Contract. The base amount given in the bidding schedule shall be either a lump sum bid or the summation of the unit price bids multiplied by the estimated quantities set forth in the bid form. Also referred to as Contract Amount or Contract Sum.

Contract Time - Number of calendar days stated in the Contract for the completion of the Work.

Contract Completion Date - The date on which the City accepts the work as being complete.

Contractor - The person or persons, firms, partnership, corporation, or combination thereof, who have entered with the City, as party or parties of the second part of its or their legal representatives.

Contractor's Plant and Equipment - Equipment, material, supplies, and all other items, except labor, brought onto the site by the Contractor to carry out the Work, but not to be incorporated in the Work.

Day(s) - Calendar Day(s).

Direct - Action of the City or Construction Manager by which the Contractor is ordered to perform or refrain from performing work under the Contract.

Drawings - Refers to the Contract drawings, profiles, cross sections, elevations, details, and other working drawings and supplementary drawings, or reproductions thereof, signed by the Design Consultant, approved by the City, and are referred to in the Contract Documents, which show the location, character, dimensions, and details of the work to be performed. The terms drawing, plan and plans have the same meaning as the term drawings unless otherwise stated or specified.

Design Consultant - The engineer or architect designated by the City to have design control over the Work or a specified portion of the Work, acting either directly or through duly authorized representatives. Such representatives shall act within the scope of the duties delegated to them.

Engineer - See Resident Engineer.

Field Directive - Written documentation of the actions of the City or Construction Manager in directing the Contractor. Also referred to as a Directive.

Field Order - A written instruction given to the Contractor authorizing work that is a change to the scope of work carried out on a time and material basis.

Final Completion - Final Completion is the date upon which written acceptance by the City has occurred stating that the Construction of all work as required by the Contract Documents has been completed in accordance with the Contract Documents.

Float - Float or "total float" shall be defined as provided in the Associated General Contractors of America "CPM in Construction, A Manual for General Contractors."

Furnish - To deliver to the job site or other specified location any item, equipment, or material.

General Conditions - Part of the Contract Documents representing the general clauses that establish how the project is to be administered.

General Requirements - Part of the Contract Documents establishing special conditions or requirements peculiar to the work and supplementary to the General Conditions.

Geotechnical Engineer - Registered professional engineer in the State of California who conducted the site sub-surface investigation and prepared the soils report utilized for design purposes.

Herein - Refers to information presented in the Contract Documents.

Holidays - Legal holidays designated by the City or specifically identified in the Contract and Paragraph 01010-13.0

Inspector - City or Construction Manager staff who inspect and review the work for conformance with the Contract Documents.

Install - Placing, erecting, or constructing any item, equipment, or material.

Laboratory - The designated materials testing laboratory authorized by the City to test materials and work involved in the Contract.

Life Cycle Cost - The sum of all costs over the useful life of a building, system, or product, including the cost of design, construction, acquisition, operation, maintenance, and salvage value. The useful life will be determined by the City.

Liquidated Damages - The amount prescribed in Paragraph 00700-6.5, Liquidated Damages, and Paragraph 01010-4.0, Damages For Delays, 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 specifications.

Net Cost Savings - The reduction in construction contract cost to the City resulting from implementation of a value engineering change proposal submitted by the Contractor. Net cost savings shall be determined by deducting from the estimated gross savings, the estimated amount of increased costs to the City resulting from the proposed change. Estimated gross savings shall include all labor, material, equipment, overhead, profit, and bond. Estimated City costs shall include, but not be limited to, design, construction, acquisition, operation, and maintenance costs.

Notice of Award - A written notice by the City to the Contractor informing it that the Contract has been awarded to the Contractor.

Notice to Proceed - The written notice by the City to the Contractor authorizing the Contractor to proceed with the Work and establishing the date of commencement of the Work.

Official Bidding Document - A separately bound manual which contains copies of all documents to be submitted as the bid.

Owner - City of Stockton.

Paragraph - For references or citation purposes, refers to the paragraph(s), called out by paragraph number and alphanumeric designator.

Person - Includes firms, companies, corporations, partnerships, and joint ventures.

Project - The undertaking to be performed under the provisions of the Contract.

Project Manual - Those Contract Documents which are bound into one or more volumes prior to bidding.

Provide - Furnish and install, complete in place.

Punch List - List of incomplete items of work and of items of work which are not in conformance with the Contract.

Resident Engineer - Construction Manager or his designee.

Shall - Refers to actions by either the Contractor or the City and means the Contractor or City has entered a covenant with the other party to do or perform the action.

Shown - Refers to information presented on the Drawings, with or without reference to the Drawings.

Site - The property as described in the General Conditions or as shown on the Drawings.

Soils Engineer - Shall mean the Engineer, or at his discretion, may mean the Geotechnical Engineer.

Specifications - That part of the Contract Documents consisting of the General Conditions, Supplementary Conditions, General Requirements, applicable State Standard Specifications, and Technical Specifications.

Specify - Refers to information described, shown, noted or presented in any manner in any part of the Contract.

Standard Specifications - The City of Stockton Standard Specifications and Plans in effect at the time of advertising the Work.

State of California Specifications - The State of California Department of Transportation Standard Specifications in effect at the time of advertising the Work. Also referred to as State Standard Specifications and Cal Trans Standard Specifications.

Subcontractor - A subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the Work at the Site. The term subcontractor means a subcontractor or subcontractor's authorized representative. The term subcontractor does not include any separate contractor or any separate contractor's subcontractors.

Submittals - The information which is specified for submission to the Construction Manager in accordance with the Project Manual.

Substantial Completion - Substantial Completion is the date upon which written acceptance by the City has occurred stating that the construction of facilities is sufficiently completed in accordance with the Contract Documents, such that specific facilities can be utilized for the purpose for which they are intended, and the City thereupon takes beneficial occupancy of each facility.

Sub-subcontractor - A sub-subcontractor is a person or entity who has a direct or indirect contract with a subcontractor to perform any of the Work at the Site. The term sub-subcontractor means a sub-subcontractor or an authorized representative thereof.

Supplier - Any person, firm, corporation, or organization who supplies materials or equipment for the Work, including that fabricated to a special design, and may also be a Subcontractor or a Sub-subcontractor.

Surety - The person, firm, corporation, or organization that joins with the Contractor in assuming the liability for the faithful performance of the Work and for the payment of all obligations pertaining to the Work in accordance with the Contract Documents by issuing the Bonds required by the Contract Documents or by law.

Value Engineering - Modifications to the project which are proposed by the Contractor and which provide the product or services equivalent to that called for in the project specifications, but at lower cost than the cost of those products or services designated in the specifications.

Will - Actions entered by the Contractor or the City as a covenant with the other party to do or to perform the action.

Work - The labor, materials, equipment, supplies, and other items necessary for the execution, completion, and fulfillment of the Contract.

Working Day - Any day, other than a holiday, Saturday or Sunday, on which the Contractor may proceed with regular work on the current controlling operation as determined by the Construction Manager toward the completion of the Contract. A working day is equivalent to 1.45 calendar days.

2.0 **ABBREVIATIONS**

Whenever the following terms are used, the intent and meaning shall be as follows:

Abbreviations Stands For

AASHTO	American Association of State and Highway and Transportation Officials
AAMA	Architectural Aluminum Manufacturers Association
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association
ANSI	American National Standard Institute (formerly United States of America Standards Institute)
APA	American Plywood Association
API	American Petroleum Institute
AREA	American Railway Engineers Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Construction Managers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWPA	American Wood-Preserver's Association

Abbreviations Stands For (cont.)

AWS	American Welding Society
AWWA	American Water Works Association
CAGI	Compressed Air and Gas Institute CAL/OSHA State of California Department of Industrial Relations, Division of Industrial Safety
CBC	California Building Code
CBM	Certified Ballast Manufacturers
CBR	California Bearing Ratio
CI	Chlorine Institute
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CPSC	Consumer Products Safety Commission
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CTI	Cooling Tower Institute
DFPA	Douglas Fir Plywood Association
EIA	Electronic Industries Association
EPA	U.S. Environmental Protection Agency
ETL	Electronic Testing Laboratory
FM	Factory Mutual Insurance Company
FPS	Fluid Power Society
FS	Federal Specifications
GO 95	General Order No. 95, California Public Utilities Commission Rules for Overhead Electric Line Construction
HI	Hydraulic Institute
HMI	Hoist Manufacturers Institute
IAPMO	International Association of Plumbing and Mechanical Officials
IBR	Institute of Boiler and Radiator Manufacturers
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPCE	International Power Cable Engineers Association
ISA	Instrument Society of America
NAAMM	National Association of Architectural Metal Manufacturers
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NPDES	National Pollutant Discharge Elimination System
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Act
PCMAC	Prestressed Concrete Manufacturers Association of California
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Structural Steel Painting Council TCA Tile Council of America
UPC	Uniform Plumbing Code
UL	Underwriters Laboratories
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California

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SECTION 01200 - PROJECT MEETINGS

1.0 PRE-CONSTRUCTION CONFERENCE

The Construction Manager will schedule a pre-construction conference and organizational meeting at the project site or other convenient location upon award and/or execution of the Contract and prior to commencement of construction activities.

1.1 Attendees

The City, Design Consultant, Contractor and its superintendent, invited subcontractors, and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.

1.2 Agenda

The Construction Manager will prepare an agenda for discussion of significant items relative to contract requirements, procedures, coordination and construction. The agenda may include, but may not be limited to:

1. Adequacy of distribution of Contract Documents.
2. Distribution and discussion of list of major subcontractors and suppliers.
3. Proposed progress schedules and critical construction sequencing.
4. Major equipment deliveries and priorities.
5. Project coordination.
6. Designation of responsible personnel.
7. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payment.
 - f. Record Documents.
8. Use of premises:
 - a. Office, construction, and storage areas.
 - b. OWNER's requirements.
9. Construction facilities, controls, and construction aids.
10. Shoring requirements and submittal of CONTRACTOR's geotechnical report.
11. Temporary utilities.
12. Safety and first aid procedures.
13. Security procedures.
14. Housekeeping procedures.

1.3 Minutes

Meeting minutes will be taken by the Construction Manager and distributed accordingly within fourteen (14) days. If the Contractor does not submit written objection to the contents of such minutes within seven (7) days after presentation to him, it shall be understood and agreed that the Contractor accepts the minutes as a true and complete record of the meeting.

2.0 PROGRESS MEETINGS

The Construction Manager will conduct progress meetings at the project site at regularly scheduled intervals which may be as frequent as weekly. Frequency of meetings is to be determined at the pre-construction conference.

2.1 Schedule

The dates, times and locations for the various meetings shall be agreed upon and recorded at the preconstruction conference. Subsequent changes to the schedule shall be by agreement between the Construction Manager and Contractor, with appropriate written notice to all parties involved.

2.2 Attendees

The City, Design Consultant, Construction Manager, Contractor, and its Superintendent shall each be represented at these meetings. Attendance by subcontractors, suppliers and other entities is subject to issues and/or items of the agenda which may, or may not, require attendance.

2.3 Agenda

Purpose of progress meetings: To expedite work of subcontractors or other organizations that are not meeting scheduled progress, resolve conflicts, and coordinate and expedite execution of the Work.

1. Review progress of the Work, Progress Schedule, narrative report, Application for Payment, record documents, and additional items of current interest that are pertinent to execution of the Work. Verify: Actual start and finish dates of completed activities since last progress meeting.
2. Durations and progress of activities not completed.
3. Reason, time, and cost data for Change Order Work that will be incorporated into Progress Schedule and application for payment.
4. Percentage completion of items on Application for Payment.
5. Reasons for required revisions to Progress Schedule and their effect on Contract Time and Contract Price.

Discuss potential problems which may impede scheduled progress and corrective measures.

2.4 Minutes

Meeting minutes will be taken by the Construction Manager and distributed accordingly within fourteen (14) days. If the Contractor does not submit written objection to the contents of such minutes within seven (7) days after presentation to him, it shall be understood and agreed that the Contractor accepts the minutes as a true and complete record of the meeting.

3.0 CONFERENCES

At any time during progress of the Work, the City and the Construction Manager shall have the authority to require the Contractor and any subcontractor, suppliers, or service providers to attend job-site conferences. Any notice of such conference shall be duly observed and complied with by the Contractor and subcontractors, suppliers, or service providers without extra cost to the City.

4.0 POST CONSTRUCTION MEETING

The Contractor shall plan, and include in its bid, all costs for a post construction meeting, including the following:

The Contractor shall:

- A. Meet with and inspect the Work 11 months after date of Substantial Completion with City and Construction Manager.
- B. Arrange the meeting at least 7 days before meeting.
- C. Meet in the City's office or other mutually agreed upon place.
- D. Inspect the Work and draft list of items to be completed or corrected.
- E. Review service and maintenance contracts and take appropriate corrective action when necessary.
- F. Complete or correct defective work and extend correction period accordingly.
- G. Require attendance of Superintendent, appropriate manufacturers and installers of major units of constructions, and affected subcontractors.

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SECTION 01300 - SUBMITTALS

1.0 DESCRIPTION

This Section covers requirements for submittals and forms a part of all other Specification Sections in which submittals are specified or required. Refer to the specific Sections and Divisions of the Specifications for additional submittal requirements.

A. Submittal Requirements Included In This Section

1. Number of submittal copies required.
2. Progress schedule.
3. Schedule of values.
4. Shop drawings.
5. Samples.
6. Materials lists and equipment data.
7. Instruction (operation and maintenance) manuals.
8. Installation instructions.
9. Record Drawings and Specifications.
10. Certificates.

B. Submittal Requirements Covered In the Conditions of the Contract and Other Sections

1. Applications for payments.
2. Schedule of testing laboratory services.
3. Written guarantees and warranties.
4. Manufacturers' certified reports.
5. Web Based Construction Document Management.

2.0 SUBMITTAL-GENERAL REQUIREMENTS

Submit to the Owner for its review and approval technical data and drawings for all shop drawings, samples, materials lists, equipment data, software, assemblies and installations, test procedures, instruction manuals, record documents, manufacturers' equipment manuals, and other submittals required by the Technical Specifications. All such items required to be submitted for review shall be furnished by and at the expense of the Contractor and any work affected by them shall not proceed without such review. Properly prepare, identify, and transmit submittals and their contents as provided herein or as the Owner may otherwise direct. Except for recording documents, test procedures, and instructional manuals for operation and maintenance, obtain submittal approval before the material or equipment covered by the submittal is delivered to the site. Contractor will not be paid for equipment or material delivered to the project site until the appurtenant submittals have been approved. Coordinate the progress schedule required under Section 01310 and the Special Provisions to this requirement.

- A. Submittal Review Time Allow no less than thirty (30) days for the review of submittals, not including the time necessary for delivery or mailing, and this time shall cause no delay in the Work. Extension of the Contract Time shall not be granted because of the Contractor's failure to make timely and correctly prepared and presented submittals with allowance for the checking and review periods. All submittals shall be completed within ninety (90) days after Notice to Proceed by the City, unless the Construction Manager accepts an alternate

schedule for submission of submittals proposed by the Contractor. This time provision does not obligate the Construction Manager to approve submittals that may otherwise be deemed not acceptable.

- B. Deviations At the time of the submission, give notice in writing in the submittal of any deviation from the requirements of the Technical Specifications and Project Plans. Clearly indicate or describe the deviations and reasons therefore, including all other changes required to correlate the Work. State in writing all variation in costs occasioned by the deviations and any assumption of the cost of all related changes if the deviation is approved. Requirements stated in Paragraph E below shall also apply.
- C. Number of Submittals Except for manufacturer's instruction manuals and samples, the Owner shall require and retain four (4) copies of all submittals, specified or required in this and all other Sections of these Specifications, for his and his representatives' use, unless otherwise specifically noted in a specific Specification section. Submit an additional number of copies, not to exceed four (4), to be reviewed and returned for your use. For submitted drawings 11 x 17 and larger, submittal of a reproducible copy set with two (2) sets of black-line printed copies is preferred and encouraged. Additional sets for the Contractor's use are not necessary in this case as the reproducible set will be returned to the Contractor marked to show the required corrections or approval.

The number of submittals required for manufacturer's instruction manuals and samples are described later in this Section.

- D. Method of Submittal Deliver submittals by means of separate, dated, signed, and sequence numbered transmittals, identifying as to initial or re-submittal status, and fully describing the submittal contents. Submittal documents relating to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package. Except as noted, do not combine in a single submittal equipment which is specified in one section of the Specifications with equipment specified in other Sections of the Specifications. Submittals are not acceptable directly from Subcontractors, suppliers, or manufacturers. In each transmittal state the Owner's Project Number and Name, Name and Address of Contractor, Name and Address of Subcontractor, Manufacturer, Supplier or Distributor as applicable, Plan Reference and Specification Section, Articles, and paragraphs to which the submittal pertains; identify accompanying data sheets, catalogs, and brochures in the same manner. Where several types or models are contained in the literature, delete non-applicable portions or specifically indicate which portions are intended and applicable. Fully index all items submitted in the transmittal letter.
- E. Submittals in electronic media format

1. General: Provide all information In PC compatible format using operating system as utilized by the Construction Manager and City.
2. Text: Provide text documents and manufacturer's literature using current version of [MS Word] [Adobe Acrobat (i.e. PDF extension)] as utilized by the [City] [and] [Construction Manager].
3. Graphics: Provide all graphic submittals (drawings, diagrams) utilizing current version of AutoCAD, MicroStation, Adobe Acrobat (i.e. PDF extension) as utilized by the Construction Manager and City.

4. Contractor using other software shall be required to provide the Construction Manager with conclusive evidence of 100 percent data transfer compatibility.
5. Delivery: Deliver submittals to Construction Manager via email.
6. Incomplete Submittals, including those not correctly transmitted, not correctly titled and identified, or not bearing the Contractor's review and approval stamp, shall be returned to the Contractor without review.
7. Interrelated Submittals Except where the preparation of a submittal is dependent upon the approval of a prior submittal, simultaneously submit all submittals pertaining to the same class or portion of the Work.

During the preparation of submittals, informal communication and clarifications may be required between the Contractor and the City for exchange of technical information to assist and expedite preparation of complete submittals. As a result of this informal information exchange, certain minor refinements and revisions in the systems specified may be authorized informally by the City, but these shall not alter the scope of work or cause increase or decrease in the Contract price. During this informal exchange, no oral statement by the City shall be construed to give formal approval of any component or method, nor shall any statement be construed to grant formal exception to, or variation from these Specifications.

- F. Contractor's Review and Approval All submittals shall be submitted as the instruments of the Contractor, who shall be responsible for their accuracy and completeness and coordination. Such responsibility shall not be delegated in whole or part to subcontractors or suppliers. These submittals may be prepared by the Contractor, subcontractors, or suppliers, but the Contractor shall ascertain that submittals meet all the requirements of the Contract Documents. The Contractor shall ensure that there is no conflict with other submittals and notify the Construction Manager in each case where its submittal may affect the work of another contractor or the City. The Contractor shall ensure coordination of submittals among the related crafts and subcontractors.

On every submittal of shop drawings, samples, materials lists, equipment data, instruction manuals, and other submittals upon which the proper execution of the Work is dependent, mark with the Contractor's review and approval stamp certifying that (1) the submittal has been reviewed, checked, and approved and the contents have been coordinated with the requirements of the Work and the Technical Specifications and Project Plans including related Work, (2) all quantities, field measurements, field construction criteria, materials, equipment, catalog numbers, and similar data have been determined and verified, or that it shall be done, and (3) the Work covered by the submittal is recommended by the Contractor and the Contractor's guarantee shall fully apply thereto. The Contractor's stamp shall be dated and signed by the Contractor in every case.

- G. Review and Approval Submittals will be reviewed only for conformance with the design concept of the Project and with the information given in the Technical Specifications and Project Plans. The approval of a separate item as such shall not indicate approval of the assembly in which the item functions nor shall approval be construed as revising, in any way, the requirements for a fully integrated and operable system as specified. The approval of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Technical Specifications and Project Plans or for any revision in re-submittals unless the Contractor has given notice in writing of the deviation or revision at the

time of submission or resubmission and written approval has been given to the specific deviation or revision. The approval of submittals shall not relieve the Contractor of responsibility for errors or omissions in the submittals or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, and completion of the Work.

- H. Form of Approval Review of submittals has as its primary objective the completion for the City of a project in full conformance with the Contract Plans and Specifications, unmarred by field corrections, and within the time provided. In addition to this primary objective, submittal review as a secondary objective will assist the Contractor in its procurement of equipment that will meet all requirements of the project Plans and Specifications, will fit the structures detailed on the Plans, will be completed with respect to piping, electrical, and control connections, will have the proper functional characteristics, and will become an integral part of a complete operating facility.

After review by the Design Consultant of each of the Contractor's submissions, the material will be returned to the Contractor with actions defined as follows:

1. NO EXCEPTIONS NOTED (RESUBMITTAL NOT REQUIRED) - Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the work not covered in this submission. Does not constitute approval or deletion of specified or required items not shown in the partial submission.
2. MAKE CORRECTIONS NOTED (RESUBMITTAL NOT REQUIRED) - Same as 1, except that minor corrections as noted shall be made by the Contractor.
3. AMEND AND RESUBMIT- Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Design Consultant.
4. NOT ACCEPTABLE (RESUBMIT) - Submitted material does not conform to Plans and Specifications in major respect (i.e., wrong size, model, capacity, or material).

Items 1 and 2 above (no re-submittal required) are considered "favorable review." Items 3 and 4 above (correction and re-submittal required) are considered "unfavorable review."

It shall be the Contractor's responsibility to copy and/or confirm reviewed submittals in sufficient numbers for its files, subcontractors, and vendors.

- I. Corrections and Re-submittals Make all required corrections and resubmit the required number of corrected submittals until approved by the Owner. Direct specific attention in writing to revisions other than the corrections called for by the Owner on previous submittals, and state in writing all variations in costs and your assumption of the cost of related changes the same as is required for deviations in 2.0B. Identify each re-submittal with number of the original submittal followed by consecutive letters starting with "A" for first re-submittal, "B" for second re-submittal, etc. The Owner reserves the right to deduct moneys from the amounts due to the Contractor to cover the cost of its review time for all submittals beyond the second submission.
- J. Check of Returned Submittals Check returned submittals for correction and ascertain if the corrections result in extra cost above that included under the Technical Specifications and Project Plans and give written notice to the Owner within five days if, in your opinion, such

extra cost results from corrections. By failing to so notify the Owner or by starting any Work covered by a submittal, all claims for extra costs resulting from required corrections are waived.

- K. Conformance Do not purchase, fabricate, deliver, construct, or commence any Work represented by required submittals until the applicable submittal has been approved. Conform Work to the approved submittals and all other requirements of the Technical Specifications and Project Plans unless subsequently revised by contract change order, in which case prepare and submit revised submittals as may be required. Do not proceed with any related Work which may be affected by the Work covered under submittals until the applicable submittals have been approved, particularly where piping, machinery, equipment, concrete work and the required arrangements, embedments and clearances are involved.
- L. Piecemeal Submittals Except for reinforcing steel submittals, piecemeal submittals shall be returned un-reviewed. However, for mechanical equipment and the like, separate submittals for embedded items, embedded metal work and anchors shall be reviewed.

3.0 SCHEDULE OF VALUES

Submit to the Owner for acceptance, in the form directed by or acceptable to the Owner, a complete schedule of the values of the various portions of the Work to coincide with the construction schedule, including quantities and unit prices aggregating the Contract Price (except in cases and to the extent that accepted unit prices form the basis for payment). In the schedule, subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction and to coordinate with the progress schedule required for this Work. Provide support data to substantiate its correctness as required by the Owner. Include with each item in the schedule of values, its proper share of overhead and profit. An unbalanced breakdown providing for overpayment to the Contractor on items of Work which would be performed first will not be approved. The schedule of values, when accepted by the Owner, shall be used only as a basis for the Contractor's applications for payment and not for additions to or deductions from the Contract Price. Provide the initial submittal for the schedule of values at the preconstruction conference as per Section 01200.

4.0 PROGRESS SCHEDULE

Refer Section 01310, Construction Schedule.

5.0 SHOP DRAWINGS

Each submittal shall be complete with respect to dimensions, design criteria, materials, connections, bases, foundations, anchors, and the like, and shall be accompanied by technical and performance data as necessary to fully illustrate conformance with the Technical Specifications and Project Plans. Provide the number of submittals sets as indicated in paragraph 2.0C of this Section.

- A. Title Block and Identification On each shop drawing, provide a space for the Engineer's approval or correction stamp and a title block showing the following:
 1. Name and address of Contractor.

2. Name and address of Subcontractor, manufacturer, supplier, or distributor, as applicable.
 3. Name and address of Owner.
 4. Date, scale of drawings, and identification number.
 5. Revision date, number, and brief description.
 6. Contractor's review and approval stamp.
 7. Owner's Number.
 8. Plan Reference and Specification Section reference.
 9. Project Name.
- B. Preparation and Size Details and information shall be clearly drawn, dimensioned, noted, and cross referenced. Unless otherwise approved, prepare shop drawings of the same size as the Contract Drawings or on 8-1/2 by 11 inch or 11 x 17 inch sheets as applicable. Maximum sheet size shall be 22 inches by 34 inches. Refer to Paragraph 2.0C above regarding use of a reproducible copy set for the larger drawings.
- Submittal and record drawings shall be drafted and submitted in AutoCAD with two copies of half sheet drawings and a magnetic media copy on a CD.
- C. Data Unless the following data is included in the instruction manuals or equipment data submitted prior to or with the shop drawings, submit with the shop drawings complete catalog and technical data for all manufactured products, materials, machinery, and equipment covered by the shop drawing submittal. Include data showing for each item, as applicable, the following information:
1. Manufacturer's specifications and details.
 2. Applicable technical data and performance curves.
 3. Preparation, assembly, and installation instruction with allowable tolerances.
 4. Connection requirements.
 5. Pre-start-up servicing and operating methods.
 6. Other data and information necessary to demonstrate that the proposed items conform to the Technical Specifications and Project Plans.
- D. Information Required Shop drawings shall contain details and information fully developing the pertaining Technical Specifications and Project Plans requirements and such other information as may be specified or required for approval, including but not limited to:

1. Related work with cross references to applicable portions of the Technical Specifications and Project Plans.
2. Dimensions including variations between indicated dimensions and actual conditions.
3. Physical configurations with critical dimensions for clearance, access, and servicing.
4. List of materials including fasteners and connectors.
5. Structural construction and assemblies, welds shown by AWS symbols, and each fastener and connector shown by type and class.
6. Grouting work, including grouting space and material.
7. Concrete foundations and bases for machinery and equipment including joints, joint filler and sealer, and reinforcing.
8. Anchor bolt details showing type and class, sizes, embedments, projections, and locations measured with respect to permanent structural features. An anchor bolt template shall be shown on the Shop Drawings and shall be furnished unless waived in writing by the Owner.
9. Protective coatings and factory finish fully described as to materials, number of coats, plated and metallic coating finishes, treatments, and similar information, all based on specified requirements. The term "as specified" is not acceptable for this purpose.
10. Machinery and equipment details. Standard catalog items need not be illustrated in detail, but indicate and detail sizes, supports, and connections.
11. Location of auxiliary items that are parts of machinery and equipment including sight glasses, petcocks, gauges, lubrication fittings and access, and maintenance monitoring devices.
12. Piping systems and piping including layout, fittings, valves, appurtenances, hangers and supports, and sleeves.
13. Electrical equipment showing plans, elevations, sections, arrangements, materials, anchor bolts, supports, weights, wiring and circuit diagrams, internal connections, busses, grounding, conduit spaces, layout of instruments, gages, meters, and other components. Diagrams shall carry a uniform and coordinated set of wire numbers and terminal block numbers to permit cross-referencing between the contract document drawings, the drawings prepared by the Contractor's installer, and equipment Technical Manual Drawings. Drawing number cross-referenced shall be provided.
14. Written descriptions fully describing the operation of all control circuits, start-up sequencing, shut down sequencing and alarms.
15. Underground duct banks showing typical details of conduits, joints, spacers, and means of securing conduits in place during concrete placement.

16. Dielectric connections, and materials and methods to be used to isolate aluminum from dissimilar materials.
 17. Full-size lettering layouts for data plate and nameplate inscriptions.
- E. Details and Connections Satisfactorily detail all connections required to complete the Work, including details necessary to make indicated or specified additions to existing work or to provide connections for future work. Design connections and parts of strength to withstand, without adverse deflection or stress, all loads or pressures to which they may be subjected and to develop the strength of the members or parts connected. In no case shall the connections, parts, or details be inferior to those required by the Technical Specifications or Project Plans.
 - F. Related Work The term "by others" is not acceptable for the description of related work shown in the shop drawings. Clearly note by name or description the Contractor, Subcontractor, or trade to provide such related Work; where such name or description is missing, it shall be understood and agreed that the Contractor is to furnish and install such related Work.
 - G. Clearances Do not proceed with any related Work that may be affected by piping, machinery, equipment, or other work therein until shop drawings and data showing all components with acceptable clearances have been approved.
 - H. Composite Shop Drawings With Installation Layouts Prepare and submit drawings, wherever specified or required, to resolve tight or conflicting field conditions. Show dimensional plans and elevations of the materials or equipment of all trades in the involved area or space, and include complete information as to arrangements, locations, clearances, avoidance of interferences, access, sizes, supports, connections, services, assembly, disassembly, and installation. Composite shop drawings and layouts shall be coordinated in the field by the Contractor and his Subcontractors for proper relationship to the Work of all trades, based on field conditions, and shall be checked and approved by them before submittal. Contractor shall have competent technical personnel readily available for such coordination and checking.

6.0 SAMPLES

Where samples are required in any of the following Specification Sections, unless otherwise specified, each sample submittal shall include two sets of samples. One set of approved samples and all disapproved samples shall be returned to the Contractor. Samples of value retained by the Owner shall be returned to the Contractor after completion of the Work if the Contractor's first transmittal of the sample requests its return. Approved samples of manufactured items returned to the Contractor may be installed in the Work if the location is recorded and the samples bear temporary identification as such.

- A. Identification Label or tag each sample or set of samples identifying the manufacturer's name and address, brand name, catalog number, intended use and other data as required by these Specifications.
- B. Colors, Patterns, and Textures For items required to be of selected and approved colors, patterns, textures, or other finish, submit sufficient samples to show the range of shades,

tones, values, patterns, textures, or other features corresponding to the instructions and requirements specified.

- C. Field-Applied Paint and Coatings Submit samples of finishes at least 60 days prior to start of such finishing operations in conformance with requirements specified in Section 09900, Painting and Protective Coatings.
- D. Factory Finish Colors of material specified to be furnished with a factory finish are subject to approval. Submit duplicate samples of factory finishes showing the full range of available colors for selection and approval when requested by the Owner.

7.0 MATERIALS LISTS AND EQUIPMENT DATA

Within thirty (30) days after the Notice to Proceed, the Contractor shall submit a List of Materials to the Construction Manager for review. The List shall include all items of equipment and materials for mechanical, piping, architecture, electrical, heating and ventilating, equipment piping, and plumbing work; and the names of manufacturers with whom purchase orders have been or will be placed. Items on the List shall be arranged in the same order as in these Specifications and shall contain sufficient data to precisely identify the items of material and equipment the Contractor proposes to furnish. The List shall include the Specifications or Drawing references. After the submission is favorably reviewed and returned to the Contractor by the Construction Manager, it shall become the basis for the submission of detailed manufacturer's drawings, catalog cuts, curves, diagrams, schematics, data, and information on each separate item for review as set forth elsewhere in the Contract Documents. A favorable review of shop drawings shall be obtained prior to the fabrication, delivery and construction of items requiring shop drawing submittal.

In determining acceptability, consideration shall be given to the availability of maintenance and replacement parts and materials, the availability of manufacturer's technical representatives, other factors that relate to the maintenance and repair of installed items without excessive inconvenience to the Owner, guarantees and warranties, as well as determination of conformance with the Technical Specifications and Project Plans.

- A. Materials Furnished Under Standard Specifications For materials specified by reference to standard or reference specifications, prepare and submit for approval a list of such materials by manufacturer's names and identifications to the extent requested by the Owner.
- B. Material Lists Neatly bind submittal copies with sturdy labeled covers. Copies shall contain an index listing the contents. Loose submittals shall be returned un-reviewed. For each item listed, include the manufacturer's name and address, trade or brand name, local supplier's name and address, catalog numbers and cuts, brochures, terms and conditions of manufacturer's guarantee and warranty, other information to fully describe the item, and supplementary information as may be required for approval. Mark cuts, brochures, and data to indicate the items proposed and the intended use. Provide the number of submittals sets as specified in Paragraph 2.0C above.
- C. Equipment Data Submit complete technical and catalog data for every item of mechanical and electrical equipment and machinery to be incorporated in the Work, including components. Submittal copies shall be bound, indexed, and contain information as required in paragraph 7.0B for submittal of materials lists and shall further include specific information on performance and operating curves and data, ratings, capacities, characteristics, efficiencies, and other data to fully illustrate and describe the items as may be specified or

required for approval, in particular, equipment incorporating logic circuits shall have a draft of a detailed theory of operation. Data shall be submitted in sets covering complete systems or functioning units. The number of submittal sets required shall be as specified in Paragraph 2.0C above.

- D. Foreign Materials which are manufactured, produced or fabricated outside of the United States shall be delivered to a distribution point in Stockton, unless otherwise required in these specifications or the special provisions, where they shall be retained for a sufficient period to permit inspection, sampling, and testing.

