SHASTA REGIONAL TRANSPORTATION AGENCY
COUNTY OF SHASTA
STATE OF CALIFORNIA

CONTRACT BOOK FOR SHASTA REGIONAL TRANSPORTATION AGENCY HVAC AND PARKING IMPROVEMENTS

Contract No. 2024-03

FOR USE IN CONNECTION WITH:

- DRAWINGS FOR PROPOSED REPLACEMENT OF HVAC UNITS AND PARKING LOT WORK AT 1255 EAST STREET, REDDING, CA.
- STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS GENERAL PREVAILING WAGE RATES
- 2022 CALIFORNIA BUILDING CODE

INCLUDED ARE:

- NOTICE TO BIDDERS
- BID AND BOND FORMS
- CONTRACT
- CONDITIONS OF THE CONTRACT BIDS

PRE-BID MEETING: 2:00 P.M., FEBRUARY 6, 2024

OPENING OF BIDS: 11:00 A.M., FEBRUARY 20, 2024

Approved: _____ Date: 1/29/2024
Sean Tiedgen, AICP, Executive Director

INFORMATION ONLY - NOT A PART OF THIS CONTRACT

In accordance with SB 854 passed by the California State Senate on June 20, 2014, all contractors and subcontractors bidding and performing work on Public Works Projects are required to register with the Department of Industrial Relations (DIR) on an annual basis. See the Notice to Bidders for information on **California Labor Code Section 1771.1.**

Division 20, Chapter 6.95 of the California Health and Safety Code, in part, requires the submission of a Business Plan for Emergency Response by the operators of sites where hazardous materials are stored and handled at or above the State of California minimum reportable amounts. These amounts currently are 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet at standard temperature and pressure for a compressed gas. (H&S Section 25503.5)

The Shasta County Division of Environmental Health, which has been designated by the Shasta County Board of Supervisors as the administering agency for Chapter 6.95 of the California Health and Safety Code, advises that fees for the submission of a business plan can exceed $1,500.

The State of California Franchise Tax Board requires that whenever payments are made to a non-resident independent contractor in excess of $1,500 for services rendered, 7% of the gross amount must be withheld. A non-resident is anyone who is not a resident of California. An individual who comes into the state to perform a contract of short duration is considered to be a non-resident. A corporation is also subject to the withholding requirements if it is neither incorporated nor qualified to do business in California.

TABLE OF CONTENTS

SECTION 00 01 10

DIVISION NO.	SECTION TITLE	PAGES INCLUSIVE
DIVISION 00	**PROCUREMENT AND CONTRACTING REQUIREMENTS**	
Section 00 21 13	Instructions to Bidders	1 – 5
Section 00 25 13	Pre-Bid Meetings	1 – 2
Section 00 31 13	Construction Schedule and Liquidated Damages	1 – 2
Section 00 41 13	Bid Form	1 – 3
Section 00 41 14	Bidder Information Sheet	1
Section 00 43 13	Bidder's Bond	1
Section 00 43 36	Proposed Subcontractor Form	1
Section 00 45 13	Statement of Qualifications for Construction Work	1
Section 00 45 19	Non-Collusion Affidavit	1
Section 00 45 26	Certifications Concerning Workers' Compensation	1
Section 00 45 51	Certification Regarding Debarment and Suspension	1
Section 00 45 52	Declaration of Contractor's License Status	1
Section 00 45 53	Public Contract Code Certifications	1 – 3
Section 00 50 70	State Wage Determination	1
Section 00 50 80	Payroll Information	1
Section 00 52 13	Contract between SRTA and Contractor	1 – 4
Section 00 61 13.13	Performance Bond	1 – 2
Section 00 61 13.16	Payment Bond	1
Section 00 61 23	Escrow Agreement for Security Deposits in Lieu of Retention	1 – 4
Section 00 65 36	Project Closeout and Warranty	1 – 7
Section 00 72 13	General Conditions	1 – 46
Section 00 73 13	Supplementary Conditions	1 – 3
DIVISION 01	**GENERAL REQUIREMENTS**	
Section 01 25 13	Product Substitution Procedures	1 – 6
Section 01 31 19	Project Meetings	1 – 2
Section 01 32 16	Construction Progress Schedules	1
Section 01 33 00	Submittal Procedures	1 – 6
Section 01 42 00	References	1 – 11
Section 01 56 00	Temporary Barriers, Closures and Controls	1 – 3
Section 01 60 00	Product Requirements	1 – 3
Section 01 73 29	Cutting and Patching	1 – 4
DIVISION 08	**OPENINGS**	
08 14 00	WOOD DOORS	
08 80 00	GLAZING	

DIVISION 09 **FINISHES**
09 21 16 GYPSUM BOARD ASSEMBLIES
09 22 16 NON-STRUCTURAL METAL FRAMING
09 51 13 ACOUSTIC CEILINGS
09 65 13 RESILIENT BASE
09 91 00 PAINTING

DIVISION 22 **PLUMBING**
22 00 00 PLUMBING

DIVISION 23 **HEATING, VENTILATING, AND AIR CONDITIONING**
23 00 00 HEATING, VENTILATING, AND AIR CONDITIONING
23 05 93 TESTING, ADJUSTING, BALANCING

DIVISION 26 **ELECTRICAL**
26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
26 05 29 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
26 05 33 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
26 27 26 WIRING DEVICES
26 28 16 ENCLOSED SWITCHES AND CIRCUIT BREAKERS

DIVISION 32 **EXTERIOR IMPROVEMENTS**
32 12 16 ASPHALT PAVING

END OF SECTION 00 01 10

INSTRUCTIONS TO BIDDERS

SECTION 00 21 13

PART 1 – GENERAL

1.1. **RECEIPT OF BIDS:** Sealed bids will be accepted until 11:00 A.M. local time, February 20, 2024, at the office of the Shasta Regional Transportation Agency, 1255 East Street, Suite 202, Redding, California 96001, at which time they will be publicly opened and read. Bids received after 11:00 A.M. will not be considered responsive and will be returned to the bidder unopened. Telephone and fax proposals will not be accepted. **Each bidder should mark its bid as "Bid for SRTA HVAC and Parking Improvements."** Bids shall be deemed to include the written responses to the bidder to any questions or requests for information of SRTA made as part of bid evaluation process after submission of bid.

1.2. **DETERMINATION OF APPARENT LOW BIDDER:** The apparent low bid will be based on the total amount of the bid in Section 00 41 13, "Bid Form."

1.3. **REQUIRED BID FORM.** All bidders must submit bids on the Section 00 43 13, the "Bid Form." SRTA will reject as non-responsive any bid not submitted on the required form. Bids must be full and complete. Bidders must complete all bid items and supply all information required by the bidding documents and specifications. SRTA reserves the right in its sole discretion to reject any bid as non- responsive as a result of any error or omission in the bid. Bidders may not modify the Bid Form or qualify their bids. Bidders must submit clearly and distinctly written bids. Bidders must clearly make any changes in their bids by crossing out original entries, entering new entries and initialing new entries. SRTA reserves the right to reject any bid not clearly written. The Bid Form shall be signed by the bidder's legal representative as indicated on the Bid Form. If the bid is made by an individual, it shall be signed and his/her full name and his/her address shall be given; if it is made by a partnership, it shall be signed with the co-partnership name by a member of the firm, who shall sign his/her own name and provide the name and address of each member; and if it is by a corporation, the bid shall show the name of the corporation and the state under the laws of which the corporation was chartered. When the bid is signed by the duly authorized officer or officers of the corporation, it shall be attested by the corporate seal, and the names and titles of the principal officers of the corporation shall be given. When a bid is signed by an agent, other than the officer or officers of a corporation authorized to sign contracts on its behalf or a member of a partnership, a "Power of Attorney" must be filed with the SRTA prior to opening bids or shall be submitted with the bid; otherwise, the bid may be rejected as irregular and unauthorized. Bids submitted as joint ventures must so state and be signed by each joint venturer.

1.4. **REQUIRED BID SECURITY:** Bidders must submit with their bids either cash, a cashier's

check, or certified check drawn on a responsible bank in the United States, or corporation surety bond furnished by a surety authorized to do business in the State of California of not less than ten percent (10%) of aggregate amount of base bid, payable to SRTA. Bidders shall use the required form of corporate surety bond contained in Section 00 43 13, "Bidders Bond." SRTA will reject as non-responsive any bid submitted without the required bid security. SRTA may retain a bidder's security of other than the apparent low bidder for a period of sixty (60) days after award or full execution of the Contract, whichever first occurs. SRTA may award the Contract to the next apparent low bidder if the apparent low bidder is determined non-responsive or non-responsible, or fails to execute the Contract and provide the required bonds, guarantees and other documents within the required time periods. Upon full execution of the Contract, SRTA will return to the respective unsuccessful bidders all bid securities and bidder's bond.

1.5. **REQUIRED SUBCONTRACTORS LIST:** All Bidders must submit with their bids, the required information on all subcontractors in Section 00 43 36, "Subcontractors Form," for those subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement, in excess of one half of one percent (0.5%) of the total bid. The Subcontractor List Form shall be submitted in a separate sealed envelope. Violation of this requirement may result in a bid being deemed non-responsive and not being considered.

1.6. **CONTENTS OF BID ENVELOPE:** The bid envelope shall contain all of the following:

Section 00 41 13 – Bid Form
Section 00 41 14 – Bidder Information Sheet
Section 00 43 13 – Bidder's Bond
Section 00 43 36 – Subcontractor List Form (In a separate sealed envelope.)
Section 00 45 13 – Statement of Qualifications for Construction Work
Section 00 45 19 – Non-Collusion Affidavit
Section 00 45 26 – Certification Concerning Workers' Compensation
Section 00 45 51 – Certification Regarding Debarment and Suspensions
Section 00 45 52 – Declaration of Contractor License Status
Section 00 45 53 – Public Contract Code Certifications

1.7. **OTHER REQUIREMENTS PRIOR TO BIDDING:** Submission of a bid certifies bidder's careful examination of the contract documents and all conditions contained therein, the work site, and the surrounding area and complete understanding of the nature, extent and location of the work to be performed. Submission of bid shall constitute bidder's express representation to SRTA that bidder has fully completed these tasks.

1.8. **ADDENDA:** If any party contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the contract documents, or finds discrepancies in or omissions from the plans or specifications; that party may submit to SRTA a written request for an interpretation or correction thereof, to SRTA's Architect:

Deven Carter, Associate Principal Architect
Nichols, Melburg, and Rossetto
Address: 300 Knollcrest Drive, Redding, CA 96002
Email: carter@nmrdesign.com
Phone: 530.222.3300

The party submitting the request will be responsible for its prompt delivery at least three full workdays (Monday through Friday excluding SRTA's holidays) prior to the bid opening. Answers to requests that do not give any single bidder an unfair advantage will be given orally. Otherwise, interpretations or corrections of the documents will be made only by addendum duly issued. Bidding documents, including any addenda, are available from SRTA's architect electronically. Plans can also be made available in person at their address at NMR, 300 Knollcrest Drive, Redding, CA 96002.

Also, through SRTA's Architect, a bidder may join a Document Holder's List for this bid. Joining the Document Holder's List, and checking to see if there are addenda issued prior to bidding are the sole responsibility of the bidder. If any addendum is issued, SRTA's Architect will attempt to notify each document holder on the Document Holder's List using the e-mail address and the fax numbers provided. SRTA and SRTA's Architect shall not in any way be responsible or liable for failure of a document holder to receive notification. It is the bidder's responsibility, prior to submitting the bid, to check or otherwise inquire to determine whether any addenda have been issued. Neither SRTA nor SRTA's Architect shall be deemed responsible for any oral clarification nor will it be binding.

1.9. **BID OPENING:** SRTA will stamp bids with the date and time of receipt. Bids will be opened and read publicly at the time and place indicated in Section 1.1, "Receipt of Bids," above. Bidders or their authorized agents may be present. After opening of bids, SRTA will review all bids for accuracy and reserves the right to correct obvious errors. Upon completion of review, the bids will be ranked by the bid amount and the apparent low bidder will be determined and notified.

1.10. **WITHDRAWL OF BIDS:** Any bid may be withdrawn or revised by a bidder personally or upon its written or telegraphic request at any time prior to the hour set for the opening of bids, but not thereafter. It shall be the bidder's sole responsibility to see that such written or telegraphic request is received in proper time, and bidder shall confirm this action in writing over its signature within 48 hours thereafter. Unless required otherwise by law, no bidder may withdraw its bid for a period of 90 days after the date of the opening of bids.

1.11. **FAILURE TO EXECUTE AND DELIVER DOCUMENTS:** If the bidder to whom the contract is awarded shall fail or neglect, within ten (10) calendar days from the date of the receipt of a notice of award, to execute and deliver all required contract documents and file all

required bonds, insurance certificates and other documents, SRTA may, in its sole discretion, deposit the bidder's surety bond, cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for bidder's failure to enter into the contract documents. Bidder agrees that calculating the damages SRTA may suffer as a result of bidder's failure to execute and deliver all required contract documents would be extremely difficult and impractical and that the amount of bidder's required bid security shall be the agreed and presumed amount of SRTA's damages.