Attention is directed to the provisions in Section 00700-6.5 Liquidated Damages. The Contractor shall not be entitled to an extension of time for acts or events occurring outside of the United States and it shall be the Contractor's responsibility to deliver materials obtained from outside of the United States to the point of entry into Continental United States in sufficient time to permit timely delivery to the job site.

The Contractor, at no cost to the City, shall supply the facilities and arrange for any testing required in Stockton which the City is not equipped to perform. All testing by the Contractor shall be subject to witnessing by the City.

The manufacturer, producer or fabricator of foreign material shall furnish the City a Certificate of Compliance. In addition, certified mill tests report clearly identifiable to a lot of material shall be furnished where required in these specifications or otherwise requested by the City.

8.0 INSTRUCTION MANUALS

Obtain data from the various manufacturers and submit instruction (operation and maintenance) manuals covering all mechanical and instrumentation equipment and machinery installed in the Work.

- A. Contents Each manual shall have an index listing the contents. Information in the manuals shall include not less than:
1. General, introduction and overall equipment description, purpose, functions, and simplified theory of operation.
 2. Specifications.
 3. Installation instructions, procedures, sequences, and precautions, including tolerances for level, horizontal, and vertical alignment.
 4. Grouting requirements including grout spaces and materials.
 5. List showing lubricants for each item of mechanical equipment, approximate quantities needed per year, and recommended lubrication intervals; where possible, types of lubricants shall be consolidated with equipment manufacturers' approval to minimize the number of different lubricants required for plant maintenance.
 6. Start-up and beginning operation procedures.

7. Operational procedures.
8. Shutdown procedures.
9. Short and long term inactivation procedures.
10. Maintenance, calibration, repairs and rebuilds instruction.
11. Parts lists and spare parts recommendations.
12. Lists of all special tools, instruments, accessories, and special lifting and handling devices required for periodic maintenance, repair, adjustment, and calibration.
13. Wiring diagrams and detailed circuit operation description.
14. Performance curves and data.
15. Other information as may be specified or required for approval.

In addition to the above information, the Contractor, with the assistance of the respective equipment manufacturer, shall complete and include as part of the instruction manual for all equipment and machinery, the City of Stockton's "Preventative Maintenance Modification/Addition Request Form." A copy of the subject form is included at the end of this Section for information. Both pages of the entire form must be completed by the Contractor. Clean copies of this form will be provided to the Contractor for his use. A copy of the City of Stockton's "PM Procedure Number and Description Report" will be provided to the Contractor and is to be used in completing the form.

B. Format and Organization

1. Use drawings and pictorials to illustrate the printed text as necessary to fully present the information.
2. Where information covers a family of similar items of equipment, identify the applicable portions by heavy weighted arrows, boxes or circles, or strike-out the inapplicable information. Non-conforming data are not acceptable and shall be returned for rework and re-submittal. The submittal cover should state the method used to identify the applicable portions.
3. Incorporate into books all Manufacturers' Equipment Manuals including those specified in pertinent Sections of the Specifications. These books shall be organized by Equipment Class in same manner and sequence as the Specifications, i.e. Mechanical, Electrical, Instrumentation, etc. Book size and quantity shall be sufficient for inclusion of all data and be of type and quality hereinafter specified in Paragraph 8.0C below.
4. Within each book of manuals, provide a Table of Contents for that book. If more than one book is necessary for a Class of Equipment, place a complete Table of Contents for that Class of Equipment within each book of that Class.

5. In addition, an overall Index of Contents shall be prepared in the same number of sets as required below for the final manuals and submitted separately to the Owner for his insertion in the Operation and Maintenance Manuals.
6. When a manufacturer's manual exceeds one inch in thickness and is bound as specified in Paragraph 8.0C it need not be rebound within another book, but the Overall Index shall refer to it by title and indicate that it is bound separately.
7. Electronic assembly drawings: Detailed circuit schematics, circuit board drawings, and chassis layouts shall be provided for all electrical and electronic equipment as part of the submittal. The circuit schematics, circuit board drawings, and chassis layouts shall clearly show, locate, and identify all components and component wiring. Circuit boards and circuit board components shall be identified by the original manufacturer's name and part number. Component values and tolerance shall be shown.
8. Drawings: Preprinted drawings provided by manufacturers of off-the-shelf equipment may be used if the drawings are an integral part of an offset printed O&M Manual, are not larger than 11-inches by 17-inches, are clearly legible when reproduced using conventional office copying machines, and, in the opinion of the Construction Manager, satisfy the requirement of these specifications. One reproducible of the O&M Manual drawing original must be supplied for each O&M Manual drawing larger than 11-inches by 17-inches and must satisfy all drawing requirements specified herein. Those preprinted O&M Manual drawings, which are not acceptable, or which must be modified or corrected to show the actual as-built design, shall be redrawn as new specially prepared shop drawings. Acceptable equipment manufacturer's drawings incorporated into equipment operating and maintenance manuals need not be duplicated or removed from the manuals.

C. Manual Binding

1. Bind all materials in sturdy three-ring loose leaf binders designed to provide full view opening and ease of making content additions or replacements. Maximum binder size shall be three (3) inches, with this binder size containing not more than 2¹/₂ inches of material. Binders of smaller thickness shall contain correspondingly less material. All bound material shall be three-hole punched; loose material shall not be permitted. Prints larger than 11 x 17 inches shall be inserted into a clear plastic cover envelope equipped with a three-hole tab on one edge suitable for inserting in the above described binders.
2. Permanently label face of cover and bound edge of each book "MANUFACTURERS' INSTRUCTION MANUAL," and indicate Class of Equipment, i.e., Mechanical, Electrical, Instrumentation, etc. or name specific equipment if a single unit is contained. Where more than one book is needed for a Class of Equipment or a single specific equipment unit, number books consecutively BOOK I, BOOK II, etc.
3. If more than one Class of Equipment is contained in a book, separate each class with a tabbed stiff divider insert page.
4. Prior to purchase or delivery, submit samples of each intended type of binder and obtain approval from the Owner.

- D. Manual Submittals Submittals shall include three (3) complete copies of each manual, one of which shall be returned to the Contractor marked to show the required corrections or approval. When approved, the Contractor shall deliver four (4) sets of unmarked (without review comments) manuals to the Owner. The Contractor shall submit preliminary instruction manuals at least ten (10) days prior to the start of Factory Acceptance test.

In addition to the above information, the Contractor, with the assistance of the respective equipment manufacturer, shall complete and include as part of the instruction manual for all equipment and machinery the City of Stockton's "Equipment Data and Preventive Maintenance Tasks Sheet." A copy of the subject form is included at the end of this Section for information.

9.0 INSTALLATION INSTRUCTIONS

In addition to the instructions submitted under the above Section 8.0, submit copies of manufacturers' installation instructions for material and equipment incorporated in the Work to the extent specified in other Sections and Divisions of the Specifications or requested by the Owner for its review. Installation instructions shall be reviewed for general adequacy only. After review, the Contractor shall distribute copies to all those involved with the instructions.

10.0 CITY PERSONNEL TRAINING PLAN

The Contractor shall submit a training plan at least fourteen (14) days prior to the start of any required City personnel training. Training plans shall describe the training course objectives, the scope of subjects to be covered, course outline including approximate time devoted to each subject, course materials to be provided by the Contractor, training aids to be used and training methods to be used (lecture, demonstration, student practice, etc.). The submittal shall include resumes for instructors of each class demonstrating the instructor's qualifications.

11.0 OTHER SUBMITTALS

Provide copies of other submittals such as calculations, manufacturer's certified reports, operational demonstration and system validation reports specified in other Sections and Divisions of the Specifications.

12.0 STORAGE INSTRUCTIONS

For each equipment and material item furnished, provide for the Owner's records two (2) copies of the manufacturer's recommended instructions for storage of the respective equipment or material. The instructions shall address conditions both before installation and (for mechanical, electrical and instrumentation equipment) after installation but before placing into continuous operation. Submit manufacturer's storage instructions either prior to delivery of the material/equipment or with the request for payment of materials delivered. Payment for materials delivered shall not be approved without submittal of the manufacturer's storage instructions.

13.0 TOOLS, ACCESSORIES, SPARE PARTS, AND MAINTENANCE MATERIALS

Furnish and deliver all special tools, instruments, accessories, spare parts, and maintenance materials required by the Technical Specifications and Project Plans, and furnish and deliver the special tools, instruments, accessories, and special lifting and handling devices shown in the approved instruction manuals. Unless otherwise specified or directed, deliver the items to the Owner, with the Contractor's written transmittal accompanying each shipment, in the manufacturers' original containers labeled to describe the contents and the equipment for which it is furnished. Where specifically required in the Section covering the material, furnish a metal cabinet to house this equipment.

14.0 RECORD DRAWINGS AND SPECIFICATIONS

Maintain one record copy of all Drawings, Specifications, Addenda, Modifications, approved submittals, correspondence, and transmittals at the site in good order and readily available to the Owner. Clearly and correctly mark the Record Drawings and the Record Specifications annotated to show all changes made during the construction process at the time the changed Work is installed. No such changes shall be made in the Work unless previously authorized by a Modification or by specific approval of deviations or revisions in submittals.

- A. Buried and Concealed Work Record the precise location of all piping, conduits, ducts, cables, and like Work that is buried, embedded in concrete or masonry, or concealed in wood or metal framed walls and structures at the time such Work is installed and prior to concealment. Each feature of the concealed Work, such as the beginning and end of straight runs, radius center point of curved runs, angles, connections, plugged tees or other fittings for future connections, and like items shall be accurately located by not less than two dimensions to permanent structures. The depth below finish grade, slab, or paving shall be noted for buried pipe, conduit, or ducts at the beginning and end of straight grade runs and at all grade change points, excepting sewer or drain lines run between manholes. Should the Contractor fail to record such buried or concealed Work, he shall uncover the unrecorded Work to the extent required by the Owner and shall satisfactorily restore and reconstruct the removed Work with no change in the Contract Price or the Contract Time.
- B. Delivery Upon completion and prior to final inspection of the Work, and as a condition of final payment, submit the Record Drawings and Specifications to the Owner for review, and make such revisions or corrections as may be necessary for them to be a true, complete, and accurate record of the Work in the opinion of the Owner. When approved, the Contractor shall deliver the Record Drawings and Specifications to the Owner.

15.0 REVISION OF SUBMITTALS

Whenever a contract change order causes a change to the information contained in previously approved submittals, submit information and data corresponding to the changed requirements for approval. Submit revisions following the procedure required for previously approved submittals.

16.0 CERTIFICATES

Each certificate required under the Contract or in any of the following Sections shall be signed by the individual, office, or agent lawfully authorized to execute the certificate, and such authority shall be cited in the certificate by title, description, or other acceptable evidence. All certificates shall be sworn as to the correctness and validity of the contents. Where specifically required in the respective section, certificates shall be notarized and duplicate copies of required certificates shall be notarized to be true copies.

A Certificate of Compliance shall be furnished prior to the use of any materials for which these specifications or the special provisions require that such a certificate be furnished. In addition, when authorized in these specifications or in the special provisions, the Engineer 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 specifications. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

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

The City reserves the right to refuse to permit the use of material based on a Certificate of Compliance.

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

17.0 EARTHQUAKE DESIGN AND RESTRAINT

Design, construct and attach all manufactured equipment supplied under this Contract, and as noted in the respective technical Sections, to resist stresses produced by seismic forces specified in this Section. Rigidly attach equipment that does not vibrate during normal operation. For equipment that vibrates during normal operation, attach by means of isolators with mechanical stops that limit movement in all directions unless it can be demonstrated by calculations that such stops are not required. Restrain equipment or portions of equipment that move during normal operation with mechanical devices that prevent displacement unless it can be demonstrated by calculations that such restraints are not required.

- A. Work Included The work included in this Paragraph includes, but is not limited to, the following: All electrical equipment, cabinets and casework plus contents, electrical panels and lighting fixtures.
- B. Minimum Earthquake Forces Except as provided herein, base calculations on the minimum earthquake forces prescribed for Essential Facilities by the 2010 California Building Code as published by California Building Standards Commission, 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833-2936.
- C. Include calculations with submittals of shop drawings, details and data specified in respective technical Sections of these Specifications.

18.0 CONSTRUCTION PHOTOGRAPHS

The Contractor shall perform pre-construction and post-construction survey of all existing structures, pavements and other above ground facilities within the project limits prior to beginning any work, noting their condition by means of dated photographs supplemented by written documentation, where applicable.

Color photographs shall be taken with a digital camera at locations that are appropriate to show pre-existing conditions and after constructed conditions. Each photograph shall show the date and time the photograph was taken and clearly be labeled showing the location, viewing direction, and any special features noted. Two (2) 4"x6" copies of each photograph shall be submitted to the City. The photographs shall be indexed, inserted in a plastic viewing folder.

Full compensation for pre-construction survey shall be included in the contract price for the various items of work involved, and no additional compensation will be allowed, therefore.

18.1 SUMMARY

- A. Section includes requirements for:
 - 1. Pre-construction photographs.
 - 2. Pre-construction videos.
 - 3. Post-construction photographs.
 - 4. Post-construction videos.
- B. The purpose of the photographs and videos is to document the condition of the facilities prior to the Contractor beginning work at the Project site and after Substantial Completion of the Work.
- C. Areas to be photographed and videoed shall include the site of the Work and all existing facilities either on or adjoining the Project site, including the interior of existing structures, that could be damaged because of the Contractor's Work.
- D. The scope of the photographic and video graphic documentation shall be the sole responsibility of the Contractor but shall be acceptable to the Construction Manager.
- E. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01200 - Project Meetings.
 - b. Section 01700 - Closeout Procedures.

18.2 SUBMITTALS

- F. Key plan: Submit key plan of Project site with notation of vantage points marked for location and direction of each photograph. Include the same label information as the corresponding set of photographs.

- G. Photographs:
1. Paper media:
 - a. Submit 4 prints of each photographic view within 7 days of taking photographs.
 - b. Format:
 - 1) 4- by 6-inch photos.
 - 2) Photographs shall be enclosed in clear plastic sleeves that are punched for standard 3-ring binders.
 - c. Identification: On back or below each print, provide the following information:
 - 1) Name of project.
 - 2) Date photograph was taken.
 - 3) Description of vantage point, indicating location and direction by compass point.
 2. Digital media:
 - a. Provide photos as individual, indexed JPG files with the following characteristics:
 - 1) Compression shall be set to preserve quality over file size.
 - 2) Highest resolution JPG images shall be submitted. Resizing to a smaller size when high resolution JPGs are available shall not be permitted.
 - 3) JPG image resolution shall be 800 by 600 or higher.
 - 4) Images shall have clean rectangular images. Artistic borders, beveling, drop shadows, etc., are not permitted.
- H. Videos:
1. Submit 4 copies of each video within 7 days of recording.
 2. Videos shall be submitted in a digital color video format on a DVD suitable for playback on a standard DVD player.
 3. Identification: On each copy provide a label with the following information:
 - a. Name of project.
 - b. Date video was recorded.
- I. Pre-construction photographs and videos: Submit prior to beginning work at the Project site or prior to the Preconstruction Conference specified in Section 01200, whichever occurs earlier.
- J. Post-construction photographs and videos: Submit project closeout documents as specified in Section 1300.

18.3 MEDIA

- K. Paper media:
1. Commercial grade, glossy surface, acid-free photographic paper.
- L. Digital media:
1. 120 millimeters, 700-MB, 80-minute CD compatible with Microsoft Windows XP.
- M. Videos:
1. 120 millimeters, DVD compatible with standard DVD players.

18.4 GENERAL

- N. Photographs (paper and digital media):

1. Date stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
- O. Videos:
1. Display continuous running time. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site. No additional compensation shall be provided for construction photographs and all costs therefore shall be included in the overall bid for construction of the project.

***** END OF SECTION *****

Equipment Data & PM Tasks

(One Entity per Sheet - please circle one: new or additional)

Equipment Tag #:		Date installed:	
Equipment Name:		Warranty Start Date:	
Equipment Initial Value:		Warranty End Date:	
Equipment Description:		Supplier Name:	

Manufacturer Name:			
Model NO:		Serial NO:	
Equipment Location:			

Misc. Equipment

Size:		Manufacturer:	
Capacity:		Model NO:	
Voltage:		Serial NO:	
Phase:		Hertz:	

Pumps

Galons Per Minute:		Seal Type:	
Size:		Manufacturer:	
RPM:		Model NO:	
TDH:		Serial NO:	
Type:		Voltage:	
Phase:		Hertz:	

Motors

Frame:		Phase:	
RPM:		Horsepower:	
Voltage:		Weight:	
Amerpage:		Manufacturer:	
Model NO:		Serial NO:	
Control Voltage:			

Engines

Primary Fuel:		Manufacturer:	
RPM:		Model NO:	
Cylinders:		Serial NO:	
Horsepower:			

SECTION 01310 - PROGRESS SCHEDULE

1.0 CONSTRUCTION SCHEDULE

- A. Section includes: Preparation, submittal, and maintenance of computerized progress schedule and reports, Contract time adjustments, and payment requests, including the following:
1. Preliminary Schedule.
 2. Baseline Schedule.
 3. Weekly Schedule.
 4. Schedule Updates.
 5. Schedule Revisions.
 6. Time Impact Analyses.
- B. Related sections:
1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 2. It is the CONTRACTOR's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of CONTRACTOR's Work.
 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the CONTRACTOR to see that the completed Work complies accurately with the Contract Documents.
 - a. Document 00700 – General Conditions

The schedule shall be submitted within ten (10) days of Notice to Proceed and favorably reviewed by the Construction Manager before the first partial payment can be made.

The Contractor shall provide with its schedule a procedural outline of the system shutdowns and proposed tie-in procedures, which shall be subject to the favorable review of the Construction Manager and the City.

1.1 Base Schedule

The Contractor shall submit the schedule based on either the bar chart method or the Critical Path Method (CPM). The schedule shall indicate preceding activity relationships and/or restraints where applicable and a controlling path shall be indicated. The schedule shall be time scaled and shall be drafted to show a continuous flow from left to right. The construction schedule shall clearly show the sequence of construction operations and specifically list:

- a. The start and completion dates of all work items.
- b. The dates of submittals, procurement, delivery, installation and completion of each major equipment and material requirement.
- c. Progress milestone events or other significant stages of completion.
- d. The lead time required for testing, inspection and other procedures required prior to acceptance of the work.

Activities shall be no longer than fifteen (15) workdays, except for submittals and delivery items. If an activity takes longer, it shall be broken into appropriate segments of work for measurement of progress. This limitation may be waived, upon approval of the Construction Manager, for repetitious activities of longer durations for which progress can be easily monitored.

1.2 Responsible Person

- A. Contractor shall designate, in writing and within 5 calendar days after Notice of Award, person responsible for preparation, maintenance, updating, and revision of all schedules.
- B. Qualifications of responsible person:
 - 1. Authority to act on behalf of Contractor.
 - 2. 5 years verifiable experience in preparation of complex construction schedules for projects of similar value, size, and complexity.

Knowledge of critical path method (CPM) scheduling utilizing Primavera Project Planner or SureTrak or Microsoft Project software.

1.3 Reports

The following reports shall be submitted with the Base Schedule:

- a. Bar Chart: A bar chart which lists each activity description, early start and finish dates, and all preceding and succeeding activities. The chart shall indicate all critical activities. A chart with the above information shall be provided with each monthly update in lieu of the report specified in Paragraph 01310-4.1.1.a.
- b. CPM Schedule: A CPM network report sorted by I-J or activity number which lists each activity description, early start and finish dates, preceding and succeeding activities and restraints, including lead/lag durations. The report shall show the critical path.
 - 1. CPM network report sorted by total float.
 - 2. CPM network report sorted by early start.

2.0 WEATHER CONDITIONS

Seasonal weather conditions shall be considered in the planning and scheduling of work influenced by high or low ambient temperatures or precipitation to ensure the completion of the Work within the Contract Time. No time extensions will be granted for the Contractor's failure to consider such weather conditions for the location of the Work and for the period in which the Work is to be accomplished.

The expected loss of working days specified in the Supplementary Conditions, Paragraph 01010-5.0, Weather Days, shall be included in a separate identifiable critical activity labeled "Weather Days Allowance" to be included at the end of the project schedule. When weather days occur, and are approved as such by the Construction Manager, the Contractor shall either:

- a. Increase the duration of the current critical activity (ies) by the number of weather days experienced, or
- b. Add a critical activity to the schedule to reflect the occurrence of the weather day(s).

The duration of the weather day allowance activity shall be reduced as weather days are experienced and included in the schedule. Any remaining weather days in the weather day allowance activity at the completion of the project shall be considered as float and shall not be for the exclusive use or benefit of either the City or Contractor.

3.0 UPDATES

3.1 Submittal Period

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 30th of each month, or on another mutually agreed upon date each month. The monthly reports shall be submitted within ten (10) days of the end of the reporting period.

- A. Submit monthly, updated schedules as specified. Submit final schedule update as specified.
- B. Submit revised schedules and time impact analyses as specified.
- C. Submit schedules in the media and number of copies as follows:
 - 1. 3 sets of the CPM network and/or bar chart (as specified by the OWNER) on D-size sheets. Color-coding to be specified by the OWNER.
 - 2. 3 sets of Tabular reports listing all activities sorted numerically identifying duration, early start, late start, early finish, late finish, total float, and all predecessor/successor information.
 - 3. 2 sets of CPM Schedule data electronic files stored on CD/DVD.

3.1.1 All Monthly Updates - All monthly updates shall include as a minimum:

- a. Tabulation reports for the following sorts:
 - 1. I-J [or Activity] Numbers
 - 2. Total Float
 - 3. Early Start
 - 4. Logic report of proceeding and succeeding activities with all restraints indicated (precedence schedules only)
- b. Narrative Report - The report shall show the activities or portions of activities completed during the reporting period. The report shall state the percentage of the work completed and scheduled, the remaining duration, and the progress along the critical path in terms of days ahead or behind the allowable dates as of the report date. Any changes made by the Contractor to the schedule, including I-J (or Activity) numbers and activity descriptions, shall be listed.

3.1.2 On-Schedule Updates - 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.

- 3.1.3 **Delayed Schedule Updates** - If, in the opinion of the Construction Manager, 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. The schedule shall be revised under the conditions defined in Paragraph 01310-3.3, Schedule Revisions. 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 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.

3.2 **Schedule Review**

Once each month, on a date mutually agreed upon, but no later than seven (7) working days after the submittal of the monthly update specified herein, a jobsite meeting will be held to review the Construction Schedule, job progress and the monthly update, or the Construction Manager will provide written comments on the monthly update.

3.3 **Schedule Revisions**

The conditions under which the Construction Manager will require revisions of the Construction Schedule include the following:

- a. 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) working days or by five percent (5%) of the remaining duration of time to complete the Contract, whichever is less.
- b. When delays in submittals or deliveries make re-planning or rescheduling of the work necessary.
- c. When the schedule does not represent actual prosecution and progress of the work.
- d. When any change to the sequence of activities, the completion date for major portions of the work, or changes occur which affect the critical path.
- e. When Contract modification necessitates schedule revision.

The Contractor shall not make any changes to the critical path without the Construction Manager's written consent.

4.0 **TIME IMPACT ANALYSES**

4.1 **Requirement**

When change orders impacting project duration are initiated, delays are experienced, or the Contractor desires to revise the schedule logic, the Contractor shall submit to the Construction

Manager a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request on the current contract schedule completion date.

4.1.1 **Construction Schedule Analysis -**

- a. Each Time Impact Analysis shall include an analysis demonstrating how the Contractor proposes to incorporate the change order, delay, or Contractor request into the Schedule.
- b. The analysis shall demonstrate the time impact based on the date of occurrence of the change, delay or revision; the status of construction at that point in time; and the impact of all affected activities.

4.2 **Delays**

Activity time delays will not automatically mean that an extension of Contract Time is warranted or due to the Contractor.

- a. It is possible that a strike or contract modification will not affect existing critical activities or cause non-critical activities to become critical, i.e., a strike or modification may result in only absorbing a part of the available total float that may exist within an activity chain of the network, thereby not causing any effect on the Contract completion date or time.
- b. The Contractor acknowledges and agrees that mitigation for delays due to changes, differing site conditions, and other causes will require revision of preferential sequences of the Work before proposing an updated schedule which supports a delay to the Project as a whole. When a delay to the Project can be avoided by revising preferential sequencing, and the Contractor chooses not to implement the revisions, the Contractor will be entitled to a time extension but is not entitled to compensation for indirect overhead.
- c. Float or slack shall not be for the exclusive use or benefit of the City or the Contractor. Extensions of time for performance will be granted only to the extent that the equitable time adjustments for the activity or activities affected exceeds the total float along the activity chain involved at the time the change was ordered or the delay occurred.
- d. The definitions of "non-critical activities" and "total float" shall be as provided in the Associated General Contractors of America book "CPM in Construction, A Manual for General Contractors."

4.3 **Submittal**

Time Impact Analyses shall be submitted in quadruplicate and within fifteen (15) days after a delay occurs or with the Contractor's cost proposal in response to a notice of change from the Construction Manager. In cases where the Contractor does not submit a Time Impact Analysis for a specific change order, delay, or Contractor request within the specified period, then it is mutually agreed that the change order, delay, or Contractor request has no time impact on the Contract completion date and no time extension is required.

- a. Approval or rejection of Time Impact Analyses by the Construction Manager and the City will be made within fifteen (15) days after receipt of the Time Impact Analysis unless subsequent meetings and negotiations are necessary.
- b. Upon mutual agreement by both parties, schedule revisions illustrating the influence of change orders, delays, and/or Contractor requests will be incorporated into the next schedule update.

5.0 WEEKLY ACTIVITIES PLAN

On the last working day of every week the Contractor shall submit to the Construction Manager the Contractor's Plan of Activities for the following three weeks. The Plan of Activities shall describe the activity and location of the activity and include the activity's I-J or Activity number as provided in the Construction Schedule.

6.0 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.

7.0 WORKHOUR PROJECTION

A work hour projection shall be submitted with the Construction Schedule. The projection shall list projected work hours for each intended trade. This applies to the Contractor and the Subcontractors as listed in the bid. The projection shall include work hours for project management, superintendence and administration. The work hour projection shall be revised and resubmitted when revisions to the Construction Schedule will result in changes to the projected manpower.

***** END OF SECTION *****

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SECTION 01400 - QUALITY CONTROL

1.0 QUALITY CONTROL

All materials and equipment shall be new and of the specified quality and equal to the samples found to be acceptable by the Design Consultant if samples have been submitted. It shall be the duty of the Contractor to draw the Construction Manager's attention to apparent errors or omissions and request instructions before proceeding with the Work. The Construction Manager may, by appropriate instructions, correct errors and supply omissions not involving extra cost, which instructions shall be as binding upon the Contractor as though contained in the original Contract Documents.

At the option of the Construction Manager, materials and equipment to be supplied under this Contract will be tested and inspected either at their place of origin or at the site of the Work. The Contractor shall give the Construction Manager written notification at least 30 days prior to the shipment of materials and equipment to be tested and inspected at point of origin. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the materials and equipment nor shall such tests and inspections preclude retesting or reinspection at the site of the Work.

Inspection of the Work by the City, Construction Manager and/or Design Consultant shall not relieve the Contractor of its obligations to conduct comprehensive inspections of the Work and to furnish materials and perform acceptable Work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

2.0 INSPECTION

All work and materials are subject to the inspection of the Construction Manager. The Contractor shall notify the Construction Manager before noon of the working day before inspection is required. If the Specifications, the Construction Manager's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give timely notice, in writing, of its readiness for inspection. Unless otherwise determined by the Construction Manager, all inspections shall be done only in the presence of the Construction Manager or its authorized representatives. The City, Construction Manager, Design Consultant and authorized government agents and their representatives shall always be provided safe access to the Work wherever it is in preparation or progress and to all warehouses and storage yards wherein materials and equipment are stored, and the Contractor shall provide facilities for such access and for inspection, including maintenance of temporary and permanent access. Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract, and improper work will be subject to rejection. Work and materials not meeting such requirements shall be made good, and unsuitable work or materials may be rejected; notwithstanding that such work or materials have been previously inspected by the Construction Manager or that payment therefore has been included in a progress estimate.

No portion of any work or installed materials shall be covered or concealed in any manner whatsoever without first being inspected by the Construction Manager. If any work should be covered up without the approval or consent of the Construction Manager, the Construction Manager shall have the authority to require that such work be uncovered for examination; defective work, if any, corrected; and recovered at the Contractor's expense.

3.0 SAMPLES AND TESTS

At the option of the Construction Manager, the source of supply of materials for the Work shall be subject to tests and inspection before the delivery is started and before such materials are used in the Work. Representative preliminary samples of the character and quality prescribed shall be submitted by the Contractor or producer of materials to be used in the Work in sufficient quantities or amounts for testing or examination.

All tests of materials furnished by the Contractor shall be made in accordance with the commonly recognized standards of national technical organizations, and such special methods and tests as are prescribed in the Contract Documents.

Certificates of compliance shall be provided by the Contractor as required in the Technical Specifications.

3.1 Sampling

The Contractor shall furnish such samples of materials as are requested by the Construction Manager, without charge. No material shall be used until the Construction Manager has had the opportunity to test or examine such materials. Samples will be secured and tested whenever necessary to determine the quality of the material. Samples and test specimens prepared at the jobsite, such as concrete test cylinders, shall be taken or prepared by the Construction Manager or Testing Firm in their presence and with the assistance of the Contractor.

3.2 Testing

Unless otherwise provided, all initial testing for concrete and soils shall be at no expense to the Contractor and shall be performed in the City's laboratory or in a laboratory designated by the City. Any retesting required due to failed test or defective material or sample shall be at the Contractor's expense. When required by the Contract or the Construction Manager, the Contractor shall furnish, at no extra charge, certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.

The Contractor is responsible for all system and equipment testing as provided for in these Contract Documents.

3.3 Test Standards

All sampling, specimen preparation, and testing of materials shall be in accordance with the standards of nationally recognized technical organizations.

The physical characteristics of all materials not particularly specified shall conform to the latest standards published by the American Society for Testing Materials, where applicable.

***** END OF SECTION *****

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.0 GENERAL

The Contractor shall provide all temporary facilities and utilities required for prosecution of the work, protection of employees and the public, protection of the work from damage by fire, weather or vandalism, and such other facilities as may be specified or required by any legally applicable law, ordinance, rule, or regulation.

The Contractor shall respond to public complaints when requested by the City.

2.0 TEMPORARY UTILITIES

2.1 Electrical Service

The Contractor shall arrange, at its own cost, with the local utility to provide adequate temporary electrical service at a mutually agreeable location. The Contractor shall then provide adequate jobsite distribution facilities conforming to applicable codes and safety regulations. The Contractor shall provide, at its own cost, all electric power required for construction, testing, general and security lighting, and all other purposes whether supplied through temporary or permanent facilities. Electric power may be available for the Contractor's use, on a site specific basis, and at the City's sole discretion.

2.2 Water

The Contractor shall pay for and shall construct all facilities necessary to furnish water for its use during construction. Water used for human consumption shall be kept free from contamination and shall conform to the requirements of the State and local authorities for potable water. The Contractor shall pay for all water used for the Contractor's operations prior to final acceptance. The Contractor shall be responsible for the disposal of all water used during construction in accordance with all local, state and national laws.

2.3 Temporary Lighting

The Contractor shall provide temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by California OSHA standards. As permanent lighting facilities are completed they may be used in lieu of temporary facilities, provided however, that bulbs, lamps, or tubes of such facilities used by the Contractor shall be replaced prior to final acceptance of the Work.

2.4 Heating and Ventilation

The Contractor shall provide means for heating and ventilating all work areas as may be required to protect the Work from damage by freezing, high temperatures, weather, or to provide a safe environment for workers. Unvented direct fired heaters shall not be used in areas where freshly

placed concrete will be exposed to combustion gases until at least two hours after the concrete has attained its initial set.

2.5 Sanitary Conveniences

The Contractor shall provide suitable and adequate sanitary conveniences for the use of all persons at the site of the Work. Such conveniences shall include chemical toilets or water closets and shall be located at appropriate locations at the site of the Work. All sanitary conveniences shall conform to the regulations of the public authority having jurisdiction over such matters. At the completion of the Work, all such sanitary conveniences shall be removed and the site left in a sanitary condition.

3.0 CONSTRUCTION FACILITIES

Construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.

3.1 Staging and False work

Temporary supports shall be designed by a professional registered engineer with an adequate safety factor to assure adequate load bearing capability. If requested by the Construction Manager, the Contractor shall submit design calculations for staging and shoring prior to application of loads.

Excavation support shall be in accordance with Section 00700-4.12, Safety.

3.2 Temporary Enclosures

When sandblasting, spray painting, spraying of insulation, or other activities inconveniencing or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, over-spray, or other hazard. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures. The Contractor shall comply with the San Joaquin Valley Unified Air Pollution Control District regulations for such work.

3.3 Warning Devices and Barricades

The Contractor shall adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices shall, as a minimum, conform to the requirements of Cal/OSHA.