1.12. **BIDDER'S BOND, PERFORMANCE BOND AND PAYMENT BOND:** Bid security must be submitted with the bid. The successful bidder, prior to execution of the contract, must submit a Performance Bond in the full amount of the contract, using the form of Section 00 61 13.13, "Performance Bond." The successful bidder, prior to execution of the contract, must submit a Payment Bond in the full amount of the contract, using the form of Section 00 61 13.16, "Payment Bond."

1.13. **INSURANCE:** It is highly recommended that bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of the insurance certificates and endorsements required. A bidder, who executes the contract and thereafter fails to comply strictly with the insurance requirements, will be deemed to be in breach of contract.

1.14. **WAGE RATES:** Wage rates and restrictions on working days and times shall meet all requirements of the Labor Code of the State of California for public contracts. The bidder may contact the Director of the Department of Industrial Relations, phone number (415) 703-4774, website http://www.dir.ca.gov/DLSR/statistics_research.html to obtain a schedule of general prevailing wages applicable to the location and work to be done. The Contractor and the Contractor's subcontractors are responsible for compliance with the requirements of Sections 1777.5 and 1777.6 of the Labor Code of the State of California regarding employment of apprentices.

1.15. **DEPARTMENT OF INDUSTRIAL RELATIONS CONTRACTOR REGISTRATION:** In accordance with California Labor Code Section 1771.1, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

1.16. **EQUAL EMPLOYMENT OPPORTUNITY:** Contractor shall comply with all applicable federal, state, and local laws, rules and regulations in regard to nondiscrimination in employment because of sex, race, color, creed, ancestry, religion, national origin,

physical or mental disability, sexual orientation, medical condition (cancer, HIV and AIDS), age (over 40), marital status, or other protected status, nor deny family care leave and/or pregnancy disability leave.

1.17. **AWARD:** If the contract is to be awarded, it will be awarded to the lowest responsible responsive bidder per Section 1.2, "Determination of Apparent Low Bidder," above within 90 calendar days after the bid opening.

1.18. **BID PREPARATION COST:** Bidders are solely responsible for the cost of preparing their bids.

1.19. **RESERVATION OF RIGHTS:** SRTA specifically reserves the right, in its sole discretion, to reject any or all bids, or re-bid, or to waive minor irregularities from bid requirements. If no bids are received, SRTA reserves the right to identify interested contractor(s) and negotiate directly without re-bidding.

1.20. **SECURITIES IN LIEU OF RETENTION:** Public Contract Code Section 22300 gives the Contractor the option to deposit securities with an escrow agent as a substitute for retention earnings to be withheld by SRTA.

1.21. **PRODUCT SUBSTITUTION PROCEDURES:** Bidders may request a substitution of products and materials in accordance with Section 01 25 13, "Product Substitution Procedures."

END OF SECTION 00 21 13

PRE-BID MEETINGS

SECTION 00 25 13

PART 1 - GENERAL

1.1. PRE-BID MEETING LOCATION

1.1.1. SRTA will hold a pre-bid meeting and site visit as indicated below:

1.1.1.1. Meeting Date: February 6, 2024

1.1.1.2. Meeting Time: 2:00 P.M local time

1.1.1.3. Location: 1255 East Street, Suite 202, Redding, CA 96001

1.2. PURPOSE

1.2.1. The purpose of the meeting and site visit is to provide Bidders an opportunity to familiarize themselves with the Work and existing conditions. SRTA and SRTA representative(s) will be present.

1.3. ATTENDANCE

1.3.1. Attendance at the pre-bid conference and site visit is not mandatory. However, all prime contract and subcontract Bidders are strongly advised to attend. Others are invited to attend.

1.3.2. The Bidder is required to sign that they have familiarized themselves with the local conditions including, but not limited to: inspecting in and around the work areas; the construction of the existing building; operating hours of the building and limitations on noise, on access and on shutting off utilities to other areas of the building; and the work's security requirements.

1.4. SITE ACCESS

1.4.1. Site access is limited so as to not disrupt building tenants. Bidders are encouraged to attend the meeting to view the site; however SRTA may provide an alternative time to inspect the site if unable to attend the pre-bid meeting. Bidders must contact SRTA in advance to schedule a site visit if unable to attend the pre-bid meeting to ensure all necessary SRTA personnel can be present.

1.5. BIDDER QUESTIONS

1.5.1. Bidders may submit written questions to be addressed at the pre-bid meeting, at a minimum of two (2) days prior to the meeting.

1.6. AGENDA

1.6.1. The pre-bid meeting agenda will include a review of topics that may affect the proper submittal of bids, including the following:

A. Procurement
B. Communication during bidding phase
C. Contracting Requirements
D. Construction Documents
E. Separate Contracts
F. Schedule and Phasing
G. Site visit or walkthrough

H. Post-meeting Addendum

1.7. MINUTES

1.7.1. Minutes of the meeting will not be recorded or provided.

1.7.2. No information provided by SRTA or any of SRTA's representatives at the pre-bid meeting [and site visit] shall be binding, unless said information is included in an Addendum.

END OF SECTION 00 25 13

CONSTRUCTION SCHEDULE AND LIQUIDATED DAMAGES

SECTION 00 31 13

PART 1 – GENERAL

1.1. CONSTRUCTION SCHEDULE

1.1.1. The Contractor must prepare a construction schedule for the work conforming to Section 01 32 16, "Construction Schedules," and to Part 8, "Time," of Section 00 72 13, "General Conditions." This shall include a phasing plan to minimize the impact of construction work on all building tenants and their customers. Refer to Section 00 31 13, "Additional Requirements of Work."

1.1.2. During the construction period the Contractor must regularly provide information and updates on scheduling and coordination of the work to SRTA.

1.1.3. The Contractor must provide a construction schedule within five (5) calendar days of receipt of a Notice to Proceed. The Contractor must submit a current and updated construction schedule within three (3) calendar days of a written request by SRTA. Refer to Section 01 32 16, "Construction Schedules."

1.2. ADDITIONAL REQUIREMENTS OF WORK

1.2.1. SRTA's employees and building tenants will occupy the building during construction. The Contractor shall allow normal business operations by SRTA, all building tenants and their customers during the project. Any temporary traffic controls, signage, barriers, construction fencing or area closures by Contractor that will affect interior or exterior access to buildings must be scheduled in advance with and approved by SRTA. Any construction work that may impact SRTA or other building tenants during normal business operations, including temporary restrictions to site access, must be scheduled in advance and approved by SRTA.

1.2.2. Contractor shall prepare a phasing plan that minimizes disruption of work to SRTA and building tenants. The phasing plan should indicate the anticipated number of days for each phase, any impact to SRTA's employees or tenants, indicate if any work is proposed to be done in the evenings or on weekends, allow for the moving of equipment and supplies by SRTA between applicable phases, and be inclusive of all work activities.

1.2.3. Contractor shall meet all security requirements of SRTA.

1.3. DATE OF COMPLETION

1.3.1. All work shall be complete 90 calendar days from the date indicated on the Notice to Proceed. This day shall be referred to as the "Date of Completion."

1.3.2. The date of completion of the work or designated portion thereof is the date

certified by SRTA when construction should be sufficiently complete, in accordance with the contract documents, so that SRTA or separate contractors can occupy or utilize the space or a designated portion thereof for the use for which it is intended.

1.4. **LIQUIDATED DAMAGES**

1.4.1. In the event the Contractors fails to complete the work before the agreed upon time of completion, including any approved extensions thereof, the Contractor shall pay SRTA liquidated damages for each calendar day past the specified date, in accordance with Part 8.3.4, "Discretionary Time Extensions," of Section 00 72 13, "General Conditions." The amount of liquidated damages is $200.00 (amount) per calendar day.

1.4.2. In the event of undue or excessive hardship resulting from an unauthorized or inexcusable delay in the completion of the work, SRTA reserves the right to make a detailed written determination of the losses suffered, and to receive full compensation from the Contractor.

END OF SECTION 00 31 13

BID FORM

SECTION 00 41 13

PART 1 – GENERAL

GENERAL BID INFORMATION

Agency: Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001

Bid for: SRTA HVAC AND PARKING IMPROVEMENTS
Contract No. 2024-03

1.1. We, the undersigned, attest that we have familiarized ourselves with the local conditions (as addressed during the pre-bid conference and site visit) including: inspecting in and around the work areas; the construction of the existing building; operating hours of the building and limitations on noise, on access and on shutting off utilities to other areas of the building; the work's security requirements; and all of the contract documents, including the advertisement for bids, instructions to bidders, general conditions, the bid form, contract between SRTA and the Contractor, drawings and any addenda issued by SRTA.

1.2. We the undersigned do hereby propose to furnish all labor, materials, necessary tools, expendables, equipment, utility and transportation services, including payment of State of California and local sales or use taxes and procurement of licenses necessary to complete the work required in strict accordance with the contract documents, including all addenda.

1.3. The undersigned agree(s) to enter into and execute a Contract, if awarded on the basis of this bid, and to furnish a performance bond and a payment bond, both in the full amount of the contract, and proof of insurance in accordance with these contract documents, within ten (10) calendar days after date of receipt of the contract.

1.4. The undersigned declare(s) that the cost of a performance bond and payment bond, both in the full amount of the Contract, is included in this bid.

1.5. Liquidated Damages for Failure to Enter into the Contract:

Enclosed herewith is cash, a bidder's bond, cashier's check, or certified check, made payable to the Shasta Regional Transportation Agency, which is not less than 10% of the total amount of the base bid. Should this bid be accepted and the undersigned thereafter

fail to enter into the contract or should the undersigned fail to provide the required bonds or proof of insurance, IT IS HEREBY UNDERSTOOD AND AGREED that it is, and will be, difficult or impossible to determine the actual damage which SRTA will sustain in the event of, and by reason of, such failure to enter into the Contract. The undersigned further agrees that said cash, check or bidder's bond shall be forfeited as liquidated damages (not as a penalty), if the undersigned fails to enter into a contract on the basis of this bid or fails to provide the required bonds and insurance, after receiving the Notice of Award.

1.6. The undersigned acknowledges receipt of the following addenda:

1. Addendum No._____ Dated:_____
2. Addendum No._____ Dated:_____
3. Addendum No._____ Dated:_____
4. Addendum No._____ Dated:_____

1.7. This bid is valid for ninety (90) calendar days following the date for receiving bids.

1.8. The undersigned proposes to enter into contract for the following amount indicated below. This amount is a lump sum bid for work included in this contract, necessary to complete the SRTA HVAC and Parking Improvements project in Redding, California as shown in the contract documents. The work shall be completed within the time limits specified in Section 00 31 13, "Construction Schedule and Liquidated Damages." The undersigned is aware the contract includes provisions for liquidated damages as specified in Part 1.4, "Liquidated Damages," of Section 00 31 13, "Construction Schedule and Liquidated Damages," if the work is not completed within the agreed time of completion.

PART 2 – BID

2.1. BID (including all addenda) for all associated work:

SRTA HVAC AND PARKING IMPROVEMENTS (Lump Sum):	$	
Total Amount in Words		Total

[bid signature page on next page]

Bid Submitted by:

Company's Name: _____

Type of Organization: _____
(Individual, Partnership, Corporation, etc.)

Partner's Name(s): _____
(If Partnership)

Seal (if Corporation): _____
(Date)
By: _____
(Signature of Contractor)

_____
(Print Name of Contractor)

_____
(Address)

_____
(Telephone)

Contractor License:

Class:_____Number:_____Expiration Date:_____

Attachments:

I. Section 00 41 13 – Bid Form
II. Section 00 41 14 – Bidder Information Sheet
III. Section 00 43 13 – Bidder's Bond
IV. Section 00 43 36 – Subcontractor List Form (In a separate sealed envelope)
V. Section 00 45 19 – Non-Collusion Affidavit
VI. Section 00 45 26 – Certification Concerning Workers' Compensation
VII. Section 00 45 51 – Certification Regarding Debarment and Suspensions
VIII. Section 00 45 52 – Declaration of Contractor License Status
IX. Section 00 45 53 - Public Contract Code Certifications

END OF SECTION 00 41 13

BIDDER INFORMATION SHEET

SECTION 00 41 14

The bidder must check one of the following classifications that fit its type of business organization and furnish all information required under that classification. Please type or print your answers.