A. Hazards in public right-of-way:

Contractor shall:

1. Mark at reasonable intervals, trenches and other continuous excavations in public right-of-way, running parallel to general flow of traffic, with traffic cones, barricades, or other suitable visual markers during daylight hours:

- a. During hours of darkness, provide markers with torches, flashers, or other adequate lights.
2. At intersections or for pits and similar excavations, where traffic may reasonably be expected to approach head on, protect excavations by continuous barricades:
 - a. During hours of darkness, warning lights at close intervals.

3.4 Above Grade Protection

On multi-level structures the Contractor shall provide safety protection that, as a minimum, shall meet the requirements of Title 8, California Code of Regulations.

3.5 Use of Explosives

All persons engaged in the activities of receiving, storing, using, handling or transporting any explosives must obtain a permit from the Fire Prevention Bureau; and all work shall be governed by the Health & Safety Code and any amendments or existing Articles of the National Board of Fire Underwriters Fire Prevention Code. The Contractor must notify the Construction Manager at least 14 days prior to the use of explosives.

4.0 PROTECTION AND RESTORATION OF PROPERTY

The Contractor shall be responsible for the protection of public and private property at and adjacent to the Work and shall exercise due caution to avoid damage to such property. The Contractor is responsible for the following, at no additional cost to the City:

- a. The Contractor shall conduct operations in a manner which will cause the least amount of damage, inconvenience and interference with the normal use of any public or private property. The Contractor shall repair or replace all existing improvements which are not designated for removal (e.g., curbs, sidewalks, survey points, fences, walls, signs, utility installations, pavements, structures, etc.) and are damaged or removed because of its operations. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.
- b. Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. Remove all transplantable trees, shrubs and bushes that may be damaged or destroyed by construction and reset them after construction. If damaged or removed because of the Contractor's operations, they shall be restored or replaced as required to return the property to its prior condition and location, or better, as is reasonably possible. Lawns shall be re-sod, or re-seeded and covered with suitable mulch if appropriate sod is not available.
- c. The Contractor shall give reasonable notice to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, sprinklers, and other improvements within the right-of-way which are designated for removal or would be destroyed because of the Work.
- d. To store his apparatus, materials, supplies, and equipment in such orderly fashion at the site of the Work as will not unduly interfere with the progress of his Work or the work of any other contractor.

- e. To provide suitable storage facilities for all materials which are liable to injury by exposure to weather, theft, breakage, or otherwise. If the Owner determines that suitable storage for certain materials is not being provided, he may direct the Contractor to remove it from the job site, or to store it properly at the job site.
- f. To place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work.
- g. In coordination with the appropriate authorities probe, pothole, or otherwise ascertain the exact location of all existing underground improvements in advance of excavation such that no damage to these improvements will occur. In the event interferences in construction are encountered with the various existing improvements, the City reserves the right to appropriately change the alignment and grade of the facilities.
- h. Provide for the flow of all sewers and drains interrupted during the progress of the Work, in a manner acceptable to the City and immediately cart away and remove all offensive matter at no additional cost to the City.

Where interruption of existing utilities occurs as the result of the Contractor's activity for this Work, whether intentional or accidental, repairs to the interrupted utility shall be performed by the Contractor in a manner acceptable to the Owner unless instructed otherwise in these Contract Documents. The repairs, including materials used, shall be performed in accordance with the requirements of the respective utility as well as the requirements of the Contract Documents for this Project. Where a conflict exists between the requirements of the respective utility and those of the Contract Documents for this Project, the more stringent of the two shall apply unless instructed otherwise by the Owner.

5.0 PROJECT SECURITY

The Contractor shall make adequate provision for the protection of the Work area against fire, theft, and vandalism, and for the protection of the public against exposure to injury and shall comply with the City's security measures.

5.1 Fire Extinguisher

Enough fire extinguishers of the type and capacity required to protect the Work and ancillary facilities, shall be provided and maintained in readily accessible locations. The local fire marshal shall have jurisdiction in determining the appropriate level of protection required.

5.2 First aid

Post first aid facilities and information posters conforming to requirements of OSHA and other applicable Laws and Regulations in readily accessible locations.

5.3 Temporary Fences

Except as otherwise provided, the Contractor shall enclose the site of the Work with a fence adequate to protect the Work and temporary facilities against acts of theft, violence, or vandalism.

In the event all or a part of the site is to be permanently fenced, this permanent fence or a portion thereof may be built to serve for protection of the Work site, provided however, that any portions damaged or defaced shall be replaced prior to final acceptance.

Temporary openings in existing fences shall be protected to prevent intrusion by unauthorized persons. During night hours, weekends, holidays, and other times when no work is performed at the site, the Contractor shall provide temporary closures or guard service to protect such openings. Temporary openings shall be fenced when no longer necessary.

6.0 ACCESS ROADS

Access roads shall be maintained to all storage areas and other areas to which frequent access is required. Similar roads shall be maintained to all existing facilities on the site of the Work to provide access for delivery of material and for maintenance and operation. Where such temporary roads cross buried utilities that might be injured by the loads likely to be imposed, such utilities shall be adequately protected by steel plates or wood planking, or bridges shall be provided so that no loads shall discharge on such buried utilities.

7.0 SPECIAL CONTROLS

The Contractor shall take all reasonable means to minimize inconvenience and injury to the public by dust, noise, diversion of storm water, or other operations under its control.

7.1 Dust Control

The Contractor at its expense shall take whatever steps, procedures, or means as are required to prevent abnormal dust conditions being caused by its operations in connection with the execution of the Work; and on any unpaved road which the Contractor or any of its subcontractors are using, excavation or fill areas, demolition operations, or other activities. Control shall be by sprinkling, use of dust palliatives, modification of operations, or any other means acceptable to agencies having jurisdiction. Haul routes shall be kept visibly wet during excavation and hauling operations.

Unless the construction dictates otherwise, and unless otherwise approved by the Construction Manager, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzle at least once each working day to keep paved areas acceptably clean whenever construction, including restoration, is incomplete.

7.2 Mud Control

The Contractor shall: Prevent mud nuisance caused by construction operations, unpaved roads, excavation, backfilling, demolition, or other activities.

7.3 Noise Abatement

Operations at the Worksite shall be performed to minimize unnecessary noise. Special measures shall be taken to suppress noise during night hours. Noise levels due to construction activity shall not exceed the levels specified by local ordinance.

Internal combustion engines used on the Work shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without said muffler.

7.4 Working Hours

Construction shall be allowed only between the hours of seven (7:00) a.m. and six (6:00) p.m. on weekdays and nine (9:00) a.m. to six (6:00) p.m. on weekends and holidays, unless otherwise approved by the City.

Normal working hours are defined as between the hours of seven (7:00) a.m. and six (6:00) p.m. on weekdays.

The Contractor shall be responsible for any inspection and additional administration costs incurred by the City, or its agents and representatives, for work by the Contractor outside the hours defined above on weekdays, or any work on weekends or holidays recognized by the City. Such costs shall be withheld from the succeeding monthly progress payment. Any work in Section 01010, Summary of Work, specifically required to be performed outside the normal working hours is excluded from the provisions of this paragraph.

The Contractor shall notify the Construction Manager at least 48 hours prior to any work outside the normal working hours defined above, on weekends or holidays. No work outside normal working hours will be allowed to take place without proper notification and approval by the construction manager.

7.5 Drainage Control

In all construction operations, care shall be taken not to disturb the existing drainage pattern whenever possible. Care shall be taken not to direct drainage water onto private property. Drainage water shall not be diverted to streets or drainage ways inadequate for the increased flow. Drainage means shall be provided to protect the Work and adjacent facilities from damage due to water from the site or due to altered drainage patterns from construction operations.

Temporary provisions shall be made by the Contractor to ensure the proper functioning of gutters, storm drain inlets, drainage ditches, culverts, irrigation ditches, and natural water courses.

7.6 Construction Cleaning

The Contractor shall, always, keep property on which work is in progress and the adjacent property free from accumulations of waste material or rubbish caused by employees or by the Work. The Contractor shall clean up not less than at the end of each workday, all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that always the site of the Work shall present a neat, orderly and workmanlike appearance. More frequent clean-up shall be performed as required to maintain access to all other City facilities still in operation.

All surplus material shall be removed from the site immediately after completion of the work causing the surplus materials. Upon completion of the construction, the Contractor shall remove all temporary structures, rubbish, and waste materials resulting from its operations.

Before final inspection of the work, the Contractor shall clean the project site, material sites, and all ground occupied by him in connection with the work of all rubbish, excess materials, false-work,

temporary structures, and equipment. All parts of the work shall be left in a neat and presentable condition.

Nothing herein, however, shall require the Contractor to remove warning, regulatory, and guide signs prior to formal acceptance by the City.

Full compensation for all site maintenance and cleanup will be considered as included in the prices paid for the various contract items of work and no separate payment will be made, therefore.

7.7 Disposal of Material

The Contractor shall decide for disposing of materials outside the Site and the Contractor shall pay all costs involved. The Contractor shall first obtain permission from the property owner on whose property the disposal is to be made and absolve the City from all responsibility in connection with the disposal of material on said property. When material is disposed of as provided above, the Contractor shall conform to all required Federal, State, and local regulations pertaining to such disposal.

7.8 Parking and Storage Areas

All stockpiled materials and parked equipment at the job site shall be located to avoid interference with private property and to prevent hazards to the public. Locations of stockpiles, parking areas, and equipment storage must be approved by the Construction Manager.

8.0 TRAFFIC REGULATION

8.1 General

The Contractor shall take all necessary steps to minimize inconvenience to the public throughout all work under this Contract. No driveways or private roads shall be blocked without notifying the property owner and access must be restored during all non-working hours. Safe access must always be maintained for pedestrian traffic throughout the work area.

At least one lane of traffic in each direction must always be kept open unless prior approval is provided by the City and any affected agency. No roads shall be blocked or made inaccessible, due to the Contractor's work, without prior written approval of the City and the affected agencies.

The Contractor shall not block or obstruct fire lanes at any time.

8.2 Haul Routes

Prior to the pre-construction conference, the Contractor shall submit for approval the proposed route(s) for all construction traffic on the project. This shall include any designated routes, if any, shown on the Contract Drawings. Upon approval, the Contractor shall strictly adhere to that route(s) only, unless written permission is obtained to change the route(s).

8.3 Traffic Control

Traffic control shall be in accordance with the California Department of Transportation Traffic Manual. The Contractor shall submit for approval, by the City and any other applicable agency, its traffic control plans prior to working on public streets.

Traffic control shall include signs, warning lights, reflectors, barriers, and other necessary safety devices and measures, including sufficient flaggers to direct vehicular traffic through the construction areas.

No material or equipment shall be stored/parked where it will interfere with the free and safe passage of public traffic, and at the end of each day's work, and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from the public right-of-way.

Should the Contractor appear to be negligent in furnishing warning and protective measures, as above provided, the Construction Manager may direct attention to the existence of a hazard, and the necessary warning and protective measures shall be furnished and installed by the Contractor at its expense.

9.0 PROJECT OFFICE

The Contractor shall maintain on the project site a suitable office or other protected area in which shall be kept project copies of the Contract Documents, project progress records, project schedule, shop drawings, and other relevant documents which shall be accessible to the City and Construction Manager during normal working hours.

10.0 CONTRACTOR'S SAFETY RULES

The Contractor shall execute and abide by all terms and conditions of the City's "Contractor's Safety Rules," a copy of which is included at the end of this section. The Contractor shall post "Contractor's Safety Rules" on the job site for the entire construction period for this Project.

***** END OF SECTION *****

CITY OF STOCKTON
DEPARTMENT OF MUNICIPAL UTILITIES

CONTRACTOR'S SAFETY RULES

THESE SAFETY RULES ARE TO INFORM YOU OF CERTAIN SAFETY AND HEALTH REQUIREMENTS THAT MUST BE FOLLOWED WHILE WORKING AT THE REGIONAL WASTEWATER CONTROL FACILITY MAIN PLANT, TERTIARY PLANT, PUMP STATIONS OR OTHER MUNICIPAL UTILITIES DEPARTMENT SITES.

1. DRINK ONLY BOTTLED WATER. DO NOT DRINK FROM ANY FAUCET, PIPELINE OR HOSE WHILE WORKING AT THE MAIN PLANT, TERTIARY PLANT, OR SMITH CANAL PUMP STATION.
2. STRICT ADHERENCE TO CONFINED SPACE ENTRY PROCEDURES OUTLINED BY CAL-OSHA TITLE 8 ARTICLE 108 MUST BE FOLLOWED.
3. WASH HANDS THOROUGHLY BEFORE EATING OR DRINKING.
4. WORK ONLY IN CONTRACTED AREAS. DO NOT WANDER THROUGH THE SITE.
5. OBSERVE THE 15 M.P.H. SPEED LIMIT ON THE MAIN PLANT AND TERTIARY SITES. OBSERVE ALL STOP SIGNS.
6. CHECK WITH THE CONTRACT MANAGER BEFORE BEGINNING ANY CONTRACTED WORK TO REVIEW ANY SPECIAL HAZARDS OR SAFE PRACTICE PROCEDURES FOR THE AREA YOU ARE WORKING IN.
7. IT IS YOUR RESPONSIBILITY TO ADVISE YOUR WORK CREWS AND SUBCONTRACTORS REGARDING HAZARDS AND SAFE PRACTICE MEASURES REQUIRED WHILE DOING ANY WORK AT MUNICIPAL UTILITIES DEPARTMENT FACILITIES. POTENTIALLY HAZARDOUS CHEMICALS ARE STORED AND USED AT MANY M.U.D. SITES.
8. THE ABOVE RULES DO NOT EXEMPT ANY CONTRACTOR OR SUB-CONTRACTOR FROM ANY APPLICABLE FEDERAL, STATE OR LOCAL REGULATIONS.

THE ACKNOWLEDGMENT BELOW MUST BE SIGNED AND RETURNED TO THE CONTRACT MANAGER. THANK YOU FOR YOUR COOPERATION.

I UNDERSTAND AND AGREE TO COMPLY WITH THE ABOVE RULES WHILE ON ANY MUNICIPAL UTILITIES DEPARTMENT SITE.

CONTRACTOR'S SIGNATURE

DATE

COMPANY NAME

SECTION 01600 - MATERIAL AND EQUIPMENT

1.0 STORAGE OF MATERIALS

Materials shall be stored in such a manner as to ensure the preservation of their quality and fitness for the Work. When considered necessary by the Construction Manager, materials shall be placed on platforms or other hard, clean surfaces, and covered when directed.

Materials shall be stored to facilitate inspection. Storage areas shall be suitably fenced, if necessary to protect the public or the material.

Unless otherwise designated in the General Requirements, locations and arrangements for storage sites for materials and equipment outside the limits of work shall be selected and maintained by the Contractor at its expense. Full compensation for furnishing such storage sites as may be necessary or required by the Contractor shall be considered as included in the price bid and no additional compensation will be allowed, therefore. The City shall be specifically exempted in any agreement from any liability incurred from the use of private property for construction purposes. Use of portions of the City's area at the site for materials and equipment storage shall be permitted only upon the approval of the Construction Manager.

2.0 HAZARDOUS MATERIALS

The storage and handling of potential pollution causing and hazardous materials, including but not necessarily limited to, gasoline, oil and paint shall be in accordance with all local, state and federal requirements. All hazardous materials shall be stored and handled in strict accordance with the Material Safety Data Sheets for the products. Material Safety Data Sheets shall be submitted to the Construction Manager prior to the delivery of materials to the project. Hazardous materials shall be removed and legally disposed of as soon as they are no longer needed for project work. All spills of potential pollution causing and hazardous materials shall be contained, cleaned up, removed and legally disposed, and remediated completely at no additional cost to the City.

3.0 MATERIAL AND EQUIPMENT SUBSTITUTIONS

3.1 General

In preparing these Specifications, the Design Consultant has named those products which to its knowledge meet the Specifications and are equivalent in construction, functional efficiency, and durability.

Wherever catalog numbers and specific brands or trade names preceded by "similar and equal" or followed by the designation "or equal" are used in conjunction with a designated material, product, thing, installation, or service mentioned in these Specifications, they are used to establish the standards of quality and utility required.

The first-named manufacturer is the basis for the project design and the use of alternative-named or unnamed manufacturer's products proposed by the Contractor may require modifications in the project design and construction. Where only one product has been named by brand, it is the only

brand, trade name, or manufactured product known to the Design Consultant that meets these Specifications.

Wherever catalog numbers and specific brands or trade names not preceded by designation "similar and equal" nor followed by the designation "or equal", are used in conjunction with a designated material, product, thing, installation, or service mentioned in these Specifications, to ensure compatibility with existing facilities, no substitutions will be allowed. Reference Paragraph 00100-19.0, Substitutions During Bidding.

3.2 Substitutions

Substitutions which are equal in quality and utility to those specified will be permitted, subject to the following provisions. For this purpose, the Contractor shall submit to the Construction Manager in accordance with Public Contract Code Section 3400, no later than thirty five (35) days after the Notice to Proceed, a typewritten list containing a description of each proposed substitute item or material. Sufficient data, drawings, samples, literature, calculations, or other detailed information will demonstrate to the Design Consultant that the proposed substitute is equal in quality and utility to the material specified shall be appended to this list. The Design Consultant will favorably review in writing such proposed substitutions as are, in its opinion, equal in quality to the items or materials specified. If a substitute is favorably reviewed, fifty percent (50%) of all savings shall be credited to the City.

Failure of the Contractor to submit proposed substitutions for review in the manner described above and within the time prescribed shall be sufficient cause for rejection by the Construction Manager of any substitutions otherwise proposed.

3.3 Modifications and Costs

If named alternatives or substitutions are proposed by the Contractor and favorably reviewed by the Design Consultant, the Contractor is responsible for providing, at no additional cost to the City, any electrical, mechanical, structural, or other related changes or testing that may be required to accommodate or provide the material or equipment the Contractor desires to use. Any deviation from the Specifications or the Drawings resulting from the type of material or equipment to be used shall not be the basis for any "extra charges" above and more than the original bid price of the work.

In addition, the Contractor is responsible for all additional costs to the City, and its agents and representatives, for evaluation of data submitted by the Contractor for alternative named or substitutions and any redesign necessary. The City shall deduct said costs from the Contract monies due the Contractor.

***** END OF SECTION *****

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SECTION 01660 - SYSTEM TESTING

The Contractor shall test the facilities as specified in the City of Stockton Standard Plans and Specifications. The Contractor shall provide all necessary facilities for conducting the tests, including but not limited to, personnel, power, water equipment, and chemicals. The Contractor shall provide the required minimum notice to the Construction Manager of its readiness and intent prior to each test.

***** END OF SECTION *****

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SECTION 01670 - TRAINING

1.0 GENERAL

Conduct an instruction program for City's operation and maintenance personnel. Provide training for the purpose of familiarizing the City's personnel with the proper operation and maintenance of all equipment. Training shall include both classroom instruction and "hands-on" instruction held at the equipment.

Additional specific requirements for each type of equipment and/or system are identified in the Specification sections covering the various project equipment and/or systems.

2.0 INSTRUCTORS

Training for an individual component within a system shall be performed by the manufacturer's factory-certified personnel. Training provided by the system fabricator, packager, integrator, or supplier shall be in addition to the component training.

Training instructors shall be trained and familiar with giving both classroom and hands-on field training.

3.0 SCHEDULING

Conduct training after the equipment has been installed, tested, and adjusted, and prior to City acceptance for beneficial occupancy or substantial completion of the respective equipment item, unless required earlier in the progress of the work the Specification section covering that equipment or system. Training shall be a prerequisite for acceptance.

Schedule instruction periods acceptable to the City and provide formal written notice of the proposed instruction period at least fourteen (14) days prior to commencement of the instruction period. The City will review and comment on the proposed training schedule to accommodate scheduling of its shift personnel and ongoing or forecasted workload. The duration of the training sessions may vary from one hour up through multiple days and should be based upon the complexity of the equipment involved and the training required.

For operation and routine maintenance instruction, three separate but identical training sessions for each respective equipment item or system shall be required (on different days or sets of days for multiple day sessions) to accommodate the scheduling of City's shift personnel and City's workload. For detailed maintenance and overhaul training, and for detailed troubleshooting, repair, and programming instruction for electrical and instrumentation equipment, two separate but identical training sessions (on different days or sets of days for multiple day sessions) shall be required for each respective equipment item or system.

4.0 INSTRUCTION PROGRAM

Instruction programs shall include basic system operation theory, troubleshooting, routine maintenance and repair, "hands-on" operation of equipment, and rebuild/overhaul procedures. Provide copies of all training material (graphs, diagrams, cut-a ways, charts, descriptions,

instructions, etc.) used in the training sessions for the use of City's personnel in attendance and for insertion into the O&M manuals. All training material shall become the property of the City.

Instructors shall prepare a typed agenda for each training session and submit it to City with the proposed training schedule twenty-one (21) days prior to the proposed commencement of the training period. City will review and comment on the adequacy of the proposed training and training schedule. Instructors shall obtain City approval of each training session agenda prior to the start of its respective session.

Training sessions, and their respective agendas, shall be organized into topic groupings to allow City to coordinate personnel attendance with the topics being taught. For example, operators do not need to attend overhaul training. Agenda should also include a statement of the intended audience, list of major training topics, goals and objectives for each major training topic, and motivational statements (i.e. why this is important).

Training sessions shall cover the information required in the Operation and Maintenance manuals submitted in accordance with Section 01300 and the following topics, as applicable:

- a. Operation, including theory of operation, start-up procedures, shutdown procedures, instrumentation and controls
- b. Lubrication, including changing of major fluids
- c. Operation safety
- d. Emergency response
- e. Troubleshooting
- f. Preventive maintenance procedures
- g. Optimizing life of equipment components
- h. Maintenance, including adjustment and/or removal and replacement of wear components
- i. Overhaul and repair, including takedown procedures, disassembly and assembly
- j. Programming
- k. Record keeping

Training for overhaul and repair on mechanical equipment, and for troubleshooting, repair, and programming on electrical, instrumentation, and control equipment shall provide sufficient detail, duration, and quality to result in factory certification for City staff receiving such training, where factory certification is available. This training shall include an examination to determine the competency of the participating students. All tests shall be scored by the instructor and results submitted to the City. Certificates shall be issued by the manufacturer to those students demonstrating a level of competency acceptable to the manufacturer. The manufacturer/instructor shall anticipate training City staff to this level of detail as follows:

Mechanical Equipment	Two separate sessions with four City maintenance staff in each session (separate days)
Electrical, Instrumentation and control	Two separate sessions with four City maintenance staff in each session (separate days)

5.0 LOCATION

All training shall be conducted at City facilities, except that training for factory certification in troubleshooting, repair, and programming of electrical, instrumentation, and control equipment may occur at the manufacturer's facility, at the manufacturer's option. Should the manufacturer choose to conduct this factory certification training at its facilities, the Contractor shall arrange for and pay

all costs for travel, lodging, meals, and other associated expenses for City staff to travel to and from, and receive training at, the manufacturer's facility, at no additional cost to the City.

6.0 RECORDING OF TRAINING SESSIONS

Contractor shall record in color using DVD format, every session of the instruction program for each respective equipment item or system. Recording shall be performed by a person experienced in the operation of video recording equipment. Care shall be taken to properly place the camera and provide adequate lighting and sound systems to ensure good video and audio quality. The final submitted DVD shall be subject to City approval and acceptance.

For video recording of "hands-on" training at the equipment, ambient noise shall be considered too loud to obtain satisfactory sound quality. For "hands-on" training sessions at the equipment, the recording shall be done without sound and the instructor shall dub a detailed narrative onto the recording by a means that will provide sound quality satisfactory to the City. Contractor shall propose a dubbing methodology to the City for approval prior to the first "hands-on" training session. Contractor is not required to video record factory certification training that occurs at the manufacturer's facilities but shall record any such training that occurs at City facilities.

Label each DVD identifying the session and respective equipment item or system. Multiple sessions of the same instruction program may be contained on the same DVD, but only one equipment item or system shall be recorded on the same DVD. The original and one copy of each DVD shall be submitted to the City within seven days following completion of each respective instruction program and any post-session dubbing. Responsibility for coordinating and providing all equipment, including video recorder and microphones, necessary to satisfactorily record each session, including all associated costs, shall be borne by the Contractor at no additional cost to the City.

***** END OF SECTION *****

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SECTION 01700 - CONTRACT CLOSEOUT

1.0 INSTRUCTION MANUALS

All Instruction Manuals shall be submitted to, and approval by the Construction Manager obtained, prior to seventy-five (75) percent of the work being completed, or prior to the City taking beneficial occupancy of any equipment or facility, whichever occurs first. Incomplete or unacceptable Instruction Manuals as determined by the Construction Manager shall constitute justification for withholding all or any portion of progress payments.

2.0 EQUIPMENT START-UP

After all acceptance tests have been completed by the Contractor and City, but prior to final acceptance, the Contractor shall recheck all equipment for proper alignment, adjustment, and calibration, check oil levels, re-lubricate all bearing and wearing points, and in general assure that all equipment is in proper condition for regular continuous operation.

3.0 FINAL CLEANING

3.1 Final Clean Up

Before final inspection of the Work, the Contractor shall clean the construction area, material sites, adjacent property and streets, and all ground occupied by the Contractor in connection with the Work of all rubbish, excess materials, form lumber, etc. All parts of the Work shall be left in a neat and presentable condition.

3.2 Final Building Clean-Up

On all building projects and wherever else applicable, besides general broom cleaning, the following special cleaning shall be performed at completion of the Work:

- a. Putty stains and paint shall be removed from glass; glass shall be washed and polished, inside and outside. Care shall be exercised so as not to scratch glass.
- b. Marks, stains, fingerprints, and other soil and dirt shall be removed from painted, decorated, or stained work.
- c. Waxed woodwork shall be cleaned and polished.
- d. Hardware shall be cleaned and polished of all traces; this shall include removal of stains, dust, dirt, paints, and blemishes.
- e. Spots, soil, paint, plaster, and concrete shall be removed from tile; tile work shall be washed afterwards.
- f. Fixtures and equipment shall be cleaned, and stains, paint, dirt, and dust shall be removed.

- g. Temporary floor protections shall be removed; floors shall be cleaned, waxed, and buffed.
- h. Dust, cobwebs, and traces of insects and dirt shall be removed.

4.0 PROJECT COMPLETION

4.1 Substantial Completion

Substantial Completion is the date upon which written acceptance by the Owner has occurred stating that the construction of facilities is sufficiently completed in accordance with the Contract Documents, such that specific facilities can be utilized for the purpose for which they are intended, and the Owner thereupon takes beneficial occupancy of each facility.

4.2 Final Completion

Final Completion is the date upon which written acceptance by the Owner has occurred stating that the Construction of all remaining Work as required by the Contract Documents, has been completed in accordance with the Contract Documents. The following items as they pertain to all remaining Work of the Project are included in the requirements which shall be completed prior to Final Completion being certified:

- a. Removal and disposal of all non-salvageable materials, and clean-up of the project area.
 - b. Correction of all work deficiencies and/or non-compliance items. The punch list for the entire Contract shall be resolved to the Owner's satisfaction prior to Final Completion.
 - c. Written certification by the Contractor stating that all the above items have been accomplished and a request that the Owner accept the project as having attained "Final Completion."
- A. Submit following Closeout Submittals **upon Substantial Completion or upon completion of the Work** and at least 7 days prior to submitting Application for Final Payment:
- 1. Evidence of Compliance with Requirements of Governing Authorities.
 - 2. Project Record Documents
 - 3. Operation and Maintenance Manuals.
 - 4. Warranties and Bonds.
 - 5. Keys and Keying Schedule.
 - 6. Evidence of Payment and Release of Liens and/or Stop Payment Notices as outlined in Conditions of the Contract.
 - 7. Release of claims as outlined in Conditions of the Contract.
 - 8. Survey Record Documents as specified in Section 01722.
 - 9. Certificate of Final Completion.

4.3 PROJECT RECORD DOCUMENTS

- A. Maintain at Project site, available to the City and Construction Manager, 1 copy of the Contract Documents, shop drawings, and other submittals in good order:
1. Mark and record field changes and detailed information contained in submittals and change orders.
 2. Record actual depths, horizontal and vertical location of underground pipes, duct banks, and other buried utilities. Reference dimensions to permanent surface features.
 3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
 4. Identify location of spare conduits including beginning, ending, and routing through pull boxes and manholes. Record spare conductors, including number and size, within spare conduits and filled conduits.
 5. Provide schedules, lists, layout drawings, and wiring diagrams.
 6. Make annotations with erasable colored pencil conforming to the following color code:

Additions:	Red
Deletions:	Green
Comments	Blue
Dimensions:	Graphite

- B. Maintain documents separate from those used for construction:
1. Label documents "RECORD DOCUMENTS."
- C. Keep documents current:
1. Record required information at the time the material and equipment are installed and before permanently concealing.
- D. Deliver recorded documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- E. During progress meetings, recorded documents will be reviewed to ascertain that changes have been recorded.

5.0 GUARANTEE

The Contractor shall guarantee that the equipment, materials and workmanship furnished under this Contract, including all work and materials provided by subcontractors or manufacturers of packaged equipment components, will be as specified and will be free from defects for a one-year guarantee period, starting from the date of Substantial Completion of the Work, unless a longer period of time is prescribed by law or required by special provisions elsewhere in the Contract Documents and except as otherwise noted herein. In addition, the equipment furnished by the Contractor shall be guaranteed to be free from defects in design. The Contractor also agrees to indemnify, defend, and hold the City harmless from liability of any kind arising from damage due to said defects. The Contractor shall execute and submit a completed Warranty Form prior to the Substantial Completion date or the final acceptance of the project or within five (5) days of the occupancy or use of a portion of the Work, whichever is applicable.

If a specific item (or items) of equipment or material cannot be utilized by the City at Substantial Completion because the Work is incomplete or defective, the guarantee for that item (or items) shall begin when the City is provided beneficial use. Beneficial use for any such items shall be provided prior to Final Completion. In the event warranty work involves repair or replacement of parts, machine work, or any other work which affects the equipment or materials installed under this Contract, the Contractor's guarantee on such items and work shall be extended for a period of one year from the date of installation of said replacement items, or the performance of said repair or replacement work.

Within the guarantee period and upon notification of the Contractor by the City, the Contractor shall promptly make all needed adjustments, repairs or replacements arising out of defects, failure or abnormalities which, in the judgment of the City, become necessary during such period. The cost of all materials, parts, labor, transportation, supervision, special tools and supplies required for correction of defects, failure or abnormalities shall be paid by the Contractor and its Surety. If, within ten (10) days, unless specified otherwise by the City, after the City gives the Contractor notice of a defect, failure, or abnormality of the Work, the Contractor neglects to make the necessary repair or adjustments, the City may make the repair or adjustments or order the Work to be done by a third party, with the cost of the Work to be paid by the Contractor and its Surety. In the event of an emergency where, in the judgment of the City, delay would cause serious loss or damage, repairs or adjustments may be made by the City, without giving notice to the Contractor, and the cost of the work shall be paid by the Contractor and its Surety.

The City and the Contractor agree that guarantee period on the parts of the work possessed and used by the City in accordance with Paragraph 00700-3.5, City's Right to Use or Occupy, shall commence on the date that the City takes possession of such work and so notifies the Contractor in writing. The City and Contractor further agree that such possession and use of the work shall not be deemed as Substantial Completion or acceptance of any other part of the Work.

Prior to the expiration of the guarantee period, the City reserves the right to hold a meeting and requires the attendance of the Contractor. The purpose of the meeting is to review warranties, bonds and maintenance requirements and determine required repair or replacement of defective items.

To this Section, acceptance of the Work or a portion of the Work by the City, shall not extinguish any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract which has not, in fact, been performed or fulfilled at the time of such acceptance. All covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

***** END OF SECTION *****

TECHNICAL SPECIFICATIONS

SECTION 16010 - ELECTRICAL

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall install, ready for use, the electrical system as specified herein and shown on the Contract drawings. This document describes the function and operation of the system and particular components but does not necessarily describe all necessary devices. All components and devices shall be furnished and installed as necessary to provide a complete operable and reliable system for accomplishing the functions and meeting the performance set forth hereinafter.
- B. Furnish all required labor, materials, project equipment, tools, construction equipment, safety equipment, transportation, test equipment, incidentals and services to provide a complete and operational electrical system as shown on the Contract "E"-series Drawings, included in these Specifications, or necessary for fully operating facility.
- C. Examine the specification and Drawings for equipment and provide all starters, circuit breakers, switches, pushbuttons and appurtenances which are not specified to be with the equipment. Erect all electrical equipment not definitely stated to be erected by others, furnish and install conduit, wire and cable and make connections required to place all equipment in complete operation.
- D. The major areas in the scope of work shown on E-series Contract drawings which includes both the furnishing and installation are:
 - 1. Instruments and devices Instrumentation.
 - 2. Conduits, grounding system and the field interconnection wiring between the instruments, field devices, electrical enclosures, etc. as shown on plans.
 - 3. All necessary miscellaneous shut off, sample and calibration valves to sensors.
 - 4. Trenching, backfilling, compaction and resurfacing for all underground conduit routes, concrete pads and pull boxes.
 - 5. Provide all necessary hardware, fittings, and devices to connect the designated equipment and wiring.
 - 6. Transformer pad, primary and secondary conduits & wire, bollards, pull boxes, etc. per PG&E Engineered Drawings for the new utility power service. All work associated with power Utility Service not performed by Utility Company.
 - 7. Equipment for the new utility power services.
 - 8. Installation, mounting supports, interconnection drawings, wiring, start-up, testing and warranty for all equipment and systems.
- E. The following specifications incorporate specific equipment and devices that are preferred by the Owner because of their serviceability, because of the local availability of labor, parts and materials, or because of the ability of the Owner to umbrella the equipment under existing maintenance contracts; however, favorable alternatives proposed in writing during the submittal process will be reviewed by the Owner as whether it is acceptable as an approved equal.
- F. All electrical equipment and materials, including installation and testing, shall conform to the applicable codes and standards listed in this and other Sections. All electrical work shall conform with the National Electrical Code (NEC) 2017 issue, and the California Electric

Code (2019 issue). The project shall be built to meet the City of Stockton standards. Nothing on the Drawings or in the Specifications shall be construed to permit work or materials not conforming to these codes and standards.