( ) BIDDER IS AN INDIVIDUAL

Bidder's name as it appears on State Contractor's license is:

_____

( ) BIDDER IS A PARTNERSHIP

Bidder's firm name, individual or partnership, as it appears on State Contractor's License is:

_____

The full names of all the partners as they appear on State contractor's License are:

_____

_____

_____

_____

( ) BIDDER IS A CORPORATION

The full name of the corporation as it appears on the State contractor's License is:

_____

Corporation is incorporated in the State of _____

END OF SECTION 00 41 14

BIDDER'S BOND

SECTION 00 43 13

BIDDER'S BOND TO ACCOMPANY BID
(Penalty of this Bond must be 10% of the Base Bid amount)

KNOW ALL PERSONS BY THESE PRESENTS:

That we, _____, as principal _____ and _____, as surety, are held and firmly bound unto Shasta Regional Transportation Agency in the sum of _____ dollars, ($_____), to be paid to Shasta Regional Transportation Agency or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain proposal of the above bounden for the SRTA HVAC and Parking Improvements project dated _____ is accepted by SRTA and if the above bounden_____ its heirs, executors, administrators, successors and assigns, shall duly enter into, execute and deliver a signed agreement for such construction, and shall execute and deliver the required performance bond, payment bond, liability insurance policy or endorsement and workers' compensation policy or endorsement, within ten (10) calendar days from the date of the receipt of a notice of award to the above bounden_____ from SRTA, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue. In the event suit is brought upon this bond by SRTA and judgment is recovered, the Surety shall pay all costs incurred by SRTA in that suit, including a reasonable attorney's fee, to be set by the court.

Witness our hands this _____ day of _____, _____.

_____
Principal Seal

_____
By Surety Seal

_____
By Agency of Record

END OF SECTION 00 43 13

PROPOSED SUBCONTRACTORS FORM

SECTION 00 43 36

This attachment shall be submitted with the Bid Form, but in a separate sealed envelope. If no subcontractors are to be involved and all work is to be performed by the Contractor, so state. Complete address information (including street address, city, and state), if not included on the submitted subcontractor list from at bid time, must be faxed to SRTA (Fax number: 530-262-6189) within 24 hours after Bid opening.

Subcontractor List Forms submitted by unsuccessful bidders will be returned unopened.

Pursuant to the provisions of Sections 4100 to 4113, inclusive, of the Public Contract Code of the State of California, every Bidder shall set forth the name and location of the place of business of each subcontractor who will perform work or labor in or about the construction of the work or improvement in an amount in excess of one-half of one percent (0.5%) of the Bidder's total bid. If the Bidder fails to specify a subcontractor for any portion of the work in excess of one-half of one percent (0.5%) of the Bidder's total bid, the Bidder agrees to perform that portion himself/herself. The following is the required list of subcontractors:

BIDDER'S LIST OF SUBCONTRACTORS
(Use other side & extra sheets if necessary)

Subcontractor Name	**Address**	**Subcontractor License No.**	**Type of Work**	**Percent of Contract Work**

Date:_____ Bidder's Signature:_____

END OF SECTION 00 43 13

STATEMENT OF QUALIFICATIONS FOR CONSTRUCTION WORK

SECTION 00 45 13

Provide a list of projects similar in size, scope and cost or larger to this project completed in the last five (5) years. Indicate size of project (square footage), address of project, year completed, type of project and total cost.

END OF SECTION 00 45 13

NON-COLLUSION AFFIDAVIT

SECTION 00 45 19

State of California
County of Shasta

_____, being first duly sworn deposes and

states that he/she is _____
(Insert "Sole Owner", "Partner", "President", "Secretary", or other proper title)

of _____ who submits herewith to the Shasta
(Insert name of bidder)

Regional Transportation Agency proposal:

- *That all statements of fact in said proposal are true;*
- *That said proposal is genuine and not collusive or sham;*
- *That said proposal was not made on the behalf of or in the interest of any party not herein named within the proposal;*
- *That said bidder has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding, and that the bidder has not in any manner sought collusion to secure an advantage over any other bidder.*

I certify under penalty of perjury that the above information is correct.

By: _____Title: _____

Date: _____

Subscribed and sworn to before me

this _____ day of _____, 20___.

_____
(Signature of Notary Public)

My Commission expires _____

END OF SECTION 00 45 19

CERTIFICATIONS CONCERNING WORKERS' COMPENSATION

SECTION 00 45 26

Project/Contract No. 2024-03 between the Shasta Regional Transportation Agency (the "Owner" or "SRTA") and _____ (the "Contractor" or the "Bidder") (the "Contract" or the "Project").

Labor Code section 3700 in relevant part provides:

> Every employer except the State shall secure the payment of compensation in one or more of the following ways:
>
> a. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state.
>
> b. By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees.

I, the undersigned, declare that I'm aware of the provisions of section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with provisions of that coded, and I will comply with such provisions before commencing the performance of the work of this contract.

Date: _____

Signature: _____

Print Name: _____

Title: _____

(In accordance with Article 5 – commencing at section 1860, chapter 1, part 7, division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under this Contract.)

END OF SECTION 00 45 26

CERTIFICATION REGARDING DEBARMENT AND SUSPENSION

SECTION 00 45 51

The undersigned (authorized official signing for the bidder) certifies to the best of his or her knowledge and belief, that the bidder, defined as the primary participant in accordance with 45 CFR Part 76, and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency;
2. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
4. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

Date: _____ Bidder's Signature: _____

END OF SECTION 00 45 51

DECLARATION OF CONTRACTOR'S LICENSE

SECTION 00 45 52

I, _____, declare under penalty of perjury under the laws of the State of California that the following is true and correct:

1. The State Contractor's license number for the signatory Contractor is: _____
2. The license expiration date is: _____,
   executed on _____, 20___, at _____, California.

_____

Contractor's Firm Name – Print or Type

_____

Signatory's Name – Print or Type

_____

Signature

_____

Capacity in Contracting Firm – Print or Type

END OF SECTION 00 45 52

PUBLIC CONTRACT CODE CERTIFICATIONS

SECTION 00 45 53

The undersigned (authorized official signing for the bidder) hereby declares under penalty of perjury the following:

1. In accordance with Section 6109 of the Public Contract Code, the bidder declares that bidder will not enter into any contract with a subcontractor who/which has been debarred pursuant to Section 1771.1 or Section 1777.7 of the Labor Code. No public monies shall be paid to a debarred subcontractor, and any contract entered into for public work between a prime contractor and debarred subcontractor shall be considered void as a matter of law. Any payments made to a debarred subcontractor shall be returned to SRTA. The prime contractor shall be solely responsible for all payments to a debarred subcontractor. In no case shall any public money be used to pay a debarred subcontractor.

2. "NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER
AND SUBMITTED WITH BID
(Public Contract Code Section 7106)

   State of California)
   County of Shasta) ss.
)

   _____, being first duly sworn, deposes and says that he or she is _____of _____ _____ the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid."