- G. Electrical Contractor should attend the pre-bid job walk and it is highly recommended Electrical Contractor shall have accomplished the following:
 - 1. Thoroughly examine existing conditions before submitting his bid proposal to perform any work. He shall compare site conditions with data given on the plans or in these Specifications. No allowance should be made for any additional costs incurred by the Electrical Contractor due to his failure to examine the site or to have failed to report any discrepancies to the Owner prior to bidding.
 - 2. Verify all measurements and conditions and shall be responsible for the correctness of same. No extra compensation will be allowed because of differences between work shown on the Drawings and measurements at the site.
- H. It is the Electrical Contractor's responsibility to be fully familiar with the existing conditions and local requirements and regulations. New MCCs may be installed in areas with limited space. MCC and other equipment footprints were developed based on best available information. Contractor shall be responsible for any additional conduits, wires, construction costs, engineering design requirements, etc. to accommodate MCCs that are larger than those shown on Contract Documents.
- I. Any major deviations in location and conduit routing that the Electrical Contractor makes without the express written review or direction of the Engineer, shall be considered to have been made at the Electrical Contractor's sole responsibility. Such deviations made by the Electrical Contractor shall be reflected on the Electrical Contractor supplied "Record Drawings" and "Conduit and Wire Routing Schedule". The Owner will deduct an amount equal of reimbursement from the Electrical Contractor's contract for all engineering, drafting, and clerical expenses associated with updating the Record Drawings and Conduit and Wire Routing Schedule due to any major unauthorized changes.
- J. M. The term "Engineer" used throughout this Division 16 is the "City of Stockton Engineer or their designated Engineer representative." The term "Owner" in Division 16 is the City of Stockton. When "Contractor" is listed in these documents without further definition such as "Electrical Contractor", it is to mean the "Prime or General Contractor."

1.02 CODES AND STANDARDS

- A. All electrical/instrumentation equipment and materials, including installation and testing, shall conform to the following applicable codes and standards:
 - 1. ANSI American National Standards Institute, Inc.
 - 1. CEC California Electrical Code, 2019 Edition
 - 2. EIA Electronics Industries Association.
 - 3. ETL Electrical Testing Laboratories.
 - 4. FM Factory Mutual.
 - 5. GO128 General Order No. 128, Rules for Construction of Underground Electrical Supply and Communication Systems, Public Utilities Commission of the State of California.
 - 6. IEEE Institute of Electrical and Electronics Engineers.
 - 7. ICEA Insulated Power Cable Engineers' Association.

8. ISA International Society of Automation (ISA) Standards (formerly Instrument Society of America)
 9. NEC National Electrical Code, 2017 Edition.
 10. NEMA National Electrical Manufacturers Association.
 11. NETA Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems, International Electrical Testing Association.
 12. NESC National Electrical Safety Code.
 13. NFPA National Fire Protection Agency.
 14. OSHA Occupational Safety and Health Act Standards.
 15. UL Underwriter's Laboratories, Inc.
- B. The revisions of these codes and standards in effect on the date of issuance of the Contract Documents shall apply.
- C. Codes and standards referenced shall be considered minimum acceptable work.
- D. In instances where two or more codes are at variance, the most restrictive requirements shall apply.
- E. Nothing on the Drawings or in the Specifications shall be construed to permit work or materials not conforming to the preceding codes and standards.
- F. All work shall also be performed in accordance with the City, State, County or Owner standards, and local Utility codes.
- G. The Contractor shall furnish without extra charge any additional material and labor which may be required for compliance with these codes and standards, even though the work is not explicitly mentioned in the Specifications or shown on the Contract E- Series Drawings.
- H. Amperage listed on the single-line drawings for motors are per NEC Table 430.250 and may not necessarily match that of the equipment supplied. It is the electrical system supplier and Contractor's responsibility to furnish equipment sized for the motors supplied for this project at no additional cost.

1.03 ELECTRICAL CONTRACTOR QUALIFICATIONS

- A. It is the intent of this Division that the complete responsibility for management and installation of the electrical and instrumentation required for this project be by the Electrical Subcontractor. This responsibility includes, but is not limited to, supervision and coordination of work performed by all suppliers of Division 16.
- B. The Electrical Subcontractor shall meet the following minimum qualifications:
1. Has a current C-10 Electrical Subcontractor's License.
 2. Has regularly engaged in similar electrical contracting for the Municipal Water and Wastewater Industry.
 3. Has successfully performed work of similar or greater complexity on at least two previous projects under one company name and under the present company name.
 4. Has been actively engaged in the type of electrical and instrumentation work specified in this Division for a minimum of two years.

1.04 SYSTEM SUPPLIER QUALIFICATIONS

- A. General

1. It is the intent of this Division that complete responsibility in the supplying of the MCC/PLC, PLC programming and all instrumentation equipment required for this project be supplied by one System Supplier. This responsibility includes, but not limited to, all work necessary to select, furnish, program, supervise installation, calibrate, and place into operation all transmitters, instruments, controllers, alarm equipment, monitoring equipment, and accessories as specified herein.
 2. The system supplier shall have an on staff project engineer with prior experience on similarly sized projects. This project shall coordinate the technical aspects of this project and prepare the submittals and drawings. This project engineer's name, address and phone number shall be provided within the first week after notice to proceed. The system supplier project engineer shall attend all coordination meetings and be on-site when requested by the Owner's Resident Engineer.
- B. Pre-Qualified System Suppliers
1. The Suppliers listed below have been determined to meet minimum qualifications specified in this Division and are pre-qualified by the Owner for providing supplier bids as system suppliers on the project.
 - a. Tesco (phone 916 395-8800).
 - b. Primex Controls (phone 707 449-0341)
- C. Non Pre-Qualified Suppliers
1. System Suppliers not pre-qualified by the Owner shall submit the information listed herein two weeks prior to bidding, and if approved by the Owner, will be listed in a Contract addendum prior to bid opening.
 2. Each System Supplier not pre-qualified shall submit they meet the following minimum qualifications:
 - a. Has regularly engaged in similar instrumentation systems for the Municipal Water and Wastewater Industry.
 - b. Has successfully performed work of similar or greater complexity on at least five previous projects under one company name and under the present company name.
 - c. Has been actively engaged in the type of PLCs and instrumentation work specified in this Division for a minimum of five years.
 - d. Employs personnel on this project who have successfully completed ISA or equal training courses on general purpose instrumentation.
 - e. Has a permanent, fully staffed and equipped service facility within 150 miles of the project site for a minimum of 1 year prior to bid date. Service facility shall be under same company name as System Supplier and same company shall be staffed with personnel and equipment required to maintain, repair and calibrate the instrumentation system. Subletting warranty to third party is not acceptable.
 3. Non-pre-qualified System Suppliers shall submit detailed information of the following to the Owner for determination of pre-qualification:
 - a. Company history.
 - b. List of five (5) completed projects of similar size and nature.
 - 1) Provide completion dates of projects.

- 2) References of Owner Representative in charge of project, including contact name and telephone number.
- c. List of projects in progress.
 - 1) Description of scope of projects.
 - 2) Dollar amount of projects.
- d. Complete 2018 Year End Financial statement prepared by a Certified Accountant or complete 2018 Company Tax Returns listing assets and liabilities.
- 4. Additional information for clarification as requested by the Owner in writing shall be provided by the System Supplier asking for the pre-qualification or pre-qualification will automatically be denied.
- 5. System Supplier providing financial statements lacking detail or stating that detailed financial records are proprietary will be disqualified as a pre-qualified System Supplier and is grounds alone for disqualification.
- 6. Any pre-qualification package deemed incomplete or lacking sufficient information to determine pre-qualification will result in System Supplier not being pre-qualified. No reason will be released on why a System Supplier was not pre-qualified.
- D. No reason will be released on why a System Supplier was not prequalified.

1.05 CONTRACT DOCUMENTS

- A. The Contract drawings and specifications are intended to be descriptive of the type of electrical system to be provided; any error or omissions of detail in either shall not relieve the Contractor from the obligations thereunder to install in correct detail all materials necessary for a complete operational system, at no additional cost.
 - A. The Contract drawings are generally diagrammatic; exact locations of electrical products shall be verified in the field with the Engineer. Except where special details on drawings are used to illustrate the method of installation of a particular piece or type of equipment or materials, the requirements or descriptions in this Section shall take precedence in the event of conflict.
 - B. The Contract Electrical elementary, elevation and one-line diagrams are the basis of the electrical system to be provided and are for reference only. It is the Contractor's responsibility to adjust and make minor revisions to the diagrams as necessary for operational system at no additional cost to the Owner. Additional isolators, relays, wiring, terminal blocks, etc., shall be provided for an operating system at no additional cost to the Owner.
 - C. Location at facilities of new equipment, inserts, anchors, panels, pull boxes, conduits, stub-ups, and fittings for the electrical system are to be determined by the Contractor and Engineer at time of installation. Contractor shall make minor adjustments to locations of electrical equipment required by existing conditions and coordination with other trades at no additional cost. Minor adjustments are defined as those adjustments required due to equipment size changes or variations between different equipment suppliers.
 - D. The Conduit and Wire Routing Schedule, wire fill, and number of conduits are based on the best information available. It is the Contractor's responsibility to modify the conduit schedule based upon Shop Drawings for the actual equipment. Such modifications in conduit sizes and numbers of conductors shall be at no additional cost to the Owner and shall be approved by Owner, if such changes are the direct result of the equipment selected by the Contractor.

- E. Electrical & instrumentation, conduit & wire lengths shown on circuit Drawings are approximate. The Contractor is responsible for determining actual lengths for bidding and installation purposes.
- F. All equipment shall be installed and located so that it can be readily accessed for operation and maintenance. The Engineer reserves the right to request minor changes in location of equipment, without incurring any additional costs. These minor changes are changes which would provide adequate clearance and work areas in front of and around equipment.
- G. Provide means to furnish equipment and accessories, do the installation, complete connections, submit documentation, perform start-up, and be responsible for the warranty.
- H. Where conduits are shown as "home runs" on the Contract drawings or stated to be furnished, but not explicitly shown, as part of the scope of work, the Contractor shall provide all fittings, boxes, wiring, etc. as required for completion of the raceway system in compliance with the NEC and the applicable specifications in this Section.
- I. No changes from the Contract drawings or specifications shall be made without written approval of the Engineer. Should there be a need to deviate from the Contract documents, submit written details and reasons for all changes to the Engineer for review within 30 days after the award of the contract.
- J. When existing conduits are to be used, it is the Electrical Contractor's responsibility to verify conduit size and routing. This includes all potholing or other location methods. Existing conductors and conduits damaged by Contractor during construction shall be repaired or replaced at no cost to Owner.
- K. The resolution of conflicting interpretation of the Contract documents shall be as determined by the Engineer.

1.06 COORDINATION

- A. The Contractor shall coordinate the electrical work with the other trades, code authorities, utilities, and the Engineer, with due regard to their work, towards promotion of a rapid completion of the project. If any cooperative work must be altered due to lack of proper supervision of such, or failure to make proper provisions, then the Contractor shall bear expense of such changes as necessary to be made in work of others.
- B. The Contractor shall examine the Civil, electrical and instrumentation equipment provided under other Sections of this Contract to determine the exact routing and final terminations for all conduits and cables. The exact locations and routing of cables and conduits shall be governed by structural conditions, physical interferences, and the physical location of wire terminations on equipment. Conduits shall be stubbed up as near as possible to equipment terminals.
- C. Manufacturer's directions and instructions shall be followed in all cases where such is not shown on the Contract Drawings or herein specified or have stipulations to meet warranty requirements.
- D. The SCADA modifications and additions are to be made at the operational Central facility. The Contractor shall schedule all the required work with the Owner, including each SCADA shutdown period. Each shutdown shall be implemented to minimize disruption of the existing operations. The work to be provided under this Contract shall not disrupt any of the existing operations without prior approval.
- E. The Contractor shall be responsible for coordinating PLC/OI design review meetings.

- F. The Contractor shall coordinate with Owner, witnessing Engineer and System Supplier to test the entire system.
- G. Schedule within 20 days after award of Contract all service installations and connections with utilities. Delays due to lack of effort by the Contractor which delay the project completion for lack of utility services will not be considered valid and Contract liquidated damages will be assessed.
- H. The Contractor shall cease work at any point, temporarily, and transfer his operations to such portions of work as directed, when in the judgment of the Owner it is necessary to do so.
- I. Prior to commencing construction, the Electrical Subcontractor shall arrange a conference with the General Contractor, System Supplier and Owner as well as equipment suppliers, and shall verify types, sizes, locations, requirement, controls and diagrams of all equipment furnished by these Contractors. He shall, in writing, inform the Engineer that all phases of coordination of this equipment have been covered and if there are any unusual conditions, they shall be enumerated at this time.
- J. The Contractor shall coordinate submittals and required meetings with the work, panel fabrication and factor tests so that project will not be delayed. This coordination shall include scheduling the different categories of submittals, so that one will not be delayed for lack of coordination with another. No extension of time will be allowed because of failure to properly schedule submittals.

1.07 UPERVISION

- A. The Contractor shall schedule all activities, manage all technical aspects of the project, coordinate submittals and drawings, and attend all project meetings associated with this Section.
- B. The General Contractor shall supervise all work in this Section, including the electrical system general construction work, from the beginning to completion and final acceptance.
- C. The General Contractor shall supervise and coordinate all work in this Section to ensure each phase of the project, submittal, delivery, installation, and acceptance testing, etc. is completed within the allowable scheduled time frames.
- D. The Electrical Contractor shall be responsible for obtaining, preparing, completing, and furnishing all paperwork for this Section, which shall include transmittals, submittals, forms, documents, manuals, instructions, and procedures.

1.08 INSPECTIONS

- A. All work or materials covered by the Contract documents shall be always subject to inspection by the Owner. If any material does not conform to the Contract documents or does not have a favorably reviewed submittal status; then the Contractor shall, within three days after being notified by the Owner, remove said material from the premises; and if said material has been installed, the entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the Contractor.
- B. The Contractor shall give the Owner 10 working days' notice of the dates and time for inspection. Date of inspection shall be as agreed upon by both the Contractor and Owner.

- C. Work shall not be closed in or covered over before inspection and approval by the Engineer. All costs associated with uncovering and making repairs where non-inspected work has been performed shall be borne by the Contractor.
- D. The Contractor shall always cooperate with the Engineer and aid for the inspection of the electrical system under this Contract. The Contractor shall remove covers, provide access, operate equipment, and perform other reasonable work which, in the opinion of the Engineer, will be necessary to determine the quality and adequacy of the work.
- E. Before request for final inspection is made, the Contractor shall submit to the Owner in writing, a statement that the Contractor has made his own thorough inspection of the entire project enumerating punch list items not complete and that the installation and testing is complete and in conformance with the requirements of this Division.
- F. Contractor will be Responsible for any Additional Cost for Overtime, Weekend Overtime or Differential Time, Expenses for Inspection of Defective Work that must be re-inspected.

1.09 JOB CONDITIONS

- A. The Contractor shall make all arrangements and pay the costs thereof for temporary services required during construction of the project, such as temporary electrical power and telephone service. Upon completion of the project, remove all temporary services, equipment, material and wiring from the site as the property of the Contractor.
- B. The Contractor shall provide adequate protection for all equipment and materials during shipment, storage and construction. Equipment and materials shall be completely covered with two layers of plastic and set on cribbing six inches above grade so that they are protected from weather, wind, dust, water, or construction operations. Equipment shall not be stored outdoors without the approval of the Engineer. Where equipment is stored or installed in moist areas, such as unheated buildings, etc., provide an acceptable means to prevent moisture damage, such as a uniformly distributed heat source to prevent condensation.
- C. The elevation of the project site is shown on Contract Civil Drawings. All equipment shall be derated, as recommended by the manufacturer or in accordance with ANSI C37.30.
- D. The normal outdoor, not in direct sunlight, ambient temperature range of the job site will vary between 20 to 110 degrees Fahrenheit. All equipment shall be rated to operate in these temperature ranges or provisions for adequate heating and cooling shall be installed, at no additional cost to Owner.
- E. The jobsite is prone to vandalism and theft. Contractor shall be responsible for securing all materials and equipment against theft and vandalism for the duration of the project.
- F. Contractor & Subcontractors shall utilize temporary services during construction of the project. No Contractors shall utilize building power, receptacles, etc. during construction.

1.10 SUBMITTAL AND DRAWING REQUIREMENTS

- A. General
 - 1. Electrical submittals shall be submitted for favorable review by the Engineer per this subsection and Division 1. They shall be complete giving all details of connections, wiring, instruments, enclosures, materials and dimensions. Standard sales literature will not be acceptable.

2. Identify all submittals by submittal number on letter of transmittal. Submittals shall be numbered consecutively and resubmittals shall have a letter suffix. For example:
 - a. 1st submittal: 1.
 - b. 1st resubmittal: 1A.
 - c. 2nd resubmittal: 1B, etc.
 - d.
 3. The Contractor shall include in writing on a separate submittal cover sheet any proposed departures from the Contract documents, and the reasons, therefore. Incorporate no such departures into the work without prior written approval of the Engineer. The approval of departures which substantially order" directive by the Engineer. Any cost differential associated with this change order must be negotiated with the Engineer to amend the Contract to reflect the costs or savings.
 4. Exceptions to the Contract specifications or drawings shall be clearly defined by the equipment supplier.
 5. Data shall contain sufficient details so a proper evaluation may be made by the Engineer. Contractor shall provide separate letter (located in the front of the submittal) detailing specific exceptions to the Contract Specifications or Drawings.
 6. Exceptions that are noted in the marked-up Drawings or Specifications, but not listed on the Exceptions/Clarifications letter, will be considered as nonresponsive and not accepted as changes to the Contract Documents.
- B. The electrical submittals shall include but not be limited to data sheets and drawings for each product together with the technical bulletin or brochure. The electrical submittals shall include:
1. Product (item) name used herein and on the Contract Drawings.
 2. The Manufacturer's complete model number or other designation.
 3. Tag name/number per the P & ID drawings, schedules and indexes.
 4. Index Binder Tab Dividers.
 5. Detailed electrical one line, elementary and loop diagrams and interconnection diagrams showing all wiring requirements for each system.
 6. Complete documentation with full description of operation.
 7. Complete catalog cuts with full description of equipment. General sales literature will not be acceptable. The part or model number with options to be provided shall be clearly identified. Where more than one item or catalog number appears on a catalog cut, the specific item(s) or catalog numbers(s) proposed shall be clearly identified.
 8. Location of assembly at which it is installed.
 9. Range, size and graduations, as required.
 10. Physical size with dimensions and mounting details. System Supplier submits a letter listing all instrumentation pipe sizes, pipe connections, flange types, and ANSI ratings signed by Contractor and System Supplier to certify coordination for proper installation prior to flow elements being purchased.
 11. Enclosure size, fabrication details and color.
 12. Enclosure backpan layout and elevation drawings to scale.
 13. Quantity and quality requirements for electric power, air, and/or water supply.
 14. Materials of construction of components.

15. Nameplate schedule.
16. Interconnection diagrams.
17. Failure to provide submittals with heavy duty permanent plastic labeled index tabs may be grounds for immediate rejection without review.
18. Bill of Materials: A complete Bill of Materials list shall be provided similar in format to the Bill of Material shown in Appendix "A". The Electrical Contractor shall submit separate Bill of Materials for electrical components and Generator. The System Supplier shall submit a separate Bill of Material for the panels, Switchboard, ATS, Control Panel, spare parts and another listing all field instruments. Generic names or part numbers used by a distributor or Systems House are not acceptable; originating manufacturer's name and part number shall be listed.
19. A separate instrument data sheet shall be provided for each instrument per ISA S20 standards or approved equal. Data sheets shall be printed on blue or pink paper. Provide an index with proper identification and cross-referencing of each data sheet.
20. Submit USB electronic copies of all submitted drawing in AutoCAD format.
21. For each resubmittal, provide a copy of submittal comments and a separate letter, on Company letterhead, identifying how each submittal comment has been addressed in the resubmittal.
22. Electronic PDF version of submittals shall follow hard copy format of submittal and shall be "bookmarked" at each index, subtab, copy of appropriate check marked Specification Section, bill of materials, copy of submittal comments (for resubmittals), Contractor's response to submittal comments (for resubmittals), drawings, etc. Failure to bookmark PDF may be grounds for immediate rejection without review. Bookmarks shall not be out of order, the English description shall match that listed in the Submittal's Table of Contents.
24. Electronic submissions of submittals may be provided for submittals less than 40 pages and without drawings. Submittals equal to or over 40 pages or those that contain drawings shall be provided in a hardcopy format. Drawings shall be printed at 11 inches by 17 inches. Hardcopy submittals shall be provided in binders as specified herein. The Owner reserves the right to reject submittals that fail to be organized as described herein.
25. Exceptions to the Contract control strategies shall be clearly defined by the equipment supplier. Descriptions of changes shall contain sufficient details so a proper evaluation may be made by the Engineer.
- 26.. The Supplier shall coordinate software submittals with the work so that project will not be delayed. This coordination shall include scheduling the different categories of submittals, so that one will not be delayed for lack of coordination with another.

1.11 POWER SERVICES

- A. All fees and charges of the Utility power for service hook-up will be paid by the Owner.
- B. Provide all the equipment and materials not provided by the power Utility Company for permanent service at the locations shown on the Contract Drawings. All work shall meet the requirements of the serving power Utility companies.

- C. Coordinate all work with the serving Power Utility, Pacific Gas and Electric (PG&E) for the new electrical service. The Contractor shall arrange a pre-construction meeting with the PG&E representative prior to start of any Utility related work. All work shall be performed per the PG&E Engineered drawings and requirements at no additional cost to Owner. The Contractor shall obtain the required inspections.
- D. Submit to the power Utility the proposed metering details. Provide a written statement from the Utility that shows approval of the proposed metering.
- E. All work associated with material and installation for the Utility power service not paid for by the Utility shall be borne by the Contractor.
- F. All fees and charges of the Utility power for new service hook-up will be paid by the District.
- G. Submit to the power Utility the proposed meter enclosure, meter socket, and service entrance drawing details. Provide a written statement from the Utility that shows approval of the proposed metering and service entrance drawings.
- H. It is the responsibility of the Contractor to make all equipment approval arrangements and scheduling with the power Utility company connected with this project. Schedule within 30 days after award of contract all service installations and connections with the power Utilities. Lack of effort by the Contractor to properly schedule Utility service will not be considered valid justification for delays in project completion and no extension in contract time will be given.
- I. The Utility power service representative for project is Pacific Gas & Electric (PG&E).
- J. Contractor shall be responsible for obtaining Utility Engineered drawings for primary and secondary conduits, transformer pad, bollards, pole risers, pull boxes, vaults, wire size requirements, pull rope requirements, etc. Conflicts between the Contract drawings and the Utility Engineered drawings shall be brought to the attention of the Engineer. Contractor shall meet all Utility requirements at no additional cost to the Owner.
- K. The Contractor shall verify the locations for the underground primary and secondary conduit runs, pull boxes, and transformer pad with Utility representative prior to installation.

PART 2 - PRODUCTS

2.01 QUALITY

- A. It is the intent of the Contract specifications and drawings to secure the highest quality in all materials and equipment to facilitate operation and maintenance of the facility. All equipment and materials shall be new and the products of reputable suppliers having adequate experience in the manufacture of these items. For uniformity, only one manufacturer will be accepted for each type of product. Provide the manufacturer's latest design that conforms to these Specifications.
- B. All equipment shall be designed for the service intended and shall be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection, and continuous or intermittent operation. All equipment shall be adequately stayed and braced and anchored and shall be installed in a neat and workmanlike manner. Appearance and safety, as well as utility, shall be given consideration in the design of details. All components and devices installed shall be standard items of industrial grade, unless otherwise noted, and shall be of sturdy and durable construction suitable for long, trouble

free service. Light duty, fragile and competitive grade devices of doubtful durability shall not be used.

- C. Products that are specified by manufacturer, trade name or catalog number established a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are favorably reviewed by the Engineer prior to installation.
- D. Underwriters Laboratories (UL) listing is required for all substituted equipment when such a listing is available for the first named equipment.
- E. When required by the Contract specifications or requested by the Engineer, the Contractor shall submit equipment or material samples for test or evaluation. The samples shall be furnished with information as to their source and prepared in such quantities and sizes as may be required for proper examination and tests, with all freight and charges prepaid. All samples shall be submitted before shipment of the equipment or material to the job site and in ample time to permit the making of proper tests, analyses, examinations, rejections, and resubmissions before incorporated into the work.
- F. All equipment shall be designed and constructed so that in the event of a power interruption, the equipment specified hereunder shall resume normal operation without manual resetting or operator interaction when power is restored.
- G. Signal transmission from remote or field electric and electronic devices shall be 4-20 mA, sourced by a 24 VDC loop supply from the panel that is to receive the signal. Nonstandard transmission methods such as impulse duration, pulse rate, and voltage regulated will not be permitted except where specifically noted.
- H. Outputs of equipment that are not of the standard signals as outlined, shall have the output immediately raised and/or converted to compatible standard signals for remote transmission.
- I. It is the System Supplier's responsibility to visit jobsite to collect and document existing equipment and MCC device part numbers for all similar new equipment to match existing.

2.02 NAMEPLATES & TAGS

- A. Equipment exterior nameplates - Nameplate material shall be rigid laminated black phenolic with beveled edges and white lettering; except for caution, warning, and danger nameplates the color shall be red with white lettering. The size of the nameplate shall be as shown on the drawings. No letters are allowed smaller than 3/16". All phenolic nameplates located outdoors shall be UV resistant. Securely fasten nameplates in place using two stainless steel screws if the nameplate is not an integral part of the device. Epoxy cement or glued on nameplates will not be acceptable. Engrave the nameplates with the inscriptions as approved by the Engineer in the submittal.
 - 1. For each major piece of electrical equipment provide a manufacturer's nameplate showing the Contract specified name and number designation, the manufacturer's name, model designation, part number, serial number, and pertinent ratings such as voltage, amperage, # of phases, range, calibration, etc.
 - 2. For each device with a specific identity (pushbutton, indicator, instrument, etc.) mounted on the exterior or deadfront of a piece of equipment provide a nameplate with the inscription as shown in the Contract documents. Where no inscription is indicated in the Contract documents, furnish nameplates with an appropriate inscription providing the name and number of devices.

3. For all receptacles and switches, provide a faceplate engraved or stamped with the panelboard and circuit number it is fed from. Also, include on faceplate or on a separate nameplate for each light switch identification use such as "OUTSIDE BUILDING LIGHTS", "PERIMETER LIGHTS", "MCC ROOM", etc. Adhesive plastic labels are not acceptable.
 4. All field instruments and devices shall be labeled with designation shown on P&ID diagrams.
 5. All transformers and panelboards shall have nameplates with 1/2" high letters and be engraved with designations as shown on one-line Drawings.
 6. All disconnect switches shall have nameplates with 1/2" high and be engraved with designations as shown on one-line drawings or as directed by Engineers.
 7. All safety and disconnect switches shall have nameplates with Y2" high letters and be engraved with designations as shown on one-line drawings.
 8. Underground Pull Box and Vault Cover Identification: Engrave or bead weld pull box covers with minimum 1/4" thickness and 1/2" letters and covers shall be engraved with designations as shown on Contract drawings or as directed by Owner.
 9. Aboveground Pull Box Cover Identification: 316 stainless steel screws attached stamped 316 stainless steel plate nameplates with 1/2" letters and be engraved with designations as shown on Contract drawings or as directed by Owner.
 10. Provide engraved nameplate at service entrance equipment (red with white lettering) indicating type and location of standby generator per NEC 702.7 (A).
 11. Provide engraved nameplate at service entrance equipment per NEC 702.7(B)
 12. Service Equipment Label: Per NEC 110.24 (A) Service equipment shall be legibly marked in field with the maximum available fault current. Field marking shall include date the fault current calculation was performed and be weather & UV rated. Service equipment shall not be hand labeled.
 13. Generator receptacles and generator lug panels shall have engraved nameplate with Y2" letters (red with white lettering) per NEC 702.7.(C)
- B. Equipment Interior Nameplates - Nameplate material shall be clear plastic with black machine printed lettering as produced by a KROY or similar machine; except caution, warning, and danger nameplates shall have red lettering.
1. The size of the nameplate tape shall be no smaller than 1/2" in height with 3/8" lettering unless otherwise approved by the Engineer. Securely fasten nameplates in place on a clean surface using the adhesion of the tape. Add additional clear glue to hold the nameplate securely in place when necessary.
 2. For each device with a specific identity (relay, module, power supply, fuse, terminal block, etc.) mounted in the interior of a piece of equipment provide a nameplate with the inscription as shown in the Contract documents. Where no inscription is indicated in the Contract documents, furnish nameplates with an appropriate inscription providing the name and number of devices used on the submittal drawings. Stamp the nameplates with the inscriptions as approved by the Engineer in the submittal.
 3. Nameplates shall not be attached to wireway covers or to removable devices.
- C. Equipment Tags - When there is no space or it is impractical to attach an engraved phenolic nameplate with screws, as is the case with most field devices and instruments,

the Contractor shall attach a tag to the equipment with the same inscriptions as specified above in paragraph A. The tag shall be made from stainless steel material and the size of the nameplate shall be no smaller than 3/8"h x 2"w with 3/16" machine printed or engraved lettering unless otherwise approved by the Engineer. Securely fasten tags in place using 316 stainless steel 0.048 inch diameter wire of the type normally used for this purpose (catalog cut sheet shall be submitted). Stainless steel wire shall be crimp connected. Twisting ends together is not acceptable. Twisting ends together is not acceptable.

- C. Engrave or machine print the nameplates and tags with inscriptions as approved by the Engineer in the nameplate submittal.
- D. Provide temporary labels for all instruments and devices immediately when installed. Temporary labels shall be provided with 1/2" letters minimum and labeled with P&ID tag number.

2.03 COMPONENTS

- A. Fuses
 1. Fuses used in circuits 200 VAC and above shall be time- delay type FNQ or approved equal, 13/32" x 1-1/2", and have an interrupting rating of 10,000 AIC at 500 VAC. Fuse holders shall be of the barrier type and rated 600 VAC.
 2. Fuses used in 120 VAC circuits shall be time-delay type MDL or approved equal, 1/4" x 1-1/4", and have a rating of 250 VAC. Fuse-holders shall be of the terminal block type.
 3. Fuses used in signal and 24 VDC circuits shall be fast acting type GMA or approved equal, 5mm x 20 mm and have a rating of 250 VAC. Fuse-holders shall be of the terminal block type.
 4. Fuses shall be sized in conformance with the NEC.
- B. Switches and Pushbuttons
 1. Switches (HS) and pushbuttons (HC) for general purpose applications shall be water and oil tight as defined by NEMA 4X, corrosion resistant as defined by NEMA ICS 6-110.58, U.L. listed, standard 30 mm diameter, with round plastic clamp ring. Switches shall be Allen-Bradley 800H or approved equal.
 2. Switches and pushbuttons shall have contacts rated 10 amperes continuous and 600 VAC.
 3. Manufacturer's standard size legend plates shall be provided and engraved to specify each switch and pushbutton function. The legend plate color shall be black. Stop and emergency stop pushbuttons shall have red legend plates.
 4. Selector switch handles shall be black. Pushbutton caps shall be colors shown on Contract Drawings or approved in submittals.
 5. Selector switches for hand-off-auto (HOA) applications shall have the hand position to the left, off in center, and auto in the right position.
 6. On/Off selector switches shall have the ON position to the right.
 7. Red mushroom operator, two position switch that latches in both "in" and "out" positions.
- C. Relays and Timers
 1. General: Relays and timers shall be provided with N.O. or N.C. contacts as shown on the Contract drawings. All spare contacts shown shall be provided. Contacts shall be rated 10 amps minimum at 120 VAC, 60 Hz unless otherwise stated.