3. In accordance with Section 10162 of the Public Contract Code, has the bidder, any

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

Yes_____ No_____

If the answer is yes, explain the circumstances in the following space (use additional sheets if necessary).

4. In accordance with Section 10232 of the Public Contract Code, has more than one final, unappealable finding of contempt of court by a federal court has been issued against the bidder within the immediately preceding two-year period because of the bidder's failure to comply with an order of a federal court which orders the bidder to comply with an order of the National Labor Relations Board? For purposes of this section, a finding of contempt does not include any finding which has been vacated, dismissed, or otherwise removed by the court because the contractor has complied with the order which was the basis for the finding.

   YES___ NO___

5. In accordance with Section 10285.1 of the Public Contract Code, the bidder declares that neither the bidder nor any subcontractor to be engaged by the bidder has been convicted of any of the offenses referred to in this section within the preceding three years. These offences include if that bidder or any subcontractor to be engaged by the bidder, or any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, has been convicted by a court of competent jurisdiction of any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Section 1101, with any public entity, as defined in Section 1100, including, for the purposes of this Part, the Regents of the University of California or the Trustees of the California State University.

6. In accordance with Section 1771.1 of the California Labor Code, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section

1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

By my signature I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Sections 1609, 7106, 10162, 10232, 10285.1, and 1771.1 of the Public Contract Code are true and correct.

Date: _____ Bidder's Signature: _____

END OF SECTION 00 45 53

STATE WAGE DETERMINATION

SECTION 00 50 70

Part 1 – General

1.1. Instructions

1.1.1. The contractor is required to post the state wage determination on the job site for the work in a conspicuous location available to all workers.

END OF SECTION 00 50 70

PAYROLL INFORMATION SECTION

SECTION 00 50 80

Part 1 – General

1.1. Instructions:

1.1.1. The Contractor shall provide certified payroll to the project manager for payroll on this work pursuant to Labor Code section 1776. The Contractor will submit this certified payroll upon request and at least once a month when submitted with the monthly progress payment request. The certified payroll records will include, but are not limited to:

a. Name, address, social security number, and ethnic code of employee or employees
b. Number of withholding exemptions
c. Work classification
d. Day, date, and hours worked
e. Total hours
f. Rate of pay
g. Gross pay
h. Deductions
i. Net wages paid

END OF SECTION 00 50 80

CONTRACT BETWEEN
THE SHASTA REGIONAL TRANSPORTATION AGENCY AND CONTRACTOR

This agreement is entered into as of the last date it has been signed by both parties, between the Shasta Regional Transportation Agency ("Owner") ("SRTA") and _____ _____ ("Contractor") ("Agreement").

The Project: **Shasta Regional Transportation Agency HVAC and Parking Improvements**

The Owner and the Contractor agree as set forth below.

1. THE WORK

The Contractor shall perform all the work required by the Contract Documents for the Shasta Regional Transportation Agency HVAC and Parking Improvements.

2. THE CONTRACT DOCUMENTS

The Contract Documents consist of this Section 00 52 13, the other documents in the "Contract Book for Shasta Regional Transportation Agency HVAC and Parking Improvements" (Contract No. 2024-03), the "Tenant Improvements for the Shasta Regional Transportation Agency" drawings, and Section 00 72 13 "General Conditions," Part 1.1.1, "The Contract Documents," which documents are hereby incorporated into this Contract and made a part hereof. Sections of the Contract Book for Shasta Regional Transportation Agency HVAC and Parking Improvements may be referenced in these Contract Documents solely by their section number, or by their section number and name.

3. TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The work to be performed under this Contract shall commence no later than five (5) calendar days after the date established in the Notice to Proceed issued to the Contractor, and shall be carried out and completed according to the schedule set forth in Section 00 31 13, "Construction Schedule and Liquidated Damages."

The Contractor agrees to pay SRTA liquidated damages in the amount as specified in Section 00 31 13, "Construction Schedule and Liquidated Damages," and Part 8.3.5, "Liquidated Damages," of Section 00 72 13, "General Conditions," for each and every calendar day of delay.

4. CONTRACT SUM

SRTA shall pay the Contractor in currents funds for work completed, subject to additions and deductions by Change Order or as otherwise provided in the Contract Documents, the sum of _____ Dollars ($_____).

5. PROGRESS PAYMENTS

Based upon Applications for Payment submitted to SRTA by the Contractor and Certificates for Payment issued by SRTA, SRTA shall make progress payments on account of the Contract Sum to the Contractor as provided in the Contract Documents and as follows:

Progress Payments: The Contractor shall on or before the first day of each month, make an estimate of the work performed during the previous month and submit an invoice for payment to SRTA's project manager and SRTA's project architect for review and approval. SRTA shall pay to the Contractor up to ninety-five percent (95%) of the value of said work completed, as checked and approved by SRTA, within thirty (30) calendar days of SRTA's receipt of an undisputed and properly submitted progress payment request. The remaining five percent (5%) of the contract estimate shall be retained by SRTA until the time of final acceptance of said work.

6. FINAL PAYMENT

Final payment, constituting the entire unpaid balance of the Contract sum, shall be paid by SRTA to the Contractor when:

1. The work has been completed;
2. The Contract fully performed;
3. SRTA has issued a Certificate for Payment which approves the final payment due the Contractor;
4. The SRTA Board of Directors has formally accepted the work as complete; and
5. The Notice of Completion has been filed by the Shasta County Recorder's Office.

7. PREVAILING WAGES

The Contractor agrees that State Prevailing Wages apply to this Work and that the Contractor will pay the rates for each trade or craft and shall require the subcontractors on the project to pay the rates for each trade and craft. The Contractor shall meet the requirements of Section 00 50 80, "Payroll Information," and the Contractor agrees to repay SRTA any and all amounts paid to any subcontractor in violation of Public Contract Code Section 6109.

8. NOTICES

Any notice required to be given pursuant to the terms and provisions of this contract shall be addressed as follows:

If to SRTA: Shasta Regional Transportation Agency
Attn: Sean Tiedgen, AICP, Executive Director
1255 East Street, Suite 202
Redding, CA 96001

If to Contractor: _____
_____
_____
_____

9. Miscellaneous Provisions
   9.1. Terms used in this Contract, which are defined in Section 00 72 13, "General Conditions," shall have the meanings designated in those conditions.

10. Indemnification and Insurance

To the fullest extent permitted by law, Contractor shall defend, hold harmless, and indemnify SRTA, its elected officials, officers, employees, and agents against all claims, suits, actions, costs, expenses (including but not limited to reasonable attorney's fees of SRTA counsel and counsel retained by SRTA, expert fees, litigation costs, and investigation costs), damages, judgments, or decrees by reason of any person's or persons' injury, including death, or property (including property of SRTA) being damaged by the negligent acts, willful acts, or errors or omissions of the Contractor or any of Contractor's subcontractors, any person employed under Contractor, or under any subcontractor, or in any capacity during the progress of the work, except when the injury or loss is caused by the sole negligence or intentional wrongdoing of SRTA. Contractor shall also defend and indemnify SRTA for any adverse determination made by the Internal Revenue Service or the State Franchise Tax Board and/or any other taxing or regulatory agency and shall defend, indemnify and hold harmless SRTA with respect to Contractor's "independent contractor" status that would establish a liability on SRTA for failure to make social security deductions or contributions or income tax withholding payments, or any other legally mandated payment. The provisions of this paragraph are intended to be interpreted as broadly as permitted by applicable law. This provision shall survive the termination, expiration, or cancellation of this contract.

Throughout the term of this Contract, Contractor shall maintain all necessary insurance coverage described in Section 00 72 13, "General Conditions," Part 11, "Insurance."

11. Severability

If any portion of this agreement or application thereof to any person or circumstance is declared invalid by a court of competent jurisdiction or if it is found in contravention of any federal or state statute or regulation, the remaining provisions of this agreement, or the application thereof, shall not be invalidated thereby and shall remain in full force and effect

to the extent that the provisions of this agreement are severable.

IN WITNESS THEREOF, SRTA and Consultant have executed this agreement on the day and year of the last signature set forth below. By their signatures below, each signatory represents that he/she has the authority to execute this agreement and to bind the party on whose behalf his/her execution is made.

SHASTA REGIONAL TRANSPORTATION AGENCY

Date: _____

_____
Sean Tiedgen, AICP, Executive Director

[Insert Contractor Name Here]

Date: _____

By: _____
(Signature)

Print Name: _____

Title: _____

Contractor's License #: _____

Tax I.D.#: _____

Approved as to form:

JOHN KENNY
Counsel, Shasta Regional Transportation Agency

_____

NOTE: If the **Contractor is a corporation**, attach to this Contract a certified copy of the by-laws, resolutions, or excerpts of a meeting of the Board of Directors of the Corporation authorizing the person executing the Contract to do so for the Corporation.

END OF SECTION 00 52 13

PERFORMANCE BOND

SECTION 00 61 13.13

Bond No.: _____
Premium: _____

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the Shasta Regional Transportation Agency, ("Obligee") ("SRTA") and _____ _____ ("Principal") have entered into a contract whereby Principal agrees to furnish all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

SRTA HVAC and Parking Improvements ("Project" or "Contract"),

which Contract dated _____, 20___, and all of the Contract documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

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

WHEREAS, the State of California (hereinafter designated as "State") requires that it be named beneficiary under this performance bond;

NOW, THEREFORE, We, the Principal and _____ ("Surety") are held and firmly bound unto the Obligee and the State in the penal sum of _____ _____ dollars ($_____), lawful money of the Unites State for the payment of which sum well and truly be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

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

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

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

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the _____ day of _____, 20___.

By: _____
Principal

By: _____
Surety

By: _____
Attorney-in-fact

END OF SECTION 00 61 13.13

PAYMENT BOND

SECTION 00 61 13.16

Bond No.: _____

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as Principal, _____ _____, incorporated under the laws of the State of _____ and authorized to execute bonds and undertakings as sole surety, as Surety, are held and firmly bound unto any and all persons named in California Civil Code Section 9100 whose claim has not been paid by the contractor, company or corporation, in the aggregate total of _____ dollars ($_____), for the payment whereof, well and truly to be made, said Principal and Surety bind themselves, their heirs, administrators, successors, and assigns, jointly and severally, firmly by these presents.

The condition of the foregoing obligation is such that that above bounden Principal has entered into a contract, dated _____, with the Shasta Regional Transportation Agency to do the following work, to-wit: SRTA HVAC and Parking Improvements.

NOW, THEREFORE, if the above bounden Principal, contractor, person, company or corporation, or his or its subcontractor, fails to pay any claimant named in Section 9100 of the Civil Code of the State of California, or amounts due under the Unemployment Insurance Code, with respect to work or labor performed by any such claimant, that, the Surety on this bond will pay the same, in an amount not exceeding the aggregate sum specified in this bond, and also in case suit is brought upon this bond, a reasonable attorney's fee, which shall be awarded by the court to the prevailing party in said suit, said attorney's fee to be taxes as costs in said suit.

This bond shall inure to the benefit of any person named in Section 9100 of the Civil Code of the State of California so as to vie a right of action to them or their assignees in any suit brought upon this bond.

This bond is executed and filed to comply with the provisions of the act of Legislature of the State of California as designated in Civil Code Sections 9550-9566 inclusive and all amendments thereto.

Signed and sealed this _____ day of _____, _____.

By: _____

By: _____

ATTORNEY-IN-FACT

END OF SECTION 00 61 13.16

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

SECTION 00 61 23

Part 1 – GENERAL

Security Substitutions and Escrow for Moneys Withheld to Insure Contractor's Performance: Pursuant to Public Contract Code Section 22300, the Contractor may deposit in an escrow, equivalent securities for any moneys withheld to insure performance and have said moneys paid directly to Contractor, or, in the alternative, have SRTA deposit such moneys directly into an escrow. Upon the closing of any such escrow, Contractor shall pay to each subcontractor, not later than 20 days after receipt of the closing payment, the respective amount of interest earned, net of costs attributed to retention withheld from each subcontractor, on the amount of retention withheld to insure the performance of the Contractor. Any escrow established pursuant to this Part shall be with a state or federally chartered bank, shall be at the sole expense of the Contractor, and shall be established using an escrow Agreement in substantially the following form:

This Escrow Agreement is made and entered into by and between the Shasta Regional Transportation Agency ("SRTA"), _____ ("Contractor"), and _____, a state or federally chartered bank in California ("Escrow Agent").

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

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by SRTA pursuant to the construction Contract entered into between SRTA and Contractor for the SRTA HVAC and Parking Improvements in the amount of $_____, and dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the contractor, SRTA 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 SRTA within ten (10) days of the deposit. The market value of the securities at the time of the substitution, as valued by SRTA, shall be at least equal to the cumulative total cash amount then required to be withheld as retention under the terms of the contract between SRTA and Contractor. If SRTA determines that the securities are not adequate it will notify Contractor and Escrow Agent, and Contractor shall deposit additional security as further determined by SRTA. Securities shall be held in the name of SRTA and shall designate the Contractor as the beneficial owner.