Supply power or coil voltage shall be 120 VACS unless shown otherwise on the Contract drawings or when relay is utilized in 24V DC control circuits. Relays and timers shall be designed for continuous duty. All relays shall be U.L. listed. The following is a summary of abbreviations associated with relays and timers:

CR	Control relay
PFR	Power Fail Relay
ISR	Intrinsic Safe Relay
TR	Timing relay
TDOE	Time delay on energization
TDOD	Time delay on de-energization

2. Control relays (CR) shall be plug-in type with indicating lights and clear see-through sealed or enclosed housing to exclude dust. Sockets for plug-in relays shall be standard industrial type octal 8 or 11 pin with barrier pressure screw terminals. Provide IDEC Type RR, Potter and Brumfield KU, or approved equal. Two form-C contacts (minimum) shall be provided on each relay.
3. The power fail relay (PFR) shall continuously monitor the three phases for power loss, low voltage, phase loss, and phase reversal. The power fail relay shall have a drop-out voltage adjustment, a status indicating LED and two isolated N.O. contacts. Power fail relays shall be Diversified SLA, Time Mark, or approved equal.
4. Intrinsic safe relay (ISR) shall be Warrick Series 17AIEO operating from 120VAC power or approved equal. Sensitivity shall be 10,000 ohms. ISR shall be rated for Class 1, Division 1 sewage wet well applications.
5. Time delay relays (TR) shall be solid state plug-in relays with a timer adjustable over the range 1 second to 10 minutes unless other ranges are indicated or required. Provide LED timer energized indicator lamp. Sockets for plug-in timers shall be standard industrial type blade 8 or 11 pin with barriered pressure screw terminals. Time delay relays shall be IDEC, Potter and Brumfield, or approved equal.
6. Provide and install all moisture or temperature protection relays when required for equipment or motor/pump warranty conditions including any additional conduits for low voltage signal wiring. Submitted drawings shall include the wiring and terminations for all these relays.

D. Indicating Lights

1. Indicating Lights for general purpose applications shall be NEMA 4X, corrosion resistant as defined by NEMA ICS 6-110.58, U.L. listed, with 120 VAC LED lamp and built-in push-to-test switch, standard 30 mm diameter, with round plastic lens and miniature bayonet lamp base. Indication lights shall be Allen-Bradley 800H or approved equal.
2. Manufacturer's standard size legend plates shall be provided and engraved to specify each light's function. The legend plate color shall be black.
3. Indicating light type and color of lens shall be as shown on the Drawings or specified in the Contract documents. Lamp color will be as follows:
 - a. O p e n e d / O n G r e e n
 - b. C l o s e d / O f f R e d
 - c. A l a r m A m b e r

d. Power On White

4. Indicating lights designated "PTT" shall be provided with a push-to-test switch and wiring.

E. Circuit Breakers

1. Circuit breakers shall be of the indicating type, providing ON, OFF and TRIPPED positions of the operating handle. Circuit breakers shall be quick-make, quick-break, with a thermal-magnetic (TM) action, except when protecting motor feeders where motor circuit protector (MCP) breakers with adjustable magnetic trip shall be used. Panelboard circuit breakers shall be the bolt-on on type. The use of tandem or dual circuit breakers in a normal single-pole space to provide the number of poles or spaces specified are not acceptable. All multiple-pole circuit breakers shall be designed so that an overload on one pole automatically causes all poles to open. Circuit breakers and motor circuit protectors shall be manufactured by Eaton, G.E., ITE, or approved equal.
2. Breakers should be sized and have a minimum interrupting capacity as shown on Drawings and as required for the supplied equipment.
3. Breakers requiring GF trip on E-Series Drawings shall be provided with breakers with integral ground fault trip.
4. Circuit breakers feeding Soft Starters or VFDs shall have true adjustable Long, Short and Instantaneous trip units.
5. Thermal magnetic circuit breakers with frames 250A and above shall be provided with removable interchangeable trip units.
6. Fused disconnects shall not be used in place of breakers.
7. Breaker for HVAC equipment shall have HACR rating.
8. All breakers shall be supplied with the correct sized copper only lugs for wire sizes as listed in "Conduit & Wire Routing Schedule". Provide larger frame breaker or lug adapters as necessary when connecting to the listed oversized wire.

F. Control Power Transformer

1. Control power transformer shall be provided with a time-delay, slow-blow secondary fuse rated to protect the transformer and interrupt 10,000 amperes at 120VAC. Two primary fuses with KAIC interrupt rating of corresponding power connection shall be provided. Transformer size minimum ratings shall be as shown on Contract E-series drawings. When size is not shown on E-series Contract Drawings, then the following lists the minimum control power transformer per NEMA Starter size or VFD/Soft Starter size:

CONTACTOR NEMA SIZE STARTER	VFD/ SOFT STARTER AMPS	CTRL PWR XFMR VA RATING (MIN)
SIZE 00	9	150
SIZE 0	18	150
SIZE 1	27	150
SIZE 2	45	150
SIZE 3	90	250
SIZE 4	135	250
SIZE 5	270	250

G. Motor Starters

1. Motor starters (M) shall be magnetically operated, electrically held, full voltage, non-reversing except as shown on the Drawings. NEMA sizes shall be as required for

the horsepower shown on the Drawings. Starters that are not NEMA rated are not acceptable. Contractors shall be U.L. rated and listed. Motor starters shall be Eaton Freedom or approved equal.

2. Each motor starter shall have a 120 volt operating coil rated for continuous operation.
3. Auxiliary contacts shall be provided as shown on the Drawings or as required. Each motor starter shall be furnished with a minimum of 2 spare auxiliary contacts in excess from those shown to be used. Auxiliary contacts shall be convertible, in the field, from normally open to normally closed or vice versa. Overload relays shall be adjustable for trip point and for automatic or manual reset. Each overload shall be ambient compensated and shall trip on 600% of full load current in less than 6 seconds. Each overload relay shall have a test trip pushbutton built-in and an adjustable calibrated trip with indicating dial. Three-phase starters shall have 3 overload relays. Each overload relay shall have a normally closed holding contact and a normally open isolated contact for overload alarm. Heater elements shall be supplied that match motor nameplate amps. Motor overloads shall be Eaton Freedom or approved equal.

2.04 MOTOR CONTROL PANEL

- A. Provide motor control panel with fused disconnect, auxiliary run contact for remote monitoring, HOA selector switch, indicating lights, reset pushbutton, motor overloads, terminal blocks, and interlocks as shown on Contract P&ID Drawings.
- B. Motor controls shall be mounted on a backpan and installed in a NEMA 4X enclosure painted gray. Enclosure shall have a pad lockable disconnect switch for locking out pump operation.
- C. Motor control panel shall be Square D Class 8940, Eaton, or approved equal.

2.05 DISCONNECT SWITCHES

- A. Switches shall be provided with the voltage, and amperage rated as shown on the one-line and other Contract Drawings. All switches shall be UL labeled.
- B. Switches to be stainless steel NEMA rated as shown on Contract Drawings.
- C. The operating handle shall be capable of being padlocked in the "OFF" position. The operator shall be a positive, quick-make, quick-break mechanism. Disconnects shall be of the enclosed knife blade type.
- D. Switches shall be provided with defeatable door interlocks that prevent the door from opening when the operating handle is in the "ON" position. Handle position shall clearly indicate whether the switch is in "ON" or "OFF". Operating handle shall be an integral part of the enclosure frame and in no way part of the door or cover.
- E. Equipment ground kits and Mating Plug shall be furnished for each switch.
- F. Disconnect switches shall be Mennekes LockOUT-LET Series, Leviton, Square D, Eaton, or approved equal.

2.06 ELECTRICAL ENCLOSURES

- A. Enclosures to be NEMA rated per Indexes with fast access door latches. Enclosure construction shall be 14 gauge minimum with continuously welded seams. Outer door shall have provisions for locking enclosure with standard padlock. Provide full height white backpan and ground bus in each box. All fans and louvers shall be provided with removable metal filters. All panel doors shall be installed with ground straps. Provide larger enclosure as required to accommodate the supplied equipment at no additional cost to the Owner. Enclosure shall be Hoffman, Circle AW or approved equal.
- B. Provide metal data pocket within each enclosure and box to hold as-built drawings.

PART 3 – EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards outlined herein.
- B. The Contractor shall employ personnel that are skilled and experienced in the installation and connection of all elements, equipment, devices, instruments, accessories, and assemblies. All installation labor shall be performed by qualified personnel who have had experience on similar projects. Provide first class workmanship for all installations.
- C. The Contractor shall ensure that all equipment and materials fit properly in their installations.
- D. The Contractor shall perform any required work to correct improper installations at no additional expense to the Owner.
- E. The Engineer reserves the right to halt any work that is found to be substandard or being installed by unqualified personnel.
- F. All cutting and notching shall be laid out carefully in advance. Do not notch any structural member or building surface without specific approval from the Engineer. Carefully carry out any cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, paving, or other surfaces required for the installation, support, or anchorage of conduit, raceways, or other electrical materials and equipment. Following such work, restore surfaces neatly to new condition using skilled craftsmen of the trades involved. Refinish damaged surfaces to new condition using skilled craftsmen of the trades involved at no additional cost to the Owner.
- G. Keep the premises free from accumulation of waste material or rubbish daily. Upon completion of work, remove materials, scraps, and debris from the premises and from the interior and exterior of all devices and equipment. Refinish damaged surfaces to new condition using skilled craftsmen of the trades involved at no additional cost to the Owner.
- H. All equipment installed by the Contractor shall be in accordance with the Drawings and the manufacturer's recommendations & instructions and shall operate to the Engineer's satisfaction. Follow all manufacturers' instructions for handling, receiving, installation, and pre-check requirements prior to energization. After energization, follow manufacturer's instructions for programming, set-up and calibration of equipment. The Contractor shall be responsible for, and shall correct by repair or replacement, at his own expense, equipment that, in the opinion of the Engineer, has been caused by faulty mechanical or electrical assembly by the Contractor. Necessary tests to demonstrate that the electrical and

mechanical operation of the equipment is satisfactory and meets the requirements of these Specifications shall be made by the Contractor at no additional cost to the Owner.

3.02 CONSTRUCTION METHODS, GENERAL

- A. All field wires and panel wires shall have wire markers as specified in the "WIRE" Section.
- B. All wiring shall be neatly bundled and laced with plastic tie-wraps, anchored in place by screw attached retainer. Where space is available, such as in electrical cabinets, all wiring shall be run in slotted plastic wire ways or channels with dust covers. If space is not available for wireways, then all wiring shall be neatly bundled and laced with plastic tie-wraps, anchored in place by stainless screw attached retainer. Wire ways or channels shall be sized such that the wire fill does not exceed 50%. Wires carrying 100 volts and above shall be physically separated from lower voltage wiring by using separate bundles or wireways with sufficient distance to minimize the introduction of noise, crossing only at 90 degree angles. Tie-wraps shall be T&B TY-RAP or approved equal.
- C. Where wiring crosses hinged surfaces, provide a "U" shaped hinge loop protected by clear nylon spiral wrap. The hinge loop shall be of sufficient length to permit opening and closing the door without stressing any of the terminations or connections. Spiral wrap shall be Graybar T25N or approved equal.
- D. Wireways, retainers, and other devices shall be screw mounted with roundhead 316 stainless steel screws or mechanically mounted by push-in or snap-in attachments. Glue or sticky back attachment of any type or style shall not be used. Retainers shall be T&B TC series or approved equal.
- E. All components associated with a particular compartment's or enclosure's function shall be mounted in that compartment or enclosure.
- F. Spacing and clearance of components shall be in accordance with UL, JIC, and NEC standards.
- G. No wires shall be spliced without prior approval by the Engineer. Devices with pigtails, except lighting fixtures shall be connected at terminal blocks. Equipment delivered with spliced wires shall be rejected and the Contractor required to replace all such wiring, at no additional cost to the Owner.
- H. Where splices are allowed or approved by the Engineer they shall conform with the following:
 - 1. Wire splicing devices shall be sized according to manufacturer's recommendations.
 - 2. Splices of #10 and smaller, including fixture taps, shall be made with see-through nylon self-insulated twist on wire joints; T & B "Piggys", Ideal "Wing-Nut" or approved equal.
 - 3. Splices of #8 and larger shall be hex key screw two way connectors, with built in lock washers; T & B "Locktite", O-Z type XW or approved equal, insulated with 3M Scotch Super #88, Plymouth or approved equal.
 - 4. Splices in underground pull boxes shall be insulated and moisture sealed with 3M "Scotchcast" cast resin splice kits, Plymouth splice kits, or approved equal. Do not use splice kits with a date marking for shelf life that has expired.
 - 5. Tape on splices shall not be allowed.
 - 6. Splices for motor leads shall be made with 3M DB series splice kit or approved equal.

7. Where the T-leads to motors are larger than 10 AWG, Contractor shall use NSI Polaris connectors to terminate to the motor leads.
- I. Tapes shall conform to the requirements of UL 510 and be rated: 105 °C, 600V, flame retardant, hot and cold weather resistant. Vinyl plastic electrical tape shall be 7 mil black. Phase tape shall be 7 mil vinyl plastic, color coded as specified. Electrical insulation putty shall be rubber based, elastic putty in tape form. Varnished cambric shall not be used.
- J. Connections to terminals shall be as follows:
 1. Use connector or socket type terminals furnished with component.
 2. Connections to binding post screw, stud, or bolt use:
 - a. For #10 and smaller wire, T & B "Sta-Kon", Buchanan "Termend", or approved equal, self-insulated locking forked tongue lug.
 - b. For #8 to #4/0 wire, T & B "Locktite", Burndy QA, or approved equal, lug of shape best suited.
 3. Use ratchet type crimping tool which does not release until proper crimp pressure has been applied.
 4. Connections for all terminals shall be made with insulation stripped per manufacturer's instructions.
- K. Equipment shall be wired and piped by the manufacturer or supplier. Major field modifications or changes are not allowed without the written "change order" authority by the Engineer. When field changes are made, the components, materials, wiring, labeling, and construction methods shall be identical to that of the original supplied equipment. Contractor's cost to replace or rework the equipment to match original manufacturer or supplier methods shall be paid at no additional cost to the Owner.
- L. Mating fittings, bulkhead fittings, plugs, lugs, connectors, etc. required to field interface to the equipment and panels shall be provided by the supplier when the equipment is delivered.
- M. All electrical and instrumentation factory as-built drawings associated with the equipment shall be provided with the equipment when it is delivered to the job site. Drawings for each piece of equipment shall be placed in clear plastic packets of sufficient strength that will not tear or stretch from drawing removal and insertion.
- N. All wire and cable lugs shall be copper; aluminum or aluminum alloy lugs shall not be allowed. The Electrical Contractor shall supply all lugs to match the quantity and size of wire listed in the Conduit & Wire Routing Schedule.

3.03 EQUIPMENT FABRICATION, GENERAL

- A. Panel and enclosure cutouts for devices (i.e. indicating lights, switches) shall be cut, punched, or drilled and smoothly finished with rounded edges. Exposed metal from cutouts that are made after the final paint finish has been applied shall be touched up with a matching paint prior to installing device. Do not paint nameplates, labels, tags, switches, receptacles, conductors, etc.
- B. All Panel and enclosure doors shall be fully gasketed with non-shrinkable, water and flame resistant material.
- C. Bolts and screws for mounting devices on doors shall be as specified by the manufacturer, otherwise they shall have a flush head which blends into the device or door surface. No fastening devices shall project through the outer surfaces of equipment.
- D. No fastening devices shall project through the outer surfaces of equipment.

- E. Each component within the equipment shall be securely mounted on an interior subpanel or backpan and arranged for easy servicing, such that all adjustments and component removal can be accomplished without removing or disturbing other components. Mounting bolts and screws shall be front located for easy access and removal without special tools. Access behind the sub panel or backpan shall not be required for removing any component.
- F. A ground bus shall be provided in each enclosure or cabinet. It shall have provisions for connecting a minimum of ten grounding conductors. Screw type lugs shall be provided for connection of grounding conductors. All grounding conductors shall be sized as shown on plans or in accordance with NEC Table 250.122, whichever is larger.
- G. Minimum wire bending space at terminals and minimum width of wiring gutters shall comply with NEC Tables 312.(A) & (B).
- H. e sizes shall not be installed smaller than those shown in NEC Article 310 for each circuit amperage rating.
- I. Future device and component mounting space shall be provided on the door, backpan, and subpanel where detailed on the Drawings. Where no detail is shown, provide a minimum of 15 percent usable future space.
- J. Doors shall swing freely to a minimum of 90° and close with proper alignment.
- K. All control, power, and signal wireways inside enclosures shall be run in separate plastic wireways.
- L. TERMINATIONS: Single wire and cable conductors shall be terminated according to the requirements of the terminal device. All terminations must be made at terminals or terminal blocks. Use of spring or butt splice connectors are not allowed.
 - 1. Provide 3" minimum separation between wireway and terminal blocks. Installation of wireways too close to terminal blocks will be required to be completely reworked to the satisfaction of the Owner.
 - 2. For captive screw pressure plate type terminals, the insulation shall be removed from the last 0.25 inches of the conductor. The conductors shall be inserted under the pressure plate to full length of the bare portion of the conductor and the pressure plate tightened without excess force. No more than two conductors shall be installed in a single terminal. All strands of the conductor shall be captured under the pressure plate.
 - 3. For screw terminals, appropriately sized locking forked spade lugs shall be used. Lugs shall be crimp on type that form gas tight connections. All crimping shall be done using a calibrated crimping tool made specifically for the lug type and size being crimped.
 - 4. On shielded cables, the drain wire shall be covered with insulating tubing along its full bare length between the cable jacket and the terminal lug or terminal pressure plate.
 - 5. For screwless terminals, wire shall be stripped back and inserted per the manufacturer's instructions. When stripping insulation from conductors, do not score or otherwise damage conductor.
 - 6. Heat shrink shall be placed on ends of shielded cable to cover foil.
 - 7. Additional condulets with terminal blocks shall be supplied for wire termination to devices with leads instead of terminals (i.e. solenoid valves, level probe, etc.).

- 8. Terminate all status, control, and analog I/O wiring on terminal blocks, including spares. Provide additional relay, DIN rails, terminal blocks and side panels as required.
- M. All devices and wiring shall be permanently labeled and secured in accordance with paragraphs NAMEPLATES AND TAGS, WIRE and CONDUITS, RACEWAYS AND WIREWAYS.
- N. All components associated with a particular compartment's or enclosure's function shall be mounted in that compartment or enclosure.
- O. Spacing and clearance of components shall be in accordance with UL, JIC, and NEC standards.

3.04 DELIVERY

- A. Contractor shall inspect each electrical and instrumentation item delivered to the jobsite.
- B. Contractor shall unpack each item for inspection within two (2) days of arrival.
- C. Complete written inventory shall be produced by Contractor and submitted to Owner within (2) days after arrival on jobsite for record keeping prior to any payment for the item.
- D. All panels and enclosures are delivered with as-built drawings in clear plastic packets within each panel and enclosure.

3.05 DAMAGED PRODUCTS

- A. Damage products will not be accepted. All damaged products shall be replaced with new products at no additional cost to the Owner.

3.06 FASTENERS

- A. Fasteners for securing equipment to walls, floors, and the like shall be stainless steel. The minimum size fastener shall be 3/8 inch diameter. Layout to maintain headroom, neat mechanical appearance, and to support equipment loads required.
- B. Reinforced concrete pad with stainless steel anchor bolts shall be provided for floor mounted electrical enclosures.
- C. Anchor Methods
 - 1. Hollow Masonry: Sleeve type anchors.
 - 2. Solid Masonry: Sleeve type anchors or epoxy anchors bolts.
 - 3. Metal Surfaces: Machine screws, bolts, or welded studs.
 - 4. Concrete Surfaces: Wedge or expansion anchors.
 - 5. Structural Steel: Right angle, parallel and edge type rigid metal clamps. Do not weld or drill structural steel.
- D. Equipment Mounting
 - 1. The Contractor shall be responsible for furnishing and setting all anchor bolts required to install his equipment.
 - 2. Electrical equipment shall be Unistrut "standoff" mounted a minimum of 1/2 - inch from the wall in a manner so that the rear of the equipment is freely exposed to air circulation. Unistrut material shall be stainless steel in NEMA 4X areas and galvanized in non-NEMA 4X areas unless called out specifically in details.

3. All equipment enclosures shall be of the NEMA classification noted on the electrical plan Drawings for the area in which the device will be mounted.
 4. Reinforced concrete pad with stainless steel anchor bolts will be provided for each electrical freestanding equipment.
- E. Dissimilar metals such as aluminum, stainless steel, steel, galvanized steel between enclosures, devices, etc. and mounting surfaces shall be isolated from each other using insulated tape or nonmetal spacers. Tape and spacers used shall be specifically manufactured for this application.

3.07 INSTALLATION, GENERAL

A. System

1. Install all products per manufacturer's recommendations and the Drawings.
2. Provide all necessary hardware, conduit, wiring, fittings, and devices to connect the electrical equipment provided under other Sections. The following shall be done by the Contractor at no additional cost to the Owner:
 - a. Provide additional devices, wiring, conduits, relays, signal converters, and isolators to complete interfaces of the electrical and instrumentation system.
 - b. Changing normally open contacts to normally closed contacts or vice versa.
 - c. Adding additional relays to provide more contacts as necessary.
 - d. Installing additional terminal blocks to land wires.
 - e. Other work implied by contract documents.
3. All programmable devices shall be programmed, set up and tested by the Contractor prior to startup. This includes PLC, OI, and transmitters. Programming and set-up parameters shall be adjusted or changed as directed by the Owner or Engineer during start-up and throughout the warranty period, at no additional cost to the Owner.
4. Coordinate with the Owner and setup all alarm, process, and operation setpoints. Always keep a copy of the manufacturer's installation instructions on the jobsite available for review prior to and during any installation of the associated equipment.

B. Panels and Enclosures

1. Install panels and enclosures at the location shown on the Plans or approved by the Engineer.
2. Install level and plumb.
3. Provide larger motor termination boxes as required to accommodate conduit and wires.
4. Seal all enclosure openings to prevent entrance of insects and rodents.
5. All conduits entering outdoor panels and enclosures shall use watertight hubs. These hubs shall be located on sides or bottom only. Top entry of outdoor panels or enclosures is not allowed unless specifically shown on plans.
6. Clearance about electrical equipment shall meet the minimum requirements of NEC 110.26.

7. Additional condulets with terminal blocks shall be supplied for wire termination to devices with leads instead of terminals (i.e. solenoid valves, level probe, etc.).
8. Terminate all status, control, and analog I/O wiring on terminal blocks, including spares. Provide additional relay, DIN rails, terminal blocks and side panels as required.
9. A ground bus shall be provided in each enclosure or cabinet. It shall have provisions for connecting a minimum of ten grounding conductors. Screw type lugs shall be provided for connection of grounding conductors. All grounding conductors shall be sized as shown on plans or in accordance with NEC Table 250.122, whichever is larger.
10. All panels and enclosures are delivered with as-built drawings in clear plastic packets within each panel and enclosure. Provide data pocket holder in each enclosure.

C. Conduits and Ducts

1. Install all conduits and ducts per 16110 - Conduit, Devices, Boxes & Grounding System.

D. Wiring, Grounding, and Shielding

1. Wiring inside and outside equipment shall be installed per Section 16120.
2. It is important to observe good grounding and shielding practices in the generally noisy environment in this application. The shield of shielded cables shall be terminated to ground at one end only, the origination end. The shield at the other end shall be encased in an insulated material to isolate it from ground.
3. Special cables shall be provided when required by manufacturer or necessary to correct noise or distortion interference at no additional cost to Owner.
4. Field wiring shall not begin until interconnection drawings have been submitted by the Contractor and approved by the Engineer, as specified herein.
5. Ground all swinging gates and fences using UL approved ground clamps specifically designed for the grounding purpose. Strap metal is not acceptable for grounding.

E. Conduit and Wire Routing Schedule

1. Conduit material, wire size, and quantity listed in schedule take precedence over Division 16 Specifications.
2. All the entries for each line in the conduit schedule apply to each conduit when multiple quantity of conduits (quantity of which are indicated by number entered in conduit no. column in schedule) are listed in the schedule.
3. Wire sizes listed are in AWG or Kcmil and are copper conductors.
4. Extra wire was intentionally placed in the "Conduit & Wire Routing Schedule" which shall be labeled on both ends with a unique wire label.
5. Contractor to supply and install all conduits and wiring as shown on Utility Engineered Design drawings. Utility primary and secondary conduit and wiring shown in "Conduit and Wire Routing Schedule" is for bid purposes only. A credit or add-on will be provided by Contractor based on the actual work performed by Contractor for the Utility service.
6. All control and signal wiring terminations shall have the correct wire label applied prior to making connection.

7. Conduit entries listed as "GRS-PVC" in the Conduit & Wire Routing Schedule are to be "Galvanized Rigid Conduits with PVC coating" the entire length.
- F. Cutting and Patching
1. The Contractor shall do all cutting and patching required to install his work. Any cutting which may impair the structure shall require prior approval by the Engineer. Cutting and patching shall be done only by skilled labor of the respective trades. All surfaces shall be restored to their original condition after cutting and patching.
- G. Seals
1. Seal around all conduits, wires, and cables penetrating between walls, ceilings, and floors in all buildings with a fire stop material.
 - a. Provide seals on all penetrations between panels. Seal shall be made at both ends of the conduit with a fire stop putty.
 - b. Seal shall have a minimum two hour rating.
 - c. Fire stop sealing shall be International Protective Coatings Flame safe or approved equal.
 2. Seal around conduits entering outside to inside structures and around bottom of free standing enclosures to maintain watertight integrity of structure.
 3. Place conduit type seal in each underground conduit riser into panels and enclosures to prevent entrance of insects and rodents.
 4. Conduit entrances: Seal each conduit entrance from below grades into the panel and other electrical enclosures with plugging compound sealant to prevent the entrance of insects and rodents. Conduits between the enclosures shall be sealed with plugging compound sealant on each end. Plugging compound sealant shall be PRC-DeSoto (formerly Courtaulds) Aerospace Semco PR-868 or approved equal.
 5. Seal conduits entering any electrical instrument. Install conduit drain boxes and plug conduit interior to form an effective barrier to keep out water traveling into equipment or instrumentation from conduit installed higher than equipment or instrumentation.
- H. Housekeeping Pads
1. Concrete housekeeping pads are required for all free standing electrical equipment. Housekeeping pads shall be 3-1/2" inches above surrounding finished floor or grade unless otherwise shown and shall be 3 (minimum) inches larger in width and depth around equipment. Housekeeping pads shall be installed for future units as shown on the Contract Drawings.
 2. Housekeeping pad shall be high quality concrete with rebar woven into floor rebar network. Concrete shall be precisely leveled so that equipment set in place will not require shimming.
 3. Housekeeping pad shall be Class "A" concrete with rebar crossway network. The minimum size rebar allowed is #3. Concrete shall be precisely leveled so that equipment set in place will not require shimming.
- I. Cleaning and Touch-up
1. Prior to start up and at the completion of the work, prior to final acceptance all parts of the installation, including all equipment, exposed conduit, and fittings, shall be thoroughly cleaned of and given touch-up by Contractor as follows:
 - a. Remove all grease and metal cuttings.

- b. Any discoloration or other damage to parts of the building, the finish, or the furnishings, shall be repaired.
- c. Thoroughly clean any of his exposed work requiring same.
- d. Vacuum and clean the inside of all panels and electrical enclosures prior to applying power and a second time immediately prior to the final acceptance inspection. Removing debris with an air blower is not permitted.
- e. Clean all above and below ground pull boxes, junction boxes, and vaults from all foreign debris prior to final acceptance.
- f. Special "Soft-Jaw" type pipe clamps shall be used to prevent damage to PVC-coated conduit while field threading and cutting to length.
- g. Paint all scratched or blemished surfaces with the necessary coats of quick drying paint to match existing color, texture and thickness. This shall include all prime painted electrical equipment including but not limited to enclosures, poles, boxes, devices etc.
- h. Remove all decals and lettering from both sides of support plates.
- i. Repair damage to factory finishes with repair products recommended by Manufacturer.
- j. Repair damage to PVC or paint finishes with matching touchup coating recommended by Manufacturer.

3.08 SAFETY LOCKOUTS

- A. Contractor shall provide safety lockout tags on the breakers for all switchboards, MCCs and panelboards and other electrical enclosures. Safety tags shall not be the same as those used by the Owner. All padlocks used for this purpose shall be keyed differently from any of the Owner's padlocks. Padlocks shall remain in place by the Contractor until operation of the portion of work is turned over to the Owner with the responsibilities noted on the acceptance form.
- B. The following is the procedure for transferring each portion of work over to the Owner prior to completion of the entire project:
 - 1. Contractor shall inform the Owner when a portion of the work is complete, ready for inspection and available to be placed into operation.
 - 2. The Owner will schedule the inspection and substantiate that the work is complete and operational.
 - 3. The Contractor will correct any deficiencies.
 - 4. The Owner will prepare a Partial Utilization form in which that portion of the project will be turned over to the Owner with the responsibilities noted on the acceptance form. The Contractor then shall remove his safety lockouts and tags.
- C. Safety lockout tags shall be rigid vinyl with write-on surface and brass grommet. Safety tags shall be secured in place with cord of sufficient strength to prevent accidental removal or displacement. Safety lockout tags shall be Panduit Write-on Safety Tags, model PVT-98 or approved equal

3.09 OPERATION AND MAINTENANCE MANUALS

- A. Provide Operation and maintenance manuals bound in a three ring binder (Binder shall be sized such that when all material is inserted the binder is not over 3/4 full) with one set

made up completely with original manuals per this subsection & Division 1. O&M shall contain the following as a minimum:

1. A comprehensive index in each volume for all volumes.
 2. A complete "Record" set of favorably reviewed electrical submittals as provided under subsection Submittal and Drawing Requirements. Include as-built one-line, elevation, loop, elementary and interconnection drawings.
 3. A complete list of the equipment supplied, including serial numbers, ranges, catalog cuts, and pertinent data.
 4. Full specifications on each item.
 5. Detailed service, maintenance and operation instructions for each item supplied. Schematic diagrams of all electronic devices shall be included. A complete parts list with stock numbers shall be provided on the components that make up the assembly. All of these shall be originals, not copies.
 6. Record of the following:
 - a. Each motor nameplate data including manufacturer, full part number, size, voltage, amps, service factor, bearings, etc.
 - b. Each breaker and overload heater element including manufacturer, full part number, size, setting etc.
 - c. Spread sheet listing all setpoints and programmable parameters entered for this project for VFD, UPS, HIM, etc.
 7. Safety precautions and procedures.
 8. Special maintenance requirements particular to this system shall be clearly defined, along with special calibration and test procedures.
 9. Spread sheet listing all setpoints and programmable parameters entered for this project for VFD, PLC application program, all instrumentation and transmitters, etc.
 10. Include all completed and signed test data and forms from factory and field testing.
 11. No photocopies are allowed of standard published manuals available from manufacturers, such as for the VFD. All the manuals shall be originals.
 12. Factory & Field test results.
 13. Warranty certificate with start dates, duration and contact information.
 14. Troubleshooting instructions.
 15. Record of all settings or parameters for all programmable devices.
- B. At the end of the project these manuals shall be updated to show "as-built" conditions.
- C. Provide to the City four (4) each USB drives with lanyards and two sets of DVDs containing all documents in both PDF format and unlocked AutoCAD - DWG format, latest version, including:
1. As-built Contract electrical and instrumentation drawings prepared for this project.
 2. As-built sets of other computers generated documents prepared for this project, including PLC ladder logic files, and Bill of Materials prepared for this project.
 - a. As-Installed Software ladder logic programs.
 - b. As-Installed Software OI programs
 - c. As-installed software VFD/ SSS configuration settings.
 - d. Radio Configuration settings
 3. Electronic PDF version of O&M manual. Version format shall follow the

hard copy submittal of the O&M, including index, equipment record sheet, warranty information, theory of operation, maintenance instruction, etc. PDF shall be "bookmarked" at each index, subtab, transmittal letter, equipment record sheet, warranty information, theory of operation, maintenance instruction, etc. Failure to bookmark PDF may be grounds for immediate rejection without review. Bookmarks shall be descriptive of actual document, tab, etc. Bookmarks shall not be out of order; the English description shall match that listed in the Submittal's Table of Contents.

4. These files shall be the property of the Owner, for its use on this and future projects.
5. Label drives with site name using with clear plastic with black machine printed lettering as produced by a KROY or similar machine. The size of the nameplate tape shall be with 3/8-inch lettering unless otherwise approved by the Engineer. Securely fasten nameplates in place on the USB drive using the adhesion of the tape.

3.10 TESTING

A. General Requirements

1. It is the intent of these tests to assure that all equipment is operational within industry and manufacturer's tolerances and is installed in accordance with design plans and specifications.
2. All equipment setup and assembled by the Contractor shall be in accordance with the design plans and Drawings and the manufacturer's recommendations and instructions and shall operate to the Engineer's satisfaction. Follow all manufacturer's instructions for handling, receiving, installation, and pre-check requirements prior to energization. After energization, follow manufacturer's instructions for programming, set-up and calibration of equipment. The Contractor shall be responsible for, and shall correct by repair or replacement, at his own expense, equipment which, in the opinion of the Engineer, has been caused by faulty mechanical or electrical assembly by the Contractor. Necessary tests to demonstrate that the electrical and mechanical operation of the equipment is satisfactory and meets the requirements of these Specifications shall be made by the Contractor at no additional cost to the Owner.
3. The testing shall not be started until the manufacturer has completed fabrication, wiring, and setup; performed satisfactory checks and adjustments; and can demonstrate the system is complete and operational. Certification of completion of Contractor's in-house tests shall be submitted prior to scheduling of factory testing.

B. Electrical Field Tests

1. Prior to any field testing, Interconnection Drawings and Operation & Maintenance Manuals shall have been submitted by the Contractor and approved by the Engineer.
2. The Electrical Contractor shall engage and pay for the services of an approved qualified testing company for the purpose of performing inspections and tests as specified herein. The testing company shall provide all material, equipment, labor and technical supervision to perform such tests and inspections.
3. The Electrical Contractor shall be at the jobsite to assist with all Electrical Field Tests.
4. All test forms shall list all test equipment used to perform calibration and date of last calibration.

5. The first set of tests to be performed shall determine the suitability for energization and shall be completed with all power turned off and complete prior to the start of any of the Post-Energization Tests. The Electrical Contractor shall have qualified personnel on the job site for all Pre-Energization and Post-Energization tests.

6. Pre-Energization Tests: These tests shall be completed prior to applying power to any equipment.
 - a. Field Inspections
 - 1) Visual and Mechanical
 - a) Vacuum and clean the inside of all MCC and electrical and instrumentation enclosures prior to start of factory test.
 - b) Inspect for physical damage, proper anchorage, and grounding.
 - c) Compare equipment nameplate data with design plans and starter schedule.
 - d) Compare overload setting with motor full load current for proper size.
 - 2) Performed NETA acceptance testing for each piece of equipment.
 - 3) The Testing Company shall compile, by visual inspection a record of all motor nameplate data, the following minimum data shall be neatly tabulated in spreadsheet form and submitted to Owner:
 - a) Manufacturer
 - b) Part and model number
 - c) Equipment driven
 - d) Motor horsepower
 - e) Nameplate amperes, volts and phase
 - f) Service factor
 - g) Temperature ratings
 - h) Overload catalog number
 - i) Overload current range and setting
 - j) Circuit breaker rating
 - k) Circuit breaker trip setting, for magnetic only circuit breakers.
 - b. Torque Connections
 - 1) All electrical, mechanical and structural threaded connections inside equipment shall be tightened in the field after all wiring connections have been completed. Every worker tightening screwed or bolted connections shall be required to always have and utilize a torque screwdriver/wrench. Torque connections to the value recommended by the equipment manufacturer. If they are not available, use NEC 110-14 as guidelines.
 - c. Wire Insulation & Continuity Tests

- 1) All devices that are not rated to withstand the 500V megger potential shall be disconnected prior to the megger tests.
- 2) Megger insulation resistances of all 600 volt insulated conductors using a 500 volt megger for ten seconds. Make tests with circuits installed in conduit and isolated from source and load. Each conductor shall be meggered conductor to conductor and conductor to ground. These tests shall be done on cable after installation with all splices made up and terminators installed but not connected to the equipment.
- 3) Each megger reading shall not be less than 10 Meg-ohms resistive. Corrective action shall be taken if values are recorded less than 10 Meg-ohms. Values of different phases of conductors in the same conduit run showing substantially different Meg-ohm values, even if showing above 10 Meg-ohms shall be replaced.
- 4) Each instrumentation conductor twisted shielded pair shall have the conductor and shield continuity measured with an ohmmeter. Conductors with high ohm values, that do not match similar lengths of conductors the same size, shall be replaced at no additional cost to the Owner.

d. Grounding System Tests

- 1) Visual and Mechanical Inspection.
 - a) Verify ground system is in compliance with drawings and specifications.
- 2) Electrical Tests
 - a) Before making connections to the ground electrodes, and before placement of sidewalks, landscape and paving, measure the resistance of each electrode to ground using a ground resistance tester. Perform the test not less than two days after the most recent rainfall and in the afternoon after any ground condensation (dew) has evaporated.
 - b) After all individual ground electrode readings have been made, interconnect as required and measure the system's ground resistance.
 - c) Perform point-to-point tests to determine the resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points.
 - d) The grounding test shall be in conformance with IEEE Standard 81.
 - e) Plots of ground resistance shall be made and submitted to the Engineer for approval.
 - f) The current reference rod shall be driven at least 100 feet from the system under test.
 - g) Measurements shall be made at 10 foot intervals beginning 25 feet from the test electrode and ending 75 feet from it in a direct line between the system being tested and the test electrode.

- h) The resistance between the main grounding electrode and ground shall be no greater than five ohms for commercial or industrial systems for generating or transmission station grounds per IEEE Standard 142.
 - 3) Test Values
 - a) Investigate point-to-point resistance values that exceed 0.5 ohms.
 - e. Panelboard Test
 - 1) Visual and Mechanical Inspection:
 - a) Inspect for physical damage, proper anchorage and grounding.
 - b) Compare equipment nameplate data with design plans and starter schedule.
 - c) Compare breaker legend for accuracy.
 - d) Check torque of bolted connections.
- 9. Post Energization Tests
 - a. MCC Control System Tests
 - 1) Component Tests
 - a) Measure insulation resistance of starter phase to phase and phase to ground with the starter contacts closed and the protective device open. Test voltage and minimum acceptable values shall conform to NETA Section 3 "Test Values." Measure insulation resistance of each control circuit with respect to ground.
 - b) Motor overload units shall be tested by injecting primary current through overload unit and monitoring trip time.
 - c) Test the motor circuit protectors and thermal breakers as specified herein.
 - 2) Control Tests
 - a) Remove motor overload heaters from each motor starter or disconnect pump/motor coupling. In case the motor overload heaters are fed by current transformers, the motor conductors shall be removed and insulated away from the load lugs of the motor starter.
 - b) Verify the pump control circuits are wired and operate as shown on the elementary diagrams. Check the indicator lights, alarm lights, local & remote selector switches, alarm contacts, power fail relays, overloads, etc., for proper operation.
 - c) Reinstall all heaters and all wiring removed for this test.
 - b. Breaker Test
 - 1) All MCPs and breakers shall be checked for proper mounting, conductor size, and feeder designation. Operate circuit breaker to ensure smooth operation. Inspect case for cracks or other defects. Check tightness of connection with torque wrench in accordance with manufacturer's recommendations.

- 2) All Thermal magnetic (TM) breakers 100 amps and above shall be tested. Time current characteristic tests shall be performed bypassing three hundred percent (300%) rated current through each pole separately. Trip time and amps shall be determined. Instantaneous pickup current shall be determined by run up or pulse method. Clearing times should be within four (4) cycles or less. At end of test the thermal breakers shall be set by Contractor for proper coordination.
- 3) All MCPs breakers shall be tested by current injection method. Time current characteristic tests shall be performed bypassing rated current of trip setting value through each pole separately. At end of test the MCP breakers shall be set by Contractor to the proper multiple of the full load motor amp.
- 4) The ground fault protection system shall be performance tested when first installed on site per NEC 230.95(C). The test shall be conducted according to the manufacturer's instructions.
- 5) Contact and Insulation Resistance: Contact resistance shall be measured and be compared to adjacent poles and similar breakers. Deviations of more than 50% shall be reported to Engineer. Insulation resistance shall be measured and shall not be less than 50 megohms. All trip times shall fall within NETA Table values. Instantaneous pickup current levels should be within 20% of manufacturer's published values.

c. Phase Rotation Tests

- 1) Check connections to all equipment for proper phase relationship. During this test, disconnect all devices which could be damaged by the application of voltage or reversed phase sequence. Three phase equipment shall be tested for the phase sequence "ABC" front to back, left to right, and top to bottom.
- 2) All three phase motors shall be tested for proper phase rotation. Revise wire color codes to indicate correct phase color if wires are swapped.

d. Motor Testing

- 1) Record the amperage draw on all phases of each motor operating under full load. Ensure that these values do not exceed the motor nameplate full load amperage.
- 2) Record the voltage between all phases of each motor operating under full load. If the voltage balance is not within plus or minus 5 percent of nominal, request the Utility power company or other responsible party to correct the problem.
- 3) The Contractor shall compile, by visual inspection of equipment installed for each motor, the following data in neatly tabulated form and be placed in the O&M manual:

- a) Equipment driven.
 - b) Motor horsepower.
 - c) Nameplate amperes.
 - d) Service factor.
 - e) Temperature rating.
 - f) Overload catalog number.
 - g) Overload current range and setting.
 - h) Circuit breaker rating.
 - i) Circuit breaker trip setting, for magnetic only circuit breakers.
- e. Control System Tests
- 1) All the new I/O points for the PLC shall be tested by the supplier in the field for proper operation of alarms, status, analog, control, and operator display functions. Each of the control strategies listed in Section 16915 shall be tested and demonstrated to Owner for compliance by the System Supplier. Testing shall be accomplished using simulated inputs only with prior written approval of the Owner.
 - 2) All the I/O points for the PLC shall be tested by the Owner with assistance from Contractor for proper panel wiring. Where practical, the final element shall be used, i.e., trip the intrusion switch or change levels. During this task the Contractor shall have:
 - a) Qualified field technician with experience in the startup of similar systems to operate the PLC and other field devices.
 - b) Test instruments as required.
 - c) A pair of radios for communication.
 - 3) Electrical Tests
 - a) Perform operational tests by initiating control devices to affect proper operation.
- f. Instrumentation Tests
- 1) Instrumentation tests shall be conducted per the following criteria:
 - a) The overall accuracy of each instrument loop shall be checked to ensure that it is within acceptable tolerance.
 - 2) Calibration stickers shall be supplied for all equipment and instruments. Calibration stickers shall list the following information:
 - a) Tag number.
 - b) Calibrated by whom (name), firm, city and telephone number.
 - c) Date calibrated.
 - d) Calibration range.
 - e) Comments.
 - 3) The Contractor shall provide a minimum of two (2) hours of field acceptance testing for each instrument. If any instrument has not been fully tested during its allotted time, the Contractor shall

provide additional hours for finishing testing of the instrument, to be paid by the Contractor.

- C. Operational Testing
 - 1. After all the previous tests in this subsection are complete, the Contractor shall conduct operational testing.
 - 2. During operational testing the Contractor shall avoid surging discharge to the water distribution system.
 - 3. The Contractor shall demonstrate operation of each part of the electrical, control and instrumentation systems to the satisfaction of the Owner. Tests shall be repeated by the Contractor at no additional cost to the Owner and at the discretion of the Owner to resolve whether the system has demonstrated that it will operate under all modes of operations and varying conditions.
 - 4. For the operational testing the new equipment shall be activated to automatically run for 5 days, 24 hours per day, Monday through Friday. During this five day period the Owner will run the different combinations of the pump control options. If equipment failure occurs during the 5 days of operational testing, the Contractor shall repair or replace the defective equipment and shall begin another 5 day operational test, Monday through Friday. This shall be continued until the new equipment functions acceptably for 5 consecutive days.
 - 5. The Electrical Contractor, testing firm and System Supplier shall re-visit the jobsite as often as necessary until all field tests, start-up and operation tests are completed and approved.
- D. Final Acceptance Trial Period
 - 1. The system shall not be "finally" accepted unless the system functions without hardware failures or software problems during a 30 day trial period, to the satisfaction of the Owner. The Owner reserves the right to restart the 30 day trial period, at their discretion, when a major hardware failure has occurred or a software problem has been identified. The Owner will notify the Contractor when the 30 day trial period has been satisfactorily completed.
- E. The completion of the above tests does not relieve the Contractor from warranties specified herein.

3.11 SPARE PARTS

- A. The Contractor shall supply all spare parts prior to start of field tests. All parts shall be sealed in plastic bags and delivered to the site in a heavy duty plastic storage bag. Bag shall be clearly labeled with part name & number and the corresponding equipment tag name.
- B. The Contractor shall make available any replacement parts that are not manufacturer's normal stock items for immediate service and repair of all the instrumentation equipment throughout the warranty period.
- C. The following spare parts shall be provided to the Owner prior to start of field test as part of this Contract:
 - 1. Ten (10) fuses for each type of fuse.
 - 2. Twenty (20) lamps for each type of removable indicating light.
 - 3. Two (2) relays with bases for each type of control, and time delay relay.
 - 4. One (1) power fail relay.

5. One (1) spare Modicon Momentum DI, DO, AI, AO module for each type supplied.

3.12 TRAINING

- A. All training sessions shall be held on dates and times agreeable to Owner. A total of 6 or less Owner personnel shall be trained.
- B. After Operation Testing has started the Contractor shall provide a period of not less than 8 hours training for instruction of operation and maintenance personnel in the use of all the new control and instrumentation systems. The Contractor shall make necessary arrangements with manufacturer's representative. Provide product literature and application guides for user's reference during instruction.
- C. Arc Flash Training: The Supplier shall train Owner personnel of the potential arc flash hazards associated with working on energized equipment (minimum of 4 hours). Maintenance procedures shall be in accordance with the requirements of NFPA 70E, Standard for Electrical Safety Requirements for Employee Workplaces and shall be provided in the equipment manuals.
- D. Provide forty (40) hours minimum of "Operator" hands on Operator Interface training. Training shall also include training on the new Operator Interfaces.
- E. Provide 4 hours "Soft Starter Setup" operating and maintenance procedures by System Supplier.
- F. The "diagnostic and calibration" training, eight (8) hours minimum, shall demonstrate PLC hardware diagnostic routines, test equipment, PLC communication setup, and test procedures as required to enable the personnel to detect and isolate system faults to the circuit board or module level and to implement repairs by replacing failed circuit boards or modules. Demonstrate uploading and downloading software to make backups and restore programs.
- G. Acceptable Operation and Maintenance Manuals shall be on site and available when training sessions are implemented.

3.13 WARRANTY

- A. The Contractor shall warrant all electrical and instrumentation equipment & software for a period of one (1) year from date of final acceptance. Standard published warranties of equipment which exceed the preceding specified length of time shall be honored by the manufacturer or supplier.
- B. The Contractor shall provide all labor and material to troubleshoot, replace, or repair any hardware or software that fails or operates unpredictably during the warranty period, at no additional cost to the Owner.
- C. The Contractor shall have a staff of experienced personnel available to provide service on 2 working days' notice during the warranty period. Such personnel shall be capable of fully testing and diagnosing the hardware & software and implementing corrective measures.
- D. If the Contractor "fails to respond" in 2 working days, the Owner at its option will proceed to have the warranty work completed by other resources; the total cost for these other resources shall be reimbursed in full by the Contractor. "Fail to respond" shall be defined as: The Contractor has not shown a good faith effort and has not expended adequate resources to correct the problem. The use of other resources, as stated above, shall not change or relieve the Contractor from fulfilling the remainder of the warranty requirements.

- E. Prior to "final acceptance", the Contractor shall furnish to the Engineer a listing of warranty information for all manufacturers of materials and equipment used on the project. The listing shall include the following:
 - 1. Manufacturer's name, Material and equipment description, equipment number, part number, serial number, and model number.
 - 2. Manufacturers service contact person, phone number, and address.
 - 3. Warranty expiration date.
- F. Each time the Supplier's repair person responds to a system malfunction during the warranty period, he or she must contact the designated Owner maintenance supervisor for scheduling of the work, access to the jobsite, and permission to make repairs. Operation of facilities necessary to test equipment shall only be performed by or under the direction Owner staff. Owner reserves the right at its sole discretion to deny operations requested by the Supplier. A written description of all warranty work performed shall be documented on a field service report to be given to Owner prior to the repair person leaving job site. This field service report shall detail and clearly state problem, corrective actions taken, additional work that needs to be done, data, repair person name and company.

3.14 FINAL ACCEPTANCE

- A. Final acceptance will be given by the Owner after the equipment has passed the "final acceptance trial period", each deficiency has been corrected, final documentation has been provided, and all the requirements of design documents have been fulfilled.
- B. Upon completion of the project, prior to final acceptance, remove all temporary services, equipment, material, and wiring from the site.
- C. At the end of the project, following the completion of the field tests, and prior to final acceptance, the Supplier shall provide the following to the Owner:
 - 1. Remove all temporary services, equipment, material, and wiring from the site.
 - 2. Verify Service equipment has been legibly marked in field with the maximum available fault current per NEC 110.24 (A). Field marking shall include date the fault current calculation was performed and be weather & UV rated. Service equipment shall not be hand labeled
 - 3. Two sets of all keys for locks supplied on this project. Submit each key with matching duplicate. Wire all keys for each lock securely together. Tag and plainly mark with lock number or equipment identification, and indicate physical location, such as panel or switch number.
 - 4. Verify that as-installed drawings, in reinforced clear plastic pockets, have been placed in all panels
 - 5. Resubmit all Electrical System Analysis studies with all calculations rerun data and graphs updated to reflect as-left conditions. Provide new Arc Flash labels to reflect as-constructed equipment and as-left circuit breaker settings.
 - 6. Provide the following final documentation to the Owner:
 - a. A list of names, addresses and phone numbers of service personnel to be contacted for warranty work.
 - b. Two (2) Electrical Systems Analysis DVDs of as-built set of studies, reports, settings, etc. and source files per Section 16605.
 - c. Operations and Maintenance Manual – Each "operation and maintenance" manual shall be modified or supplemented by the Supplier to reflect all field changes and as-built conditions.

- d. Record full size drawings neatly marked accurately showing the information required herein. Two (2) disk copies of all final documentation to reflect as-built conditions.
- e. Four (4) USB drives with copies of all final documentation to reflect as-built conditions.
- f. At least one set of manuals, all software, disks and required programming cables shall be turned over to the Owner's SCADA/Electrical division.

*****END OF SECTION*****

SECTION 16075 - ELECTRICAL IDENTIFICATION

PART 1 GENERAL

1.2 SUMMARY

- A. Section Includes: Identification of electrical conductors, raceways and equipment, and electrical equipment signs.

1.3 REFERENCES

- A. National Electrical Code (NEC):
 1. Article 110–22 - Disconnecting Means.
 2. Article 210–4 - Multiwire Branch Circuits.
 3. Article 200 - Use and Identification of Grounded Conductors.
 4. Article 384 - Switchboards and Panelboards.
 5. Article 300 - Wiring Methods.

1.4 SUBMITTALS

- A. Shop Drawings:
 1. General: Submit shop drawings for electrical equipment room layouts, drawn at a minimum at 1/4 inch = 1 foot, scale.
 2. Cross Reference: Diagram shall carry a uniform and coordinated set of wire numbers and terminal block numbers to permit cross-referencing between the contract document drawings, the drawings prepared by the CONTRACTOR, and equipment O&M Manual Drawings.
 3. Drawing number cross references and continuation references shall also be provided. CONTRACTOR-prepared drawings shall reference applicable CONTRACTOR drawings such as P&IDs, control and logic diagrams, interface wiring diagrams, panel drawings, etc. CONTRACTOR-prepared drawings shall also reference applicable drawings provided by equipment manufacturers.
 4. On any drawing prepared for this project, if a wire, circuit, enclosure, panel, or device is continued on another drawing, the continuation drawing shall be referenced (and vice-versa). Wherever wires are shown connected to terminals, the drawings which show the continuation of the circuits on those terminals must be referenced.
 5. Interconnection Diagrams: Cables shall not be installed into raceways until the wiring interconnection diagrams are reviewed by the design engineer.
 6. Include tagging system, labels, markers, hazard tape, nameplates and signs.
- B. Product Data: Include tagging system, labels, markers, and hazard tape.
- C. Project Record Documents:
 1. Document wire, cable, and conductor tags, and bundle tags installed in accordance with the Contract Documents.
 2. Document installed wire, cable, and conductor tags and bundle tags when not specifically indicated.
 3. Indicate on Record Drawings deviations from accepted shop drawing conductor identification.

1.5 QUALITY ASSURANCE

A. Pre-installation Conference:

1. Purpose: To clearly define requirements specified for circuit/cable/conductor identification, hold a meeting including representatives of CONTRACTOR, OWNER, and ENGINEER prior to significant cable or conductor purchase and installation/termination.

PART 2 PRODUCTS

2.1 LABELS

A. Manufacturers: One of the following or equal:

1. Brady.
2. Seton.

B. Type: Sleeve type.

2.2 CONDUCTOR AND CABLE MARKERS

A. Manufacturers: One of the following or equal:

1. Brady.
2. Seton.

B. Type: Slip-on PVC sleeve or strap-on type.

C. Printed using Brady marker "XC PLUS," or equal.

D. Markers used in tunnels or other wet locations shall be on heat-shrinkable marking sleeves.

E. Use self-laminating vinyl on white background for markers within electrical equipment such as panels, termination cabinets, motor control centers.

2.3 RACEWAYS IDENTIFICATION (TAGS)

- A. Conduit numbers shall be pressure stamped into a noncorrosive 2 inch long, 1/2-inch wide stainless steel tape, Dymo marking system or equal. A tag with number shall be fixed with No. 18 AWG or larger type 304 stainless steel wire, to each conduit segment and at the end of each conduit and within 3 feet of each pull box, panelboard and switchboard.

2.4 NAMEPLATES, LABELS AND SIGNS

A. Nameplates:

1. Type: Black lamicaid with white letters.
2. Fastener: Round head stainless steel screws.

B. Automatic Equipment and High Voltage Warning Signs:

1. Type: Suitable for exterior use and meeting OSHA regulations.

C. Underground Hazard Tape: 6 inches wide.

1. Manufacturers: One of the following or equal:

- a. Panduit.
- b. Thomas and Betts.

PART 3 EXECUTION

3.1 CIRCUIT IDENTIFICATION

- A. Identify 3-phase system conductors and cables as Phases A, B, and C and identify 1-phase system conductors and cables at electrical equipment including, but not limited to, switchgear, switchboards, panelboards, motor control centers, and motors.
 - 1. Match OWNER's existing electrical system identification scheme or meet requirements of the authority responsible for the project.
 - 2. 3-phase 480 Volts AC System Conductors: Phase A, brown; Phase B, orange; Phase C, yellow.
 - 3. Single-Phase Conductors for 120/240 VAC Circuits: Phase A, black; Phase B, red; Phase C, blue.
 - 4. Neutral Conductor: White for 120 VAC and gray for 277 VAC.
 - 5. Insulated Equipment Grounding Conductor: Green.
 - 6. General Purpose AC Control Conductors: Purple.
 - 7. General Purpose DC Control Conductors: Purple with white stripes.
- B. Use color coding and phasing consistently throughout the site. Bus bars at panelboards and motor control centers to be connected Phase A-B-C, top to bottom, or left to right facing connecting lugs.
- C. Conductors Number 2 American Wire Gauge (AWG) and smaller to be factory color coded with a separate color for each phase and neutral, which shall be used consistently throughout the system. Larger cables to be coded using colored tape.
- D. In addition to color coding, for all 1-phase and 3-phase systems, identify each cable (single or multi-conductor) and conductor at each end, in each manhole, pull box, cable tray, or other component of the raceway system. This identification is applicable to all power, control, alarm, signal, and instrumentation cables, and conductors.
- E. Identify each cable (single or multi-conductor) and groups or bundles of individual single conductors in each manhole, pull box, cable tray or other component of the raceway system with circuit identification markers. Implement a "from-to" cable/conductor bundle tagging system as part of this identification effort.
- F. Identify each individual conductor at each termination. This includes such locations as switchgear, switchboards, motor control centers, variable frequency drives, control panels, junction/terminal boxes, all field devices, and all other locations where conductors are terminated. Identify the termination of these conductors in accordance with the accepted shop drawings. Tag conductors with sleeve type labels.
- G. Where more than 1 nominal voltage system exists, identify each ungrounded system conductor by phase and system. Permanently post means of identification at each branch-circuit panelboard, switchboard, switchgear, motor control center, or other type of power distribution equipment.
- H. Include the following minimum information for wire and cable identification.
 - 1. Circuit number or load identification tag number.
 - 2. Origin (from source).
 - 3. Destination (to load).

3.2 NAMEPLATES

- A. Furnish and install nameplates for all electrical equipment indicated on the Drawings or specified.
- B. Each disconnect means for service, feeder, branch, or equipment conductors and pushbutton stations shall have nameplates indicating its purpose or identifying the load.

3.3 AUTOMATIC EQUIPMENT WARNING

- A. Mount permanent warning signs at mechanical equipment which may be started automatically or from remote locations. Fasten warning signs with round head stainless steel screws or bolts, located and mounted in a manner acceptable to ENGINEER.
- B. Place a warning ribbon or other effective means suitable for conditions above duct bank underground installations.
- C. Place warning signs on utilization equipment that has more than one source of power. Provide panel and circuit number of conductor tag of the power source disconnect.
- D. Place warning signs on utilization equipment that has 120 VAC control voltage source used for interlocking. Provide panel, circuit number, and conductor tag of control voltage source disconnect.

*****END OF SECTION*****

SECTION 16110 - CONDUIT, BOXES & GROUNDING

PART 1-GENERAL

1.01 - SCOPE OF WORK

- A. The Contractor shall install, ready for use, the conduit, devices, boxes, & grounding system as specified herein. This document describes the function and operation of the system and particular components but does not necessarily describe all necessary devices. All components and devices shall be furnished and installed as required to provide a complete operable and reliable system for accomplishing the functions and meeting the performance set forth hereinafter.
- B. Furnish all required labor, materials, project equipment, tools, construction equipment, safety equipment, transportation, test equipment, incidentals, and services to provide a complete and operational conduit, devices, boxes, & grounding system as shown on the Drawings, included in these Specifications, or required for fully operating facilities.
- C. Work includes that specified in Section 16010 - Electrical.
- D. The conduit, devices, boxes, & grounding system scope of work includes:
 - 1. Provide and install miscellaneous trenching, conduits, junction boxes, field interconnection wiring, and associated hardware.
 - 2. Provide all necessary hardware, conduit, wiring, fittings, and devices to connect the electrical equipment provided under other Sections.
 - 3. Provide disconnect switches at all control panels and motors to disconnect all sources of power.

1.02 - SUBMITTALS AND DRAWINGS

- A. Provide submittals and drawings as specified in Section 16010 - Electrical, SUBMITTAL AND DRAWING REQUIREMENTS. Submittals for the Conduit materials and equipment shall include, but shall not be limited to, the following:
- B. Catalog cuts showing manufacturer, catalog numbers, dimensions, weights and material for all raceway and accessories.
- C. Dimensioned "as-built" Drawings of Contract Electrical plans
- D. Marked up "as-built" Conduit & Wire Routing Schedule.

1.03 - QUALITY ASSURANCE

- A. Materials shall be of a manufacturer that has been fabricating and assembling specified raceway systems in his current facility for a minimum of two (2) years.
- B. All materials selected for the manufacture of the hardware shall be the best available for the purpose for which they are used, considering strength, ductility, durability, and the best engineering practice.
- C. All like parts shall be interchangeable.

PART 2 – PRODUCTS

2.01 - CONDUIT, RACEWAYS AND WIREWAYS

- A. GENERAL - Conduit, raceways and wireways, wiring methods, materials, installation shall meet all requirements of the NEC, be UL labeled for the application, and meet the minimum following specifications.
1. All wiring shall be installed in conduits, raceways, or wireways when interconnecting equipment and devices
 2. The Contractor shall use special conduit, raceways, wireways, construction methods, and materials as shown on the Contract drawings, which shall take precedence over any general methods and materials specified in this Section.
 3. The minimum size conduit shall be 3/4-inch unless indicated otherwise on the Drawings or for special connections to equipment.
 4. Conduit stubs for future use shall be capped with coupling, nipple, and plug.
 5. Conduits to be abandoned that protrude above graded shall be cut flush and filled with grout.
 6. Conduits shall not be filled to more than 50% of their total cross – sectional area.
 7. Conduit drains shall be installed with GRS-PVC condulets-T with Stainless Steel Universal Conduit Drain, Appleton ECDB38 or approved equal. Install in conduit locations where condensation may form.
 8. Conduit Marking
 - a. All conduits (except receptacle and lighting wiring) shall have conduit tags at both terminations of each conduit.
 - b. Tag material shall be 19 gauge brass or stainless steel tag with engraved lettering. The size of the tag shall be 2" diameter. No letters are allowed smaller than 7/16". Securely fasten tags in place using 316 stainless steel 0.048 inch diameter wire of the type normally used for this purpose (catalog cut sheet shall be submitted). Stainless steel wire shall be crimp connected.

Twisting ends together is not acceptable. Engrave the tags, on both sides, with the conduit number as listed in the Conduit and Wire Routing Schedule on the Contract "E"-series Drawings. Labeling shall be neatly installed for visibility and shall be clearly legible. Conduit tags shall be Brady Valve Tags or approved equal.
 - c. Prior to encasement, concealment, backfilling of conduits, temporary conduit labels shall be provided at each end of conduit. Temporary conduit labels shall have 1/2-inch (minimum) lettering at all transition points. After encasement and concealment temporary conduit labels shall be placed at each exposed end.
- B. Galvanized Rigid Steel Conduit - (GRS)
1. Standard weight, zinc coated on outside by hot-dipping or sherardizing process, with either zinc coated or other approved corrosion resistant coating on inside. Fabrication shall be hot dip galvanized after fabrication, conforming to NEMA RN 1.
 2. Galvanized rigid steel factory elbows for 90 degree transitions in NEMA 1 or 12 locations. NEMA 4X area transitions shall be GRS-PVC factory eels.
 3. Fittings shall be hot dipped galvanized steel or galvanized cast ferrous metal. Provide threaded-type fittings, couplings, and connectors; set-screw type and compression-type are not acceptable.
 4. All joints shall be treated with T & B "Kopr-Shield".

5. Conduits entering enclosures shall be fitted with insulated grounding bushing; O-Z "HBLG", Appleton "GIB", or approved equal. All grounding bushings shall be tied to the grounding system with properly sized bonding conductors per the NEC code.
 6. EMT or IMC is not considered an equivalent to GRS.
 7. GRS conduit is allowed only when specifically called out in the "Conduit and Wire Routing Schedule".
 8. Pipe straps for conduits larger than 3/4" shall be two-hole pipe straps. 3/4" conduits may have single-hole GRS-PVC pipe straps with clamp back spacer.
- C. Galvanized Rigid Steel Conduit - PVC Coated (GRS-PVC)
1. Standard weight, galvanized conduit with a 40-mil thick polyvinylchloride coating bonded to both the outside and urethane interior coating. Conduit shall be hot-dip galvanized conforming to NEMA RN 1. GRS-PVC conduit to be Robroy Plasti-bond Red or approved equal.
 2. Provide PVC coated galvanized rigid steel factory ells for 90 degree transitions.
 3. Fittings shall be hot dipped galvanized steel or galvanized cast ferrous metal with a PVC 40 mils thick coating. Provide threaded-type fittings, couplings, and connectors; set-screw type and compression-type are not acceptable.
 4. All joints shall be treated with T & B type CP "Kopr-Shield", LPS No. 3 rust inhibitor or approved equal.
 5. All junction and metal pull boxes shall be galvanized with exterior surfaces PVC coated to 40 mils thickness.
 6. Conduits entering enclosures shall be fitted with insulated grounding bushing; O-Z "HBLG", Appleton "GIB", or approved equal. All grounding bushings shall be tied to the grounding system with properly sized bonding conductors per the NEC code
 7. PVC coating patching material shall be as provided by the manufacturer.
 8. PVC coated Aluminum conduit is not acceptable.
- D. PVC Conduit (PVC)
1. Minimum trade size one inch (1").
 2. Shall be high impact schedule 40 or 80 (as specified in conduit schedule), polyvinylchloride suitable for use underground, direct burial and for use with 90 C wires, and shall conform to UL 651. Shall be UL listed and labeled for "direct" burial.
 3. A copper bonding conductor shall be pulled in each raceway and bonded to equipment at each end with approved lugs.
 4. Each underground run shall be placed in a trench with a minimum of four (4) inch sand bed evenly compacted on all sides, top and bottom.
 5. Bends, elbows, and risers shall be made with galvanized rigid steel (GRS) conduit using threaded adapters. Bond each metallic portion to each other and to equipment connected at each end of conduit run.
 6. PVC fittings shall have solvent-weld-type conduit connections.
 7. PVC conduit shall be stored on a flat surface and shielded from the sun.
 8. PVC conduit shall not be used above grade.
- E. Liquid-Tight Flexible Metal Conduit (FLEX)
1. Minimum trade size one-half inch (1/2").
 2. Connectors: Appleton "STB" or approved equal through two inches (2") trade size. Appleton "ST", O-Z "4Q", or equal with insulated bushings for over two inches (2") trade size.

3. Suitable for connection of indoor or outdoor motors, controls, and mechanical equipment.
 4. Shall be used for conduit coupling to all vibrating and shifting equipment.
 5. Flexible conduit lengths shall not be greater than 36 inches.
 6. Flexible metallic conduit shall not be considered as a ground conductor, install a separate wire for equipment bonding.
 7. Flexible conduit shall only be installed in exposed or accessible locations.
 8. Final connections to vibrating equipment such as motors and fans shall be made with flexible conduits
- F. Fittings
1. GRS Fittings:
 - a. Fittings for GRS conduits shall be threaded type. Set-screw type and compression-type are not acceptable. Fittings shall conform to the requirements of ANSI C80.4.
 2. Flex Fittings:
 - a. Non-NEMA 4X locations shall have cadmium-plated malleable iron body and gland nut with cast-in lug, brass grounding ferrule threaded to engage conduit spiral and O-ring seals around the conduit and box connection and insulated throat. Fittings, for non-NEMA 4X locations only, shall be Appleton "STB" OZ "4Q" or approved equal.
 - b. NEMA 4X rated areas shall have PVC coated flex fittings and connectors.
 3. GRS-PVC Fittings:
 - a. GRS-PVC fittings shall be hot dipped galvanized steel or galvanized cast ferrous metal with a PVC 40 mils thick coating. Provide threaded-type fittings, couplings, and connectors; set-screw type and compression-type are not acceptable. Fittings shall be Robroy Liquitite, Perma-Cote, or approved equal coated fittings.
 4. EMT Fittings:
 - a. Couplings shall be raining tight compression type Appleton 93T Series, Efcor 760 Series, or approved equal.
 - b. Connectors shall be raining tight compression type with insulated throat Appleton 84T Series, Efcor 750B Series, or approved equal.

2.02 - DEVICES

- A. Boxes
1. Device boxes shall be of zinc-galvanized steel type or cast aluminum with shape and size best suited for the application, rated for the location installed, and shall be supported directly to structure by means of screws, anchors, or bolts. Device boxes shall be deep FD series.
 2. Box dimensions shall be in accordance with size, quantity of conductors, and conduit clearances per NEC articles 314 requirements.
 3. Boxes shall be located and placed according to Owner requirements.
 4. All terminal and junction boxes shall be labeled identifying them by number shown on Contract Drawings engraved with 1/2" letters on nameplates meeting the requirements of Electrical 16010.
 5. Non-Weatherproof Boxes:
 - a. Recessed boxes shall be flushed with wall. Boxes for fixtures shall not be less than four (4) inches square or diameter. Boxes for switches and receptacles shall be

two and one-eighth inch (2-1/8) deep. Provide plaster rings or box cover adapters for the wall surface finish.

b. Surface boxes shall be cast ferrous, deep FD type.

6. Weatherproof Boxes:

a. Boxes located in NEMA 4X areas shall be stainless steel type rated NEMA 4X.

b. PVC-coated cast ferrous boxes may be used in place of 316 stainless steel boxes, except where boxes contain devices on cover. Boxes shall be deep, FD type. Single gang boxes shall have cast hubs.

7. Explosion-proof Boxes:

1.07.1.1.1 Boxes shall be rated for Class 1, DIV 1 or 2 and weatherproof locations.

B. Switches

1. General purpose switches shall be manufactured in accordance with UL 20. Switches shall be one pole rated, 20 amps, at 277 VAC. Bodies shall be of ivory phenolic compound supported by mounting strap having plaster ears. Switches shall have copper alloy contact arm with silver cadmium oxide contacts. Switches shall have slotted terminal screws and a separate green grounding screw. Furnish Hubbell 1221, Leviton 1201-2, or approved equal.

2. Special purpose switches shall be provided with the amperage, voltage, and configuration as shown on the Drawings. Switches used as motor disconnects for single phase motors shall be horsepower rated.

C. Receptacles

1. General purpose receptacles shall be duplex and rated 20 amps, 120 VAC, 2 pole, 3 wire grounding, NEMA 5-20R configuration, specification grade, and side wired to screw terminals. Face color shall be brown in industrial areas and white or ivory in finished areas. General purpose receptacles shall be Bryant, Hubbell, or approved equal.

2. UPS receptacle shall be single receptacle with orange faceplate.

3. GFI (ground fault circuit interrupting) receptacles shall be used for providing power to miscellaneous cord powered equipment. GFI receptacles shall be duplex, 20A, 120V, with "test" and "reset" buttons with shallow design for mounting and standard screw terminals for direct wiring. Receptacles shall be designed, manufactured, and tested to prevent nuisance tripping from voltage spikes, RFI, EMI, or electronic component failures. Chaining multiple receptacles from one GFI unit is not acceptable. GFI receptacles shall be Arrow-Hart "specification grade" or approved equal.

D. Device Plates and Covers

1. General purpose device plates and covers shall be anodized aluminum. Plates or covers shall be attached with stainless steel screws.

2. PVC coated device boxes shall have PVC-coated, gasketed covers.

3. Weatherproof switch, outlet, and receptacle boxes shall be fitted with Diecast, gasketed covers rated for wet locations in accordance with NEC 406.9. Each access cover shall have a cover to maintain the weatherproof integrity even when a plug is connected to the receptacle. Screws and hinge springs shall be stainless steel. Weatherproof access covers shall be Hubbell, Crouse-Hinds, or approved equal.

4. Receptacle and light switch plates shall be stamped or engraved with 3/16" minimum letters stating the panelboard name and circuit breaker feeder number.

2.03 - PULL BOXES

A. Boxes

1. Each box shall have type construction and shall be manufactured of stainless steel. Cover shall be attached with stainless steel screws. No devices, screws, rivets, or bolts shall protrude through the exterior surface unless specifically shown on the drawings. Provide larger box as required to accommodate the conduits and wire at no additional cost to the Owner. Boxes shall be Circle AW or approved equal.

B. Underground Boxes

1. Underground pull boxes, where shown or required by length of conduit runs, shall be prefabricated concrete type with the size shown on the Drawings or larger to allow for adequate pull area. Extension sections shall be provided as necessary to reach the depth of underground conduits. All boxes shall have galvanized steel hold down bolts and hardware. Boxes located in paved areas or other areas which vehicles may travel shall be full H/20 loading rated and have traffic covers. Steel covers or lids shall be galvanized. Pull box covers shall be labeled power, signal, utility, telephone, whichever applies. Pull boxes shall be Christy Concrete Products, Brooks or approved equal.

C. Provide nameplates for all boxes per Electrical 16010.

2.04 - CONDUIT SEAL

- A. Seal around all conduits, wires, and cables penetrating between walls, electrical panels, ceilings, and floors in all buildings with a fire stop material. Seal shall be made at both ends of the conduit with a fire-stop putty. Seal shall have a minimum two hour rating. Fire stop sealing shall be International Protective Coatings Flame safe or approved equal.
- B. Seal around conduits entering outside to inside structures and around bottom of free standing enclosures to maintain watertight integrity of structure.
- C. Conduit entrances: Seal each conduit entrance entering the panel and other electrical enclosures with plugging compound sealant to prevent the entrance of insects and rodents. Conduits between the enclosures shall be sealed with plugging compound sealant on each end. Plugging compound sealant shall be PRC-DeSoto (formerly Courtaulds) Aerospace Semco PR-868 or approved equal.
- D. Conduit seal shall provide high adhesion and moisture protection. Seal shall absorb cable-filling material and be re-enterable. Conduit seal shall be 3M #442 High Gel re-enterable encapsulant or approved equal.

2.05 - GROUNDING SYSTEM

- A. The utility service entrance switchboard ground bus shall be tied to a building ground grid consisting of an "UFFER" type grounding ring system as per Contract E-Series Drawings. "UFFER" ground shall be connected to building metal frame support and metal water pipe as applicable.
- B. The UFFER shall consist of AWG bare wire laid in a grid as detailed on the Contract E-Series Drawings.
- C. The main ground bonding wire from the ground shall extend up into the utility service entrance main switchboard for the visible connection with a UL approved "ground clamp" attached to the ground bus.

- D. Network ground bond wires shall be connected from the UFFER ground to locations shown on Contract Drawings. The network ground bonding wires shall be bare copper sized as shown on Contract Drawings.
- E. Ground rods shall not stub up more than 4" in the concrete pad.
- F. The ground rod shall consist of not less than 10 continuous feet of 3/4 inch copper coated electroplated high grade carbon steel. The ground rod shall be a NEHRING type NCC, Weater 348 or approved equal. The ground rod shall extend up for visible connection of a UL approved "ground clamp" to the ground bus.
- G. Provide a 13 inch diameter, 9-inch nominal throat, and concrete ground rod box, minimum 12 inches deep, with cast iron traffic cover embossed or engraved "GROUND."
- H. Resistance from grounded surface of the electrical system to the ground rod and to earth shall not exceed 5 ohms.
- I. Ground clamps shall be bolt-on type as manufactured by ILSCO type AGC, O-Z Gedney Type GRC, Burndy Type GAR or GP, or approved equal.
- J. Ground buses shall be provided in all electrical enclosures. Each ground bus shall be sized as shown on the Contract drawings or specified herein. The ground bus shall be adequately sized for the connection of all grounding conductors required per NEC. Screw type lugs shall be provided on all ground busses for connection of grounding conductors.
- K. Each ground bus shall be copper. Screw type fasteners shall be provided on all ground busses for connection of grounding conductors. Ground bus shall be a Challenger GB series, ILSCO CAN series, or approved equal.
- L. Attachment of the grounding conductor to equipment or enclosures shall be by connectors specifically provided for grounding. Mounting, support, or bracing bolts shall not be used as an attachment point for ground conductors.
- M. All raceway systems, supports, enclosures, panels, and equipment housings shall be permanently and effectively grounded.
- N. One side of the secondary on all transformers shall be grounded.
- O. The system neutral (grounded conductor) shall be connected to the system's grounding conductor at only a single point in the system. This connection shall be made by a removable bonding jumper sized in accordance with the applicable provisions of the National Electrical Code if the size is not shown on the Drawings. The grounding of the system neutral shall be in the enclosure that houses the service entrance main over-current protection.
- P. The system neutral conductor and all equipment and devices required to be grounded by the National Electrical Code shall be grounded in a manner that satisfies the requirements of the National Code.
- Q. Grounding conductors shall be sized as shown on the Plans or in accordance with NEC Table 250.122, whichever is larger.
- R. Grounding and bonding wires shall be installed in all PVC conduits and nonmetallic raceways and connected to the ground bus and all equipment.
- S. Conduit grounding bushings shall be installed on all metallic conduits. Conduit grounding bushings shall be set screw locking type electro-galvanized malleable iron with insulation collar and shall be provided with a feed through compression lug for securing the ground bonding wire . Ground bonding wire shall be bare wire and shall be sized per NEC. Bonding wires at endpoints shall be connected to enclosure ground bus or equipment grounding lug.
- T. All receptacles shall have their grounding contact connected to a grounding conductor.
- U. Negative side of all VDC power supplies shall be grounded.

- V. Branch circuit grounding conductors for receptacles, or other electrical loads shall be arranged such that the removal of a lighting fixture, receptacle, or other load does not interrupt the ground continuity to any other part of the circuit.

PART 3 – EXECUTION

3.01 CONDUIT AND RACEWAY INSTALLATION

A. Conduit and Raceway Requirements:

1. Care shall be exercised to avoid interference with the work of other trades. This work shall be planned and coordinated with the other trades to prevent such interference. Pipes shall have precedence over conduits for space requirements. Exposed conduits shall be neatly arranged with runs perpendicular or level and parallel to walls. Bends shall be concentric.
2. Exposed conduits shall not be run directly on the ground. Secure conduits to 316 stainless steel Unistrut.
3. Install conduit free from dents and bruises.
4. All conduits shall be labeled with conduit tags on all ends; at junction boxes, pull boxes, enclosures, stub-outs, or other terminations. All spare conduits shall be labeled.
5. Install an accessible raceway and conduit system for connection of all boxes, panelboards, cabinets, and equipment.
6. All conduit and raceway shall be the size and type as shown on Conduit and Wire Routing Schedule. In no case shall the conduit size be smaller than that shown, except as follows:
 - a. All exposed conduits in NEMA 4X areas (except for indoor corrosive areas) and outdoor locations shall be GRS-PVC.
 - b. All exposed conduits in NEMA 12 areas shall be GRS.
 - c. All exposed conduits in indoor NEMA 4X corrosive areas shall be PVC-80.
7. Conduits connected to boxes, cabinets, etc., outdoors, exposed to weather or in areas subject to excessive moisture shall be fitted with watertight sealing hubs of steel or malleable iron with sealing ring and insulated throat, Myers hub, Thomas and Betts 370 Series, or approved equal.
8. Malleable iron threaded grounding bushing, with insulated throat and set screw solderless lugs, Appleton GIB-XXXSL series shall be placed on the end of all rigid conduits. A ground bare copper wire shall bound each bushing to the enclosure ground bus.
9. Matching Existing Facilities:
 - a. When new conduit is added to areas which are already painted, the conduit and its supports shall be painted to match the existing facilities.
 - b. Where new conduit is used to replace existing conduit, the existing conduit and supports shall be removed, resulting blemishes shall be patched and repainted to match original conditions.
 - c. If existing conduits are to be reused and rerouted, resulting blemishes shall be corrected in the same manner.
 - d. All existing conduits that are reused:

- 1) Shall have a mandrel or conduit piston pull through the entire conduit run to prove the length contains no blockages or obstructions. Mandrelling shall be witnessed by the Owner.
- 2) Install new conduit tags for reused conduits at all transition boxes and endpoints. Conduit & Wire Routing Schedule shall be updated as these modifications take place.

B. Exposed Conduit

1. All exposed conduits shall be run in straight lines parallel to column lines, walls or beams. Where conduits are grouped, the bends and fittings shall be installed to present an orderly appearance. Unnecessary bending or offsets shall be avoided. Conduits shall be kept at least 12 inches away from heating devices or similar equipment.
2. Support for exposed conduit shall be in accordance with Title 24, CAC.
3. Support rigid conduits at 8 feet intervals and PVC conduits at 4 feet intervals. Support all conduits within 1 foot of boxes or changes in direction. Use riser supports with clamps for vertical conduit risers.
4. For single conduit runs, use pipe straps or suspend from ceiling with single conduit hangers. Single hole malleable iron clamps with backplates may be used for horizontal runs on vertical surfaces. Perforated strap (plumber's tape), not acceptable.
5. For multiple conduits runs, group conduits together and support from ceiling by means of trapeze hangers. Wall brackets or Unistrut supports shall be used for conduit runs on vertical surfaces. Clamp each conduit to trapeze or support, using conduit clamp.
6. Fasten hanger rods to structural steel members with beam clamps or to concrete inserts set flush with surface. Install reinforcing rod through opening in concrete insert.
7. Exposed conduit shall be supported rigidly in place. All exposed conduit shall include, where required, the drilling of holes in the bottom or sides of enclosures. The Contractor shall thoroughly examine work prior to drilling to avoid drilling into components within enclosures.
8. Conduits installed outdoor or in NEMA 4X rated areas above grade shall be braced in place with stainless steel Unistrut stanchions or PVC coated clamps with backplates.
9. Vertical offsets and sloping of conduits are not detailed on plans; the Electrical Contractor shall include in his bid the price for the complete conduit run utilizing the civil & mechanical plans to measure vertical & slope distances.
10. Exposed conduits shall not be run directly on the ground or roof. Secure conduits to stainless steel Unistrut.
11. Duct-taping conduits together is not acceptable. Conduits, installed into concrete pads, shall be installed with a minimum of 2" distance between conduits to allow installation of bushings.

C. Conduits in Concrete Slabs

1. Conduits may be installed in structural slabs, or in slabs on grade, having the following minimum thickness: 2¹/₂" thick for 1/2" conduit, 4¹/₂" thick for 3/4" conduit, and 5" thick for 1" conduit.
2. Maintain a minimum of two inches of clearance between conduits and any reinforcement bars. In structural slabs, place conduits carefully between upper and

lower layers of steel. In pre-stressed concrete slab construction, place conduits in center of slab and do not support from pre-stressed steel.

3. Space conduits to maintain structural integrity of slabs.
4. Place conduits running parallel to slab supports (beams, columns, walls, etc.) not less than 12" from such supports.
5. Where floor slab is in direct contact with earth or fill, rigid steel conduit may be embedded in concrete blister below bottom of slab with 2-inch minimum of concrete cover.
6. Runs of conduit embedded in concrete shall be rigidly supported in their proper positions while concrete is being placed. Place conduit separators every 4 feet on centers and securely anchor to prevent movement. Ends of conduits shall be plugged or capped during construction to prevent the entrance of concrete or other foreign matter. Connections shall be checked for tightness before being embedded.

D. Underground Conduits

1. Buried conduit shall be placed at least 24 inches below grade and be located to avoid interference with other underground piping, foundations, etc. Conduit for Telephone and Power Utilities shall be set to depth as required by Utility engineered drawings and not less than 36" below grade. All conduits entering or leaving the ground shall be sealed to prevent condensation of moisture inside the conduit. Conduit entrances in the bottom of MCCs, power distribution panels, switchboards, and enclosures shall project into the enclosure a minimum of two inches to prevent water from entering conduits.
2. All conduits entering or leaving the ground shall be sealed to prevent condensation of moisture inside the conduit. Conduit entrances in the bottom of MCCs, power distribution panels, switchboards, and enclosures shall project into the enclosure a minimum of two inches to prevent water from entering conduits.
3. Conduit placed in concrete which is in contact with earth or water shall be adequately separated from the earth or water by at least 3" of concrete. Concrete encasement shall extend 4" above finished grade or into housekeeping pad at completion of each run.
4. Install expansion couplings in conduit runs crossing expansion or contraction joints in concrete. Expansion couplings shall be zinc coated and watertight.
5. Where other piping systems are encountered or being installed along a raceway route, maintain a 12-inch-minimum vertical separation between raceways and other systems at crossings. Maintain a 12-inch-minimum separation between raceways and other systems in parallel runs. Do not place raceways over valves or couplings in other piping systems. Refer conflicts with these requirements to the Owner's Representative for instructions before further work is done.
6. Underground conduits not encased shall have a minimum 4" sand bedding completely encircling the conduits.

E. Raceway Identification

1. All conduits and raceways listed in Conduit and Wire Routing Schedule shall have conduit tags at both terminations of each conduit.

2. Conduit terminating in walls shall be identified by stenciling the conduit number on the wall directly under the conduit.
3. When there is no space available to use tag ties, such as in Motor Control Centers with underground feed or for conduits outside of buildings, then the tag material shall be rigid laminated red phenolic with white lettering. The size of the tag shall be 2" diameter. No letters are allowed smaller than 7/16". Tags shall be heat and UV resistant, stain-proof, electrically nonconductive and non-corroding. Securely fasten tags in place using UV rated plastic ty-wraps. Engrave the tags, on both sides, with the conduit number. Labeling shall be neatly installed for visibility and shall be clearly legible. Conduit tags shall be Brady Custom B-1 or approved equal.
4. Prior to encasement, concealment, backfilling of conduits, temporary conduit labels shall be provided at each end of conduit. Temporary conduit labels shall have 1/2-inch (minimum) lettering at all transition points. After encasement and concealment temporary conduit labels shall be placed at each exposed end.
5. Each conduit listed in Conduit and Wire Routing Schedule shall have permanent tags where it enters an open transition point, junction boxes, terminal boxes, pull boxes, vaults, and manholes.

F. Workmanship and Installation Requirements

1. Where field changes are required, every precaution shall be taken to ensure that the change is coordinated with other conduit, structural, plumbing, and piping work. Information shall be obtained regarding the completed raceway runs to ensure that there will be no interference when the raceway run is extended or revised. A complete record of such changes shall be made on the Record Contract Drawings.
2. Conduits shall be cut square, threaded and reamed to remove sharp or rough edges and burrs. No running threads will be allowed. Conduit joints and connections shall be made waterproof and rustproof by application of a non-insulating thread compound, such as white lead or graphite, and zinc sealing material. Each threaded joint shall be thoroughly cleaned to remove cutting oil before the compound is applied.
3. All bends and offsets, where required, shall either be made with factory made bends or shall be field bends made with a conduit bender designed specifically for use with the type of conduit to be bent. Elbows and bends for conduits shall be formed in the field and shall be reasonably free from flattened surfaces, indentations, or kinks. Avoid field bends and offsets where possible. Heating of conduit to facilitate bending shall not be acceptable. Metallic conduits shall be bent cold to prevent damage to the protective coating. All bending shall be gradual and be done smoothly to permit the pulling on insulated electrical wires and cables without incurring damage to the insulation or sheath. Radius of curvature shall be not less than that permitted by NEC.
4. Conduit shall be rigidly secured to panels and other electrical equipment terminal boxes with locknuts and bushings in such a manner that each system shall be electrically continuous throughout.
5. Flexible liquid-tight metal conduit shall be used to provide flexible connections between the rigid system and motor conduit boxes or other equipment subject to vibration.
6. To reduce damage to the zinc coating, only strap type wrenches shall be used. All wrench marks, field cut threads, and all other places where the zinc coating is damaged, shall be repaired with zinc-rich galvanizing repair compound.

7. Raceway shall be installed with necessary fittings and supports.
8. After installation of all conductors, all underground conduit ends into enclosures shall have a conduit seal placed around wires inside conduit.
9. Grout around conduit tie-ins entering walls of building structure for watertight seal.
10. Contractor shall limit the number of directional changes of the conduit to no more than the equivalent of 270 degrees in any run between pull points. Where required for ease of pulling and as necessary to meet code, the Contractor shall supply and install junction or pull boxes even though not shown on Drawings at no additional cost to the Owner.
11. Conduit runs between two vaults, pull or junction boxes shall be limited to a maximum of 300 feet, or less 50 feet for every 90 degrees of conduit change in direction. Install pull boxes where required to limit bends in conduit runs to not more than 270 degrees or where pulling tension would exceed the maximum allowable for the cable. Provide additional vaults, pull or junction boxes as necessary even though not shown on Drawings at no additional cost to the Owner.
12. Install and equip conduits and fittings installed outdoors or in other wet locations, entering equipment from bottom unless necessary to enter from side, to prevent water from entering the equipment. Top entry of conduits into enclosures located outdoors or in other wet locations is not allowed.
13. Spare or Future Conduits:
 - a. All spares shall be mandrel and have pull ropes installed.
 - b. Provide braided yellow polypropylene pull ropes with 1' distance markers, $\frac{1}{4}$ " minimum size.
 - c. Provide a waterproof label on each end of the pull cords to indicate the destination of the other end.
 - d. Provide caps on conduit ends to prevent entrance of dirt or insects.
14. Contractor shall neatly bundle all new and reused wires with tie-wraps. Ty-wraps shall not be in conduits. All tape used for bundling wires shall be removed after installation in conduit.
15. Conduit stubs for future use shall be capped with coupling, nipple and plug.
16. Seal all conduits to prevent water traveling through conduits into buildings, junction boxes, underground facilities, electrical enclosures, panels, instruments or any other boxes that house electrical and instrumentation components. Install conduit drain boxes and plug conduit interior to form an effective barrier to keep out water traveling into equipment located below grade.
17. Conduit between vibrating equipment and outlet boxes or conduits shall be liquid-tight flexible electrical conduits.
18. Whenever possible, make bends for exposed conduit stub-ups completely below the surface. Make stubs vertical and arrange neatly.
19. Where conduits turn up in accessible floor areas or under removable partitions, install coupling flush with finish floor surface (exclusive of floor covering). Provide flush threaded plug in this coupling where conduit is not to be extended.
20. For flush mounted panels, run empty conduits from panel to accessible spaces above. Install a minimum of one $\frac{3}{4}$ " conduit for every 3 single pole spare circuit breakers or spaces, or fraction thereof.

21. Running Threads: Do not use running threads. Where such device is needed, use rain-tight unions or concrete tight couplings.
 22. The entire electrical raceway system shall be bonded and form a continuous metallic electrical conductor from service point to every box and shall be terminated with ground bushings connected to the ground bus. Conduits entering enclosures shall be fitted with insulated grounding bushing. All grounding bushings shall be tied to the grounding system with properly sized bonding conductors per the NEC Code.
 23. Connection to steel conduit from PVC shall be made with approved threaded adapters.
 24. All conduits which are installed shall be capped during construction to prevent the entrance of foreign material.
 25. Secure hangers, brackets, conduit straps, supports and electrical equipment by means of toggle bolts on hollow masonry; expansion shields and machine screws or standard preset inserts on concrete or solid masonry; machine screws or bolts on metal surfaces; wood screws on wood construction. Wood or fiber plugs or concrete nails, not acceptable.
 26. Special "Soft-Jaw" type pipe clamps shall be used to prevent damage to PVC-coated conduits while field threading, cutting to length, and coupling sections.
- G. Detectable Warning Tapes
1. Bury detectable warning tapes approximately 12 inches above all underground conduit runs. Align parallel to and within 3 inches of the centerline of the conduit or duct bank.
 2. Plastic tape shall be colored for underground service, 3-inch minimum width, utilize tape made of material resistant to corrosive soil. Use red tape for "Electric" service and orange tape for "Communication" service. Use tape with printed wording listing type of service. Manufacturers and types: Seton, Blackburn, Griffolyn Co., Terra-Tape, Brady, or equivalent.
- H. Cutting and Patching
1. The Contractor shall do all core drilling, cutting, and patching required to install his work at no additional cost to the Owner. Core drilling, cutting, and patching is considered standard work to be done at existing facilities, therefore, this work is not specifically called out on Drawings. Any core drilling or cutting which may impair the structure shall require prior approval by the Engineer. Core drilling, cutting, and patching shall be done only by skilled labor of the respective trades. All surfaces shall be restored to their original condition after core drilling, cutting, and patching and made watertight.
- I. Excavation and Back Filling
1. At all times during the excavation and backfilling, the Contractor shall provide barricades, fences, guard rails, etc., to safeguard authorized personnel, and the public from excavated trenches.
 2. Repave any area that was paved prior to excavation. Backfill and surface all areas as shown on the Drawings or where not shown to the original condition that was present prior to the excavation.
 3. Excavations: Provide the excavation for Utility power and telephone services, electrical, and instrumentation equipment foundations and trenches for conduits and duct banks as necessary. Backfill and surface all areas in accordance with other Contract Sections. Excavations shall also be in accordance with other Contract Sections.

- a. Underground conduits outside of structures, excluding utility conduits, shall have a minimum cover of 24 inches. Utility power and telephone conduits shall have a minimum cover of 36 inches.
 - b. Trenches for all conduits below floor slabs and underground shall be excavated to the required depths. Conduits under floor slabs shall have trenches no deeper than is required to properly contain bends within walls.
 - c. All trenching and underground work shall be closely coordinated with the Owner and Engineer. Contractor shall be responsible for locating, and avoiding disruption of, all existing underground facilities such as gas lines, water lines, sewer, fire protection lines, and existing underground electrical facilities. Any damage caused by the Contractor must be repaired at the Contractor's cost, to the satisfaction of the Owner.
 - d. All trenching shall be done to minimize disruption to normal plant or construction operations. All open trenches shall be suitably marked and/or protected to avoid any accidents or injuries to workers or plant personnel.
 - e. Where new electrical ducts intersect existing facilities, at essentially the same depth, Contractor shall gradually divert the electrical facilities down, under, and back up around the existing facilities.
 - f. All excavations shall be backfilled and resurfaced to match surfaces prior to and adjacent to excavation.
4. Back filling shall be done only after conduits have been inspected by Owner. Excavation and back fill of lines and conduits shall conform to the requirements of the Earthwork Section of these Specifications, unless modified on plans.
- a. Backfill, Non-Paved Areas: Use native backfill, compacted in 6 inch layers to 90 percent relative compaction. Final backfill elevation shall match existing.
 - b. Backfill, Paved Areas:
 - 1) Use clean imported sand rated for use under paved areas.
 - 2) Imported sand shall be free from organic material, trash, debris and rubbish.
 - 3) Compact trench backfills by manual methods. Water flooding or jetting is not permitted.
5. At all times during the installation of the electrical distribution system, the Contractor shall provide barricades, fences, guard rails, etc., to safeguard all personnel, including small children, from excavated trenches.

3.02 - GROUNDING INSTALLATION

A. System

- 1. Install all products per Electrical 16010 – Installation.
- 2. Provide a separate grounding conductor in each raceway, securely grounded to equipment at each end of raceway.
- 3. Bond piping and building structure to grounding electrode per NEC.
- 4. Contractor shall not conceal or cover any ground connections until the Engineer or Owner has established that every grounding connection conforms to the Contract Drawings and Specifications and has given the Contractor written confirmation.
- 5. Test grounding per Section 16010 - Electrical.

6. Grounding details shown on plans are minimum. If additional equipment, such as ground rods, clamps, conductors, etc., is required per NEC, Title 24, CAC, furnish and install same without additional cost to Owner.
- B. Connections
1. Use U.L. approved cast bronze ground clamps specifically designed for grounding purposes. Strap metal is not acceptable for grounding or bonding.
 2. Exposed connections to ground buses, raceways, and small pipes shall be made by means of U.L. approved grounding clamps. Exposed connections of different metals shall be sealed with No-Oxide Paint Grade A or approved equal.
 3. All buried ground rod, large pipe, and steel plate or frame ground bond connections shall be made by welding process equal to Cadweld.
- C. Electrical Equipment Grounding
1. Metal conduits shall be bonded together to the enclosure ground bus.
 2. Lightning arresters or suppressors shall be directly connected to the ground system using copper conductors, sized as per manufacturer's literature.
 3. All motors shall be grounded by bonding the grounding conductor within the raceway to the motor frame. Motors as shown on Electrical Plans shall also have a supplemental grounding conductor bonded to the ground grid in the immediate area of the motor.
 4. Each panelboard shall be equipped with a ground bus secured to the interior of the enclosure. The bus shall be equal to panelboard neutral bus amp rating and shall have adequate lug quantity of lugs. No more than two grounding conductors shall be installed per lug.
 5. All metal panel doors shall be installed with ground straps, including all MCC bucket doors.
- D. Excavation and Back Filling
1. Trenches for all bare copper ground bond wires shall be excavated to a minimum depth of 24".
 2. Back filling shall be done only after grounding system has been inspected. Excavation and back fill of grounding system shall conform to the requirements of the Earthwork Section of these Specifications.
 3. At all times during the installation of the grounding system, the Contractor shall provide barricades, fences, guard rails, etc., to safeguard all personnel, including small children, from excavated trenches.
- E. Cutting and Patching
1. The Contractor shall do all cutting and patching required to install his work. Any cutting which may impair the structure shall require prior approval by the Engineer. Cutting and patching shall be done only by skilled labor of the respective trades. All surfaces shall be restored to their original condition after cutting and patching.

3.02 - DEVICE AND BOX INSTALLATION

- A. System
1. Install all products per Electrical Section 16010 – Installation General.
 2. Keep boxes, and other openings closed during construction to prevent entry of foreign matter. Cover equipment, devices, apparatus, and protect them against dirt, paint, water, chemical, or mechanical damage before and during construction period. Restore to original condition apparatus or equipment damaged prior to final

acceptance. Protect bright finished surfaces and similar items until in service. No rust or damage will be permitted.

3. All receptacles shall be tested for correct connections utilizing a plug-in ground, line and neutral test light plug.
 4. Boxes shall be relocated at no additional cost to Owner as directed by Engineer when a conflict occurs in the box placement shown on drawings and other building appurtenances.
 5. Conductors shall be copper type THHN, #12 AWG (minimum).
 6. Mount conduits using single bolt galvanized pipe straps and clamp back spacers.
 7. Use stainless steel expansion wedge anchors or epoxy anchors as necessary for device mounting.
 8. Provide and install all device boxes, junction boxes, receptacles, switches, and covers.
 9. Receptacles to be ground fault interrupter (GFI) type and weatherproof (WP) where shown.
 10. See electrical symbols and abbreviations drawing for symbol definition.
 11. All work shall conform to local codes and National Electric Code (NEC).
- B. Device Mounting Heights
1. Mounting heights of fixtures and devices shall be as follows unless otherwise indicated or when height must be adjusted to be over or under counter tops.
 - a. Wall Switches: 48 inches
 - b. Convenience Outlets: 18 inches finished areas
24 inches non-finished areas
 - c. Telephone Outlets: 54 inches
 - d. Bracket Fixtures: 7 feet 6inches
- C. Cutting and Patching
1. The Contractor shall do all cutting and patching required to install his work. Any cutting which may impair the structure shall require prior approval by the Engineer. Cutting and patching shall be done only by skilled labor of the respective trades. All surfaces shall be restored to their original condition after cutting and patching.
- D. Boxes
1. Leave no unused opening in any box. Install close-up plugs as required to seal openings.
 2. All spare and/or empty conduits shall terminate in a device box.
 3. Use stainless steel boxes when box must support door mounted devices.
 4. In NEMA 4X areas boxes are to be spaced 1/4-inch from walls using stainless steel, nylon or plastic spacers. Regular steel washers are not considered an approved spacer.

3.04 - WARRANTY

- A. Provide warranty as specified in Section 16010- Electrical, WARRANTY.

*****END OF SECTION*****

SECTION 16120 - WIRE, FUSES & TERMINAL BLOCK

PART 1 - GENERAL

1.01 - SCOPE OF WORK

- A. The Contractor shall assemble, ready for use, the electrical and instrumentation system with wires, fuses and terminal blocks as specified herein.
- B. Furnish all required labor, materials, tools, test equipment, incidentals, and services to provide a complete and operational electrical and instrumentation system with wire and electrical devices as shown on the Drawings, included in these Specifications, or required for fully operating facilities.
- C. C.Work includes that specified in Section 16010 - Electrical.

1.02 - SUBMITTALS AND DRAWINGS

- A. Provide submittals and drawings as specified in Section 16010 - Electrical, SUBMITTAL AND DRAWING REQUIREMENTS.

1.03 - QUALITY ASSURANCE

- A. All materials selected for the manufacture of the hardware shall be the best available for the purpose for which they are used, considering strength, ductility, durability and the best engineering practice.
- B. All like parts shall be interchangeable.

PART 2 – PRODUCTS

2.01 - WIRING AND ELECTRICAL DEVICES

- A. General
 - 1. The electrical and instrumentation system vendor shall provide the wiring and electrical devices specified below and install these field and internal panel wiring as shown on the Contract Drawings. This section applies to all wires or conductors used internally (non-field) for all electrical equipment or external for field wiring.
 - 2. All wire shall be new, plainly marked with UL label, gauge, voltage, type of insulation, and manufacturer's name.
 - 3. All wires shall be properly fused or protected by a breaker at the amperage rating allowed by the NEC.
- B. Power Distribution
 - 1. Each electrical and instrumentation panels shall be equipped with a 120 VAC main power disconnect circuit breaker and power distribution circuit breakers. The main power disconnect breaker shall be a one pole breaker rated at panelboard feed breaker amps. Distribution circuit breakers shall be single pole. The circuit breakers shall be mounted on a standard DIN rail, and shall be Allen - Bradley Channel Mounting Type, or equal.
 - 2. For each power distribution circuit breaker, a neutral return terminal block shall be installed at the bottom of the breaker rail. The neutral return terminal block shall be standard DIN rail mounted and shall be rated to carry up to 20 amperes and accept up to two 12 AWG wires.

3. Each control and instrumentation device shall have a separate fuse for 120 VAC power supply connection.
 4. A spare duplex outlet wired to a separate panelboard circuit shall be provided in each control and instrumentation panel. This outlet shall be labeled "CONVENIENCE RECEPTACLE" and shall not be used to power any other equipment. Label receptacle with panelboard and circuit number fed from.
- C. Analog Signals
1. Analog signal transmission between electric or electronic instruments shall be 4-20 milliamperes and shall operate at 24 volts DC unless otherwise specified. Milliampere signals shall be currently regulated and shall not be affected by changes in load resistance within the unit's rating. Provide isolated current amplifiers wherever the loop load resistance exceeds the current signal transmitter's rating. Associated shunt resistors shall be located on rail-mounted terminal blocks. Exposed resistor leads shall be insulated with heat-shrink tubing.
- D. Low Voltage Wire and Cable
1. General: Low voltage conductors shall be used for power, control, lighting and miscellaneous circuits. This Section applies to all wires or conductors used internally for all electrical equipment or external for field wiring. Wire shall be new, plainly marked with UL label, gauge, voltage, type of insulation, and manufacturer's name.
 2. Control and Power Wiring:
 - a. NEMA standards WC70 and UL requirements.
 - b. Class B stranding. Solid wire conductor prohibited.
 - c. Conductors shall be copper with a minimum of 98% conductivity.
 - d. ASTM B8, soft drawn copper, maximum 12 months old.
 - e. Insulation type for conductors smaller than #6 AWG shall be moisture and heat resistant thermoplastic NEC Type THHN/THWN, rated 90 °C in dry locations and 75 °C in wet locations, or approved equal. Conductors #8 AWG and larger shall be XHHW insulation rated 90 °C in dry locations and 75 °C in wet locations.
 - f. Insulation of all conductors shall be rated 600 volt or higher.
 - g. Field wire minimum AWG sizes:
 - 1) #12 for wires used for individual conductor circuits 100 volt and above, except for PLC I/O which may be #14 AWG.
 - 2) #14 for wires used for individual conductor circuits below 100 volt.
 - h. Non-field or equipment wire minimum AWG sizes if properly protected by fuse or breaker:
 - 1) #14 for wires used for individual conductor circuits 100 volt and above, except for PLC I/O wiring which may be #16.
 - 2) #18 for wires used for individual conductor circuits below 100 volt.
 3. Instrument Cable
 - a. All 4-20mA and 1-5VDC inside instrument and control panel cables wiring shall conform with the following:
 - 1) Signal wiring shall be shielded twisted pair with #18 AWG tinned copper stranded conductors and shield drain conductor.
 - 2) Conductor insulation shall be polyethylene rated 300VAC, 90° C and outer jacket shall be PVC.
 - 3) A metal foil shield shall completely surround the signal conductors.

- 4) Multiple pair cables with individually shielded pairs may be used only with prior approval of the Engineer.
- b. All field 4-20mA instrument cables shall conform with the following:
 - 1) Signal wiring shall be shielded twisted pair with a minimum #16 AWG, tinned copper stranded conductors and shield drain conductor.
 - 2) Conductor insulation shall be polyethylene rated 600VAC, 90° C and outer jacket shall be PVC and "Tray Cable" rated.
 - 3) A metal foil shield shall completely surround the signal conductors.
 - 4) Multiple pair cables with individually shielded pairs may be used only with prior approval of the Engineer.
- c. Instrument Cables shall be Belden or approved equal.
4. Special Purpose Wiring
 - a. Manufacturer Supplied Cables: Cables and wiring for special systems shall be provided by the manufacturer with the equipment and installed per the manufacturer's recommendations.
 - b. Generator Lead Cables: Generator lead cable have very flexible Class K (30 awg) stranding with PVC insulation and jacket. Cable shall be rated for 600 volt, 90 deg C. and be oil and gas resistant. Cable shall be Carol Diesel Locomotive Cable or approved equal.
 - c. VFD rated wire: All VFD load side power wiring shall have rated blended composite semi-conductive, tray cable rated, UL type TC 90°C insulation and 100% shielding with foil tape & tinned copper braid. Wire shall be Olflex – VFD CT or approved equal.
 - d. CAT 6 Cable
 - 1) CAT 6 communication cable in underground (UG) conduit shall meet the following requirements:
 - a) TIA/EIA-568-C.2 Category 6 100 MHz specifications.
 - b) #24 AWG solid bare copper conductor, 4 or 25 pair shielded twisted pair per "Conduit & Wire Routing Schedule".
 - c) Rated for direct burial application.
 - d) 600V rating.
 - e) Insulation: Solid Polyolefin.
 - f) Filling compound: 80°C extended thermoplastic rubber.
 - g) Outer Jacket: Black, water and UV resistant polyethylene.
 - h) Electrically continuous aluminum shield.
 - i) Communication cable shall be Superior Essex OSP Broadband Category 6 Outside Plant Cable or approved equal.
 - 2) Indoor CAT 6 communication cable meet the following requirements:
 - a) TIA/EIA-568-C.2 Category 6 100 MHz specifications.
 - b) #24 AWG solid bare copper conductor, 4 twisted pairs.
 - c) Polyolefin insulation.
 - d) Shielded bulk cable.
 - e) PVC jacket.
 - f) Nominal Impedance: 100 ohms.
 - g) Nominal capacitance: 15 pf/ft. maximum.
 - h) UL listed.

- i) Non-plenum usage rated when routed in conduit.
- j) Plenum usage rated when routed in plenum spaces.
- k) Cable shall be rated for water.

E. Color Code

1. The color code of all wire shall conform with the following table: **WIRES COLOR**

CODE TABLE

DESCRIPTION	PHASE/CODE LETTER	FIELD WIRE OR TAPE COLOR	NON-FIELD WIRE COLOR
480 V, 3 PHASE	A	BROWN	BROWN
	B	ORANGE	ORANGE
	C	YELLOW	YELLOW
240 V or 208 V, 3P	A	BLACK	-
	B	RED (ORANGE if high leg)	-
	C	BLUE	-
240 / 120 V, 1 P	L1	BLACK	BLACK
	L2	RED	-
12V POSITIVE	12P	DARK BLUE	DARK BLUE
12V NEGATIVE	12N	BLACK/RED STRIPE	BLACK/RED STRIPE
24V POSITIVE	24P	PINK	PINK
24V NEGATIVE	24N	BLACK/WHITE STRIPE	BLACK/ WHITE STRIPE
AC CONTROL		VIOLET	RED (YELLOW FOR FOREIGN CIRCUITS)
DC CONTROL		LIGHT BLUE	LIGHT BLUE
NEUTRAL	N	WHITE	WHITE
GROUND	G	GREEN	GREEN
SHIELDED PAIR	+	CLEAR (WHITE)	CLEAR (WHITE)
	-	BLACK	BLACK

2. All wires #8 and below shall have wire insulation the color specified. Wires #6 and larger may be black with color tape.
3. No other colors shall be used without prior approval of the City.
4. The same color shall be connected to the same phase throughout the panel.
5. All wires shall be properly fused or protected by a breaker at the amperage rating allowed by the NEC.
6. Neutral wires used for AC Control shall be White per NEC.

F. Wire Marking

1. Wire identification - all wires, field and interior to equipment, shall be identified with machine printed sleeve markers. Hand lettered wire labels and clip-on markers are not acceptable and shall be replaced at the Contractor's expense. The wire labeling code for each end of the same wire shall be identical.

Tubing shall be sized for the wire and shrunk into place with the properly sized heat gun. Labels shall not be wrap around or snap-on type.

2. The wire identification code for field and panel wiring shall be the number/letter designated on the "Contract elementary" and "Supplier loop" diagrams. Wire labels shall be T&B SM series, Pass & Seymour CAB3, or approved equal.
3. Wire labeling may be omitted on locally interconnected neutral wires such as jumpers between adjacent auxiliary relay coil neutral terminals. "Locally" is defined as wires no longer than 8".
4. Wire labels for lighting and receptacles shall be installed and consist of the panelboard and circuit number (i.e., Panelboard "LP1", circuit breaker #3 would have wire label line "LP1-L3" and neutral "LP1-N3").

G. Terminal Blocks and Fuses

1. Control Panel Terminal Blocks:
 - a. Terminal blocks to be clamp type, 6mm spacing, 600 volt, minimum rating of 30 amps, and mounted on DIN rail, Entrelec M4/6 colored. DIN rail shall be same type as used for the relays. Install an extra DIN rail on each type of terminal strip with 20% spare terminals for future additions.
 - b. Provide terminal blocks with "follower" plates that compress the wires and have wire guide tangs for ease of maintenance. Terminal blocks that compress the wires with direct screw compression are unacceptable. All power, control and instrument wires entering and leaving a compartment shall terminate on terminal blocks with wire numbers on terminals and on both ends of the wires.
 - c. Terminal Tags and Markers: Each terminal strip shall have a unique identifying alphanumeric code at one end (i.e.: TB1, TB2, etc.). On each terminal strip, terminal numbers shall be assigned starting with #1 at one end, incrementing in alphanumerical order (i.e.: 1,2,3,4...). Numbers shall be assigned to all blocks except grounding blocks. Fuse blocks shall be assigned unique tag numbers such as FU1, FU2. No two fuses shall be assigned the same tag number.
 - d. Plastic marking tabs shall be provided to label each terminal block. These marking tabs shall have a unique number/letter for each terminal which is identical to the "elementary" and "loop" diagram wire designation. Numbers on these marking strip shall be machine printed and 1/8 inch high minimum.
 - e. Terminal blocks shall be physically separated into groups by the level of signal and voltage served. Power and control wiring above 100 volts shall have a separate group of terminal blocks from terminal blocks for wiring below 100 volts, intermixing of these two types of wiring on the same group of terminal blocks is not allowed.
 - f. Provide a ground terminal or connection point for each grounding conductor.
2. Provide a separate terminal block for every two neutral terminations or as coordinated with the interconnect diagrams. MCC – Motor Starter Cubicles Terminal Blocks
 - a. MCC cubicle terminal blocks shall be pull apart as supplied standard by MCC manufacturer.

3. Power Termination Blocks shall be rated for 600V main power connection. The power termination blocks shall be rated to accept Copper or Aluminum cable rated as shown on Contract one-line diagrams. The power termination block shall be capable of being mounted anywhere in a termination box. Each termination block shall be provided with lug shield to prevent contact with power connections. The power termination blocks shall be Connectron or approved equal.
- H. Fuses
1. Fuses used in circuits 200 VAC and above shall be time- delay type FNQ or approved equal, 13/32" x 1-1/2", and have an interrupting rating of 10,000 AIC at 500 VAC. Fuse holders shall be of the barrier type and rated 600 VAC.
 2. Fuses used in 120 VAC circuits shall be time-delay type MDL or approved equal, 1/4" x 1-1/4", and have a rating of 250 VAC. Fuse-holders shall be of the terminal block type.
 3. Fuses used in signal and 24 VDC circuits shall be 5mm x 20mm and have a rating of 250 VAC. Fuse-holders shall be of the terminal block type.
 4. Fuses shall be sized in conformance with the NEC.
- I. Panel Ground
1. Each electrical, control and instrumentation panel shall be provided with a 1 inch x 0.25 inch x 8 inch (minimum size) solid copper grounding bus bar, mounted on the inside of the enclosure. The grounding bar shall be mounted on insulated standoffs so that no electrical connection is made between the ground bar and the cabinet through the mounting. The ground bar shall be drilled and tapped for 0.25-20 screws at 0.5 inch interval along its entire length.
 2. An un-insulated solid copper #8 AWG ground wire shall be attached between the ground bar and the panel enclosure, and between the ground bar and the mounting panels. The ground connection to the enclosure and panel shall be made by sanding the paint finish off a small area, drilling a hole for a 0.25 inch bolt and mounting a 0.25-20 bolt to the panel to serve as grounding stud. The grounding stud shall be attached with nut and flat washers on both sides of the enclosure/panel, and with an inside tooth star lock washer next to the panel surface. The star lock washer shall be on the inside surface of the enclosure, and the front surface of the mounting panel. The grounding wire shall be secured to the stud with a nut and inside tooth star lock washer. These grounding points shall be located within 12 inches of the bottom to the grounding bar. Each terminal strip rail shall be individually grounded by means of a #12 AWG wire to the ground bus. The PLC rack, power supply, lightning arrestor shall be similarly grounded according to the manufacturer's recommendations.

PART 3 - EXECUTION

3.01 - WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Section 16010 - Electrical.
- B. The Supplier shall employ personnel that are skilled and experienced in the installation of wire electrical devices, accessories, and assemblies. All installation labor shall be performed by qualified personnel who have had experience on similar projects. Provide first class workmanship for all installations.
- C. Ensure that all equipment and materials fit properly in their installations.

- D. Perform any required work to correct improper installations at no additional expense to the City.

3.02 - INSTALLATION

A. System

1. Install all products per 16010 - Electrical, INSTALLATION, GENERAL.
2. The panels shall be completely factory wired and tested before shipment.
3. All spare PLC input / output points shall be wired to terminal blocks.
4. A minimum of 20% spare unwired terminals shall be provided in each panel.
5. Lace tie with cord, minimum length 2', each wire bundle entering any enclosure, vault, pullbox, cable tray or any other enclosure. Place label with conduit number associated with wire on each of these bundles when there is no place to attach label to conduit. Labels for each cord shall be similar to the engraved circular tag type specified in Section 16110 or approved equal.
6. Pulling lubricant shall be used when installing all wire in conduits.

B. Wiring Methods

1. Wiring Separation: Wires carrying 100 volts and above shall be physically separated from lower voltage wiring by using separate bundles or wire ways with sufficient distance to minimize the introduction of noise, crossing only at 90 degree angles.
2. Harness: All wiring shall be neatly bundled and laced with plastic tie-wraps, anchored in place by screw attached retainer. Where space is available, all wiring shall be run in slotted plastic wire ways or channels with dust covers. Wire ways or channels shall be sized such that the wire fill does not exceed 60%. Tie-wraps shall be T&B TY-RAP or approved equal. Wiring inside of conduit, plastic wire duct, duct bank Sections or corrugated loom tubing is not to be wire tied or taped together.
3. Hinge Loops: Where wiring crosses hinged surfaces, provide a "U" shaped hinge loop protected by black head stabilized corrugated loom tubing as manufactured by Panduit # CLT100N-C630 or approved equal. The hinge loop shall be of sufficient length to permit opening and closing of the door without stressing any of the terminations or connections. Corrugated flexible wire duct shall be Graybar T25N or approved equal.
4. Retainers: Wire ways, retainers, and other devices shall be screw-mounted with round-head 316 stainless steel screws or mechanically mounted by push-in or snap-in attachments. Glue or sticky back attachment of any type or style shall not be used. Retainers shall be T&B TC series or approved equal.
5. Routing
 - a. Wires shall be routed in slotted plastic wire-ways with snap covers. Wires carrying 120 VAC shall be separated as much as possible from other wires and signal cables, and shall be routed only in ducts for 120 VAC. If the power wiring must cross the signal wiring, the crossing shall be as close to a right angle as possible.
 - b. Ducts for 24 VDC wiring shall be used for all other wires and cables. Routing of 120 VAC in combined ducts shall be minimized.
 - c. Wires and cable shall be routed along the shortest route between termination points, excepting routes which would result in routing 120 VAC and other wires

- and cables in the same duct. Wires and cables shall have sufficient length to allow slack and to avoid any strain or tension in the wire or cable.
- d. Wires and cables shall be placed in the ducts in a straight, neat and organized fashion and shall not be kinked, tangled or twisted together. Additional wire ducting shall be provided for use by the electrical subcontractor for routing field wires to their landing points in the each electrical and instrumentation panel.
 - e. Wiring not routed in duct work shall be neatly bundled, treaded, and laced with plastic ties. Wiring across door hinges shall be carefully made up and supported to avoid straining and chafing of the conductors or from putting any strain on their terminals.
6. Exposed Tie-Wraps: Plastic tie-wraps used in all outdoor or exposed applications shall be sun resistant UV rated for outdoor usage.
7. Spare Terminals: Provide a minimum of 20% spare terminals in all MCC cubicles, electrical and instrumentation enclosures, and instrumentation/control panels.

3.03 - WARRANTY

- A. Provide warranty as specified in Section 16010- Electrical, WARRANTY.

*****END OF SECTION*****

SECTION 16123 - 600 VOLT OR LESS WIRES AND CABLES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. 600 Volt Class wire and cable.
 - 2. Instrumentation Class wire and cable.
 - 3. Fire Alarm wire and cable.
 - 4. Communication wire and cable.
- B. Related Sections:
 - 1. Section 16075 - Electrical Identification.
 - 2. Section 16133 - Conduits.
 - 3. Section 16134 - Boxes.
 - 4. Section 16950 - Electrical Testing.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. B 3 - Standard Specification for Soft or Annealed Copper Wire.
 - 2. B 8 - Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
- B. Insulated Cable Engineers Association (ICEA).
- C. National Electrical Code (NEC):
 - 1. Article 250 - Grounding.
 - 2. Article 310 - Conductors for General Wiring.
 - 3. Article 760 - Fire Alarm Systems.
- D. Underwriters' Laboratories, Inc., (UL):
 - 1. UL 1277 Subject - Electrical Power and Control Tray Cables with Optional Optical-fiber Members.

1.3 SUBMITTALS

- A. Shop Drawings: Show splice locations. Submit cable pulling calculations for all cable feeder larger than 2/0 AWG and pulling lengths longer than 200 feet. Submit cable pulling calculations for all conductors that run longer than 400 feet.
- B. Product Data: Include wires, cables, pulling compounds, and splicing materials.

1.4 QUALITY ASSURANCE

- A. Conform to ASTM and ICEA standards.
- B. Furnish mechanical conductor connector and heat-shrink type insulation by same manufacturer.

PART 2 PRODUCTS

2.1 WIRE AND CABLE MATERIALS

- A. Conductors: ASTM B 8, soft drawn copper, maximum 12 months old, minimum 97 percent conductivity. American Wire Gauge (AWG) sizes as indicated on the Drawings, Class B or C stranded.
- B. Insulation Thickness: Minimum specified by NEC Article 310.
- C. Conductor Sizes: As indicated on wiring schedules and Drawings.

2.2 600-VOLT CLASS CABLE

- A. Power Wire and Cable:
 - 1. Manufacturers: One of the following or equal:
 - a. Okonite Company.
 - b. BICC Cable.
 - c. Rockbestos Company.
 - d. Rome Cable Corporation.
- B. Control Wire and Cable:
 - 1. Manufacturers: One of the following or equal:
 - a. Okonite Company.
 - b. BICC Cable.
 - c. Rockbestos Company.
 - d. Rome Cable Corporation.
- C. Insulation for Individual Wires or Multiple Conductor Cable for Power and Control Circuits:
 - 1. Type XHHW-2 insulation to be used in all locations.
- D. Jackets for Multiple Conductor Cable for Power and Control Circuits: Type CPE.
- E. Multi-Conductor Cable Insulated Grounding Conductors:
 - 1. Color: Integral green.
 - 2. Sizes: In accordance with NEC 250-122.
- F. Solid-conductor wire, Number 12 AWG and smaller, may be used only for lighting and receptacle circuits.

2.3 INSTRUMENTATION CLASS CABLE

- A. Single Pair or Triad Applications:
 - 1. Manufacturers: One of the following or equal:
 - a. The Okonite Company, Okoseal-N Type P-OS.
 - b. Equivalent manufactured by Cooper Industries, Belden Wire and Cable Division.
- B. Multiple Pair or Triad Applications:
 - 1. Manufacturers: One of the following or equal:
 - a. The Okonite Company, Okoseal-N Type SP-OS.
 - b. Equivalent manufactured by Cooper Industries, Belden Wire and Cable Division.
- C. Approved for cable tray installation in accordance with the National Electrical Code.
- D. Number of Individually Shielded, Twisted Pairs and Triads: As indicated on the Drawings or as necessary for the application.

- E. Voltage Rating: 600 volts.
- F. Cable Type: TC.
- G. Temperature Rating: 90 degrees Celsius dry location, 75 degrees Celsius wet location.
- H. Conductors: Bare, soft annealed copper in accordance with ASTM B 3, Class B, 7-strand concentric in accordance with ASTM B 8.
- I. Conductor Insulation: Flame-retardant polyvinyl chloride, 15 mils nominal thickness, with nylon jacket 4 mils nominal thickness, 90 degrees Celsius temperature rating in accordance with Underwriters' Laboratory Subject 1277.
- J. Color Code: Provide conductor color code as specified in Section 16075.
- K. Single Pair or Triad Shielding:
 - 1. Group Shielding: Minimum 1.35 mil double-faced aluminum/synthetic polymer-backed tape overlapped to provide 100 percent coverage.
 - 2. Drain Wire: 7-strand tinned copper drain wire, 2 sizes smaller than conductor.
- L. Multiple Pair or Triad Shielding:
 - 1. Group Shield: 1.35 mil aluminum-polyester tape overlapped to provide 100 percent coverage and a 7-strand tinned copper drain wire; 2 sizes smaller than conductor. Completely isolate group shields from each other.
 - 2. Cable Shield: 2.35 mils double-faced aluminum and synthetic polymer backed tape overlapped to provide 100 percent coverage and a 7-strand tinned copper drain wire, same size as conductors.
- M. Jacket: Black, flame-retardant in accordance with Underwriter's Laboratory Subject 1277, 90 degrees Celsius temperature rating, rip cord laid longitudinally under jacket to facilitate removal.
- N. Conductor Size: Number 16 AWG minimum unless otherwise indicated on the Drawings.
- O. Numerically identify one conductor within each pair and triad.

2.4 RELATED MATERIALS

- A. Splicing Material:
 - 1. In conformance with ANSI C119.1, IEEE 383, and ICEA 5-19-81.
 - 2. Manufacturers: One of the following or equal:
 - a. Elastimold.
 - b. Thomas-Betts.
 - c. Raychem, FCSM Series.
- B. Wire Nuts:
 - 1. Rated 600 volt with live-spring feature for tight fitting connections.
 - 2. Manufacturers: One of the following or equal:
 - a. 3M.
 - b. Thomas and Betts.
- C. Junction Boxes and Terminal Cabinets: As specified in Section 16134.
- D. Pulling Compound: As recommended by conductor manufacturer.

2.5 WIRE AND CABLE FABRICATION

- A. Permanently mark American Wire Gauge (AWG) size, grade of insulation, voltage, and manufacturer's name on outer covering at maximum 24 inch intervals.
- B. Identify and mark conductors in accordance with NEC Article 310.

- C. Color code wire and cable as specified in Section 16075.
 - 1. Integrally color insulation for Number 2 AWG and smaller.
 - 2. Wrap colored tape around cable larger than Number 2 AWG.
- D. Fabricate cable ends with provisions for field testing.

2.6 SOURCE QUALITY CONTROL

- A. Test full lengths in accordance with ASTM and ICEA Standards.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install continuous circuit conductors from source to load without splices or terminations in intermediate manholes or pull boxes, except for Number 10 AWG and smaller conductors for lighting and receptacles.
- B. Splices:
 - 1. Where splices are necessary because of extremely long wire or cable lengths that exceed standard manufactured lengths, install and label junction boxes for power conductors or termination cabinets for control and instrument conductors.
 - 2. Power and control conductors routed in common raceways may be spliced in common junction boxes.
 - 3. Install NEMA 4X junction and terminal boxes in wet and outdoor locations. Clearly label junction and terminal boxes containing splices with the word "SPLICE."
 - 4. Leave sufficient slack at junction boxes and termination boxes to make proper splices and connections. Do not pull splices into conduits.
- C. Properly coat wires and cables with pulling compound before pulling into conduits and prevent mechanical damage to conductors during installation.

3.2 600-VOLT CLASS CABLE

- A. Size power conductors in accordance with National Electrical Code when sizes are not indicated on the Drawings.
- B. Install minimum Number 12 AWG wiring for power circuits unless otherwise specified or indicated on the Drawings, and minimum Number 14 AWG for control wiring unless otherwise specified.
- C. Install minimum 14 AWG for internal panel control wiring with type MTW or SIS insulation.
- D. Do not exceed cable manufacturer's pulling tension and side-wall pressures.
- E. Terminations and Splices (600 Volt or Less):
 - 1. Terminations: Terminate control and instrument conductors in terminal boxes in accordance with Section 16134.
 - 2. Splicing: Join conductors mechanically with splice connectors and install heat-shrink type insulation. Splice conductors in accordance with manufacturer's instructions. Make waterproof heat shrink type splices in wet and below grade locations.
 - 3. Splice or weld grounding conductors of different sizes.
 - 4. Conductor Number 10 AWG and smaller for lighting and receptacle circuits may be spliced in junction boxes with wire nuts.
- F. All conductors of size No. 1/0 AWG and smaller for installation in cable trays and continuing without splices via other conduits; they shall be of the multi-conductor type with overall jacket.

3.3 INSTRUMENTATION CLASS CABLE

- A. Install instrumentation class cables in separate raceway systems.
 - 1. Install instrument cable in metallic conduit within non-dedicated manholes or pull boxes.
 - 2. Install cable without splices between instruments or between field devices and instrument enclosures or panels.
- B. Do not make intermediate terminations, except in designated terminal boxes indicated on the Drawings.
- C. Ground cable shields at only one location, typically at panels, not at field instruments.

3.4 SIGNAL CABLE AND CONDUIT INSTALLATION

- A. Separate and isolate electrical signal cables from sources of electrical noise and power cables by minimum 12 inches.

3.5 FIELD QUALITY CONTROL

- A. Testing: As specified in Section 16950.
- B. Grounding

3.6 FIELD CONDITIONS AND RELATED REQUIREMENTS

- A. Existing underground water table is near or above the location for new ductbanks.
- B. Existing underground pull boxes, handholes, ductbanks, and manholes contain excessive amounts of water, conductors and debris.
- C. CONTRACTOR shall include cost for necessary dewatering, equipment cost to identify raceways, and cleaning equipment to perform the work required for new underground ductbanks, manholes and pull boxes.
- D. CONTRACTOR shall include necessary cost to clean all underground ductbanks and pull boxes prior to installation of required new conductors.

3.7 WIRING ALLOWANCES

- A. CONTRACTOR shall include allowance of necessary conductors and termination to provide all motorized equipment, electrical outlets, fixtures, communication outlets, instruments, and devices within 10 linear feet of location shown on the Drawings.
- B. CONTRACTOR shall include allowance of necessary conductors and related materials to provide all pull boxes, manholes and ductbanks within 20 linear feet of location shown on the Drawings.
- C. Prior installation of any raceway or related items identified in paragraphs A and B above, the OWNER shall have the right to make changes related to preferred location, at no additional cost.
- D. CONTRACTOR shall include allowance to provide necessary conductors for all equipment specified, identified in wiring/raceway schedules, equipment schedules, panelboards schedules, electrical single line diagrams, block diagrams, process and instrumentation diagrams (P&IDs), fixture schedules, and devices. Said necessary conductors may not be shown on the plan drawings, but they shall be sized by CONTRACTOR in accordance with

requirements of the National Electrical Code, and included in this allowance if the conductor is necessary for the complete operation of the included device or equipment.

- E. Include cost allowance to provide the following wiring for potential extra items not included in contact documents:
1. 500 linear feet of No. 12 AWG-XHHW-2 copper single conductor for installation in conduit.
 2. 300 linear feet of No. 14 AWG-XHHW-2 for installation in conduit.
 3. 100 linear feet of No. 16 AWG shielded one pair cable for installation in conduit.
 4. 500 linear feet of No. 12-2 w/Ground AWG-XHHW-2 with jacket for installation in conduit.

*****END OF SECTION*****

SECTION 16140 - WIRING DEVICES

PART 1 GENERAL

1.02 – SUMMARY

- A. Section Includes: Wiring devices including the following:
 - 1. Snap switches and toggle switches.
 - 2. Plugs and receptacles.
 - 3. Control and push-button stations.
 - 4. Pilot devices.
- B. Related Sections:
 - 1. Section 16950 - Testing, Training, and Facility Start-Up.

1.03 – SUBMITTALS

- A. Product Data.

1.04 - QUALITY ASSURANCE

- A. Provide industrial grade products for wiring devices. Commercial grade products are not acceptable, unless otherwise specified or indicated on the Drawings.

1.05 – WARRANTY

- A. Submit manufacturer's standard warranty.

PART 2 PRODUCTS

2.01 - SNAP OR TOGGLE SWITCHES

- A. Manufacturers: One of the following or equal:
 - 1. Hubbell.
 - 2. General Electric.
 - 3. Leviton.
 - 4. Bryant.
- B. Number of Poles: As indicated on the Drawings.
- C. Rating: 20 amperes, 125 volt.
- D. Special Switches and Covers: As specified or indicated on the Drawings.

2.02 - 120 VOLT RECEPTACLES

- A. Manufacturers: One of the following or equal:
 - 1. Hubbell.
 - 2. General Electric.
 - 3. Leviton.
 - 4. Bryant.
- B. Duplex Receptacles: 2-pole, 3-wire, grounded, 125 volts, industrial, rated at 20 amperes.
 - 1. Special Receptacles and Covers: As specified in Section 16134 or as indicated on the Drawings.
- C. Ground Fault Interrupter Receptacles (GFI): Rated at 20 amperes at 125 volts alternating current.

2.03 - 240 VOLT RECEPTACLES

- A. Manufacturers: One of the following or equal:

1. Hubbell.
 2. General Electric.
 3. Leviton.
 4. Bryant.
- B. Types: Single and 3-phase; suitable for equipment served.
- C. Rating: 20 amperes at 250 volts alternating current, unless otherwise indicated on the Drawings.

2.04 - 480 VOLT PLUGS AND RECEPTACLES

- A. Manufacturers: One of the following or equal:
1. Killark W Series.
 2. Crouse-Hinds.
 3. Leviton.
 4. Bryant.
- B. Types: Heavy-duty, 3-phase, weather resistant, grounding type, 4-wire, 4-pole device, suitable for equipment served.
- C. Rating: 60 amperes at 480 volts alternating current, unless otherwise indicated on the Drawings or specified.

2.05 DISTRIBUTED CONTROL SYSTEM RECEPTACLES

- A. Manufacturers: One of the following or equal:
1. Hubbell.
 2. Square D Company.
 3. Leviton.
 4. Bryant.
- B. Type: Surge suppression/isolated ground, red, minimum 20 amperes rated at 125 volts alternating current, with gasketed cover plate.

2.06 - UNINTERRUPTIBLE POWER SYSTEM RECEPTACLES

- A. Manufacturers: One of the following or equal:
1. Hubbell.
 2. Square D Company.
 3. Leviton.
 4. Bryant.
- B. Type: Surge suppression/isolated ground, red, minimum 20A rated at 125 volts alternating current, with gasketed cover plate.

2.07 - LOCAL PUSH-BUTTON MOTOR CONTROL STATIONS

- A. Manufacturers: One of the following or equal:
1. Furnas Electric Company.
 2. Square D Company.
 3. Allen-Bradley.
 4. Siemens.
 5. Cutler-Hammer.
 6. General Electric.
- B. Types: Heavy-duty, oiltight/watertight.
- C. Components: Selector switches, pilot light, and push buttons.
- D. Enclosures: As follows, unless otherwise indicated on the Drawings or specified:
1. For Nonhazardous Indoor Locations: NEMA 12.
 2. For Outdoor Locations: NEMA 4X.

- E. Field Located Maintained Push Buttons: Red mushroom head, push-to-stop, pull-to-reset, with maintained contacts.

2.08 - PILOT DEVICES

- A. Manufacturers: One of the following or equal:
 - 1. Furnas Electric Company.
 - 2. Square D Company.
 - 3. Allen-Bradley.
 - 4. Siemens.
 - 5. Cutler-Hammer.
 - 6. General Electric.
- B. Type: Heavy duty, suitable for mounting in control stations, on switchgear, switchboards, variable frequency drives, motor control centers, control panels, and other electrical equipment.
- C. Components: Oiltight/watertight push buttons, selector switches, pilot light, and incidental items.
- D. Casting: Durable 1 piece with chrome plated octagonal mounting nuts.
- E. Push Buttons: Heavy-duty plastic.
- F. Pilot Light Lenses: Shatter resistant plastic.

2.09 - CORD CONNECTOR GRIPS

- A. Non-Hazardous Areas:
 - 1. Manufacturers: One of the following or equal:
 - a. Killark, Series Z.
 - 2. Aluminum cord connector.
 - 3. Stainless steel mesh grip.

PART 3 EXECUTION

3.01 - INSTALLATION

- A. Install wiring devices in accordance with manufacturer's instructions.
- B. Mount wiring devices as indicated on the Drawings.

3.02 - LOCAL PUSH-BUTTON MOTOR CONTROL STATION INSTALLATION

- A. Install Start-Lockout-Stop push-button control stations adjacent to every motor unless otherwise indicated on the Drawings.

3.03 - PROTECTION

- A. Protect products until acceptance by OWNER.

*****END OF SECTION*****