2. Upon the deposit of adequate securities, SRTA shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments

pursuant to the Contract provisions.

3. When SRTA, at Contractor's written request, makes payment of retentions 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 Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the County pays the Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by the Escrow Agent in administering the Escrow Account and all expenses of SRTA. The Contractor, Escrow Agent and SRTA shall determine these expenses and payment terms.

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 SRTA.

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

7. SRTA shall have the right to draw upon the securities or any amount paid directly to Escrow Agent in the event of default by the Contractor. Upon seven (7) days written notice to the Escrow Agent from SRTA of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash, including any amounts paid directly to Escrow Agent, as instructed by SRTA. Escrow Agent shall not be concerned with the validity of any notice of default given by SRTA pursuant to this paragraph, and shall promptly comply with SRTA's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to conflicting demands and hereby waives any present or future right of interpleader.

8. Upon receipt of written notification from SRTA 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 payment of fees and charges.

9. Escrow Agent shall rely on the written notifications from SRTA and Contractor pursuant to Sections 5, 6, 7 and 8 of this Escrow Agreement and SRTA and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

10. Securities eligible for investment under this Escrow Agreement, as provided by Public Contract Code Sections 22300, shall be those listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and SRTA.

11. The venue of any litigation concerning the rights and obligations of the parties to this Agreement shall be the County of Shasta and the removal provisions of Code of Civil Procedure Section 394 shall not apply to any such litigation.

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

On behalf of SRTA:

Title: Executive Director
Name: Sean Tiedgen, AICP
Signature: _____
Address: 1255 East Street
Redding, CA 96001

On behalf of Contractor:

Title: _____
Name: _____
Signature: _____
Address: _____
_____

Escrow Agent:

Title: _____
Name: _____
Signature: _____
Address: _____
_____

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

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

On behalf of SRTA:

Title: Executive Director
Name: Sean Tiedgen, AICP
Signature: _____
Address: 1255 East Street
Redding, CA 96001

On behalf of Contractor:

Title: _____
Name: _____
Signature: _____
Address: _____
_____

Escrow Agent:

Title: _____
Name: _____
Signature: _____
Address: _____
_____

END OF SECTION 00 61 23

PROJECT CLOSEOUT AND WARRANTY

SECTION 00 65 36

1. DESCRIPTION

1.1. This section describes the requirements for Contract closeout, including provisions for final cleaning, record documents, operating and maintenance data, instruction of SRTA's personnel, guarantees/warranties, service and maintenance contracts, preparation for final inspection, and restoration of damaged work, remedial work, and extra materials.

2. FINAL CLEANING

2.1. Contractor shall comply with applicable regulatory requirements during the conduct of cleaning and disposal operations. Special cleaning requirements for specific elements of the Work are included in the applicable portions of the Contract Documents.

2.2. Contractor shall use cleaning materials that do not create hazards to health or property or cause damage to products or Work. Conduct cleaning and waste disposal operations in compliance with local laws and ordinances. Comply fully with federal, state, and local environmental and anti-pollution regulations.

2.2.1. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.

2.2.2. Burning or burying of debris, rubbish or other waste material on the premises is not permitted.

2.3. Contractor shall use cleaning materials and methods recommended by the manufacturers of the products to be cleaned.

2.4. Contractor shall schedule operations to prevent dust and other contaminants resulting from cleaning operations from adhering to wet or newly finished surfaces.

2.5. Contractor shall perform the following cleaning operations as applicable to the Work of this Contract:

2.5.1. Remove dust, dirt, grease, stains, fingerprints, labels, spilled and spattered, and other foreign materials from interior and exterior surfaces exposed to view.

2.5.2. Ventilation Systems:

1. Clean permanent filters and replace disposable filters of units operated during construction.

2. Clean ducts, blowers, and coils if units were operated without filters during construction.

3. Contractor shall vacuum and wipe insides of electrical panels and cabinetwork.

2.5.3. Contractor shall vacuum, mop or broom-clean interior spaces, as appropriate.

2.5.4. Contractor shall rake clean ground surfaces.

2.5.5. Contractor shall remove all construction materials, debris and equipment from exterior spaces, including all parking lots.

2.5.6. Contractor shall remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.

2.5.7. Contractor shall remove labels that are not permanent labels.

2.5.8. Contractor shall touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored, or that show evidence or repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name places.

2.5.9. Contractor shall wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.

3. RECORD DOCUMENTS

3.1. "As-Built" Drawings:

3.1.1. At time of acceptance of the Work and prior to final payment Contractor shall prepare a set of reproducible "As-Built" drawings in an electronic PDF format.

3.1.2. Contractor shall prepare and provide "As-Built" drawings prepared by a professional draftsman using typical drafting devices and recording information in ink unless otherwise acceptable to SRTA.

4. OPERATION TESTS

4.1. Contractor shall conduct operational tests and inspections as required to demonstrate that all systems have been completed, properly working and are in compliance with all requirements.

5. OPERATING, MAINTENANCE, AND PRODUCT DATA

5.1. General: Where maintenance manuals, record data, and operating instructions are required in the individual specification sections; and manufacturers' product data, specifications, installation instructions, and maintenance instructions for products incorporated in the Work; Contractor shall prepare such in three-ring, durable, plastic binders sized for 8-1/2" x 11" sheets and including at least the following:

5.1.1. Identification on, or readable through, the front cover with the project name and address and the general subject matter contained in the manual.

5.1.2. Complete instructions regarding operation and maintenance of the equipment included in the manual.

5.1.3. Complete nomenclature of replaceable parts, their part numbers, current cost, and name and address of nearest source of parts.

5.1.4. Copy of each guarantee/warranty and service contract issued for the equipment included in the manual.

5.1.5. Prepare and include additional data as required for the instruction of SRTA's personnel.

5.2. Extraneous Data: Where contents of manuals include manufacturers' catalog pages, Contractor shall clearly indicate the items included in this installation and delete, or otherwise clearly indicate, which is not applicable to this installation.

5.3. Shop Drawings: With each copy of the manual, Contractor shall furnish one set of applicable and reviewed Shop Drawings showing changes made during construction.

5.4. Number of Copies Required: Contractor shall transmit a minimum of two copies of all manuals, unless otherwise specified and agreed upon between Contractor and SRTA.

5.5. Submittal Schedule: Contractor shall comply with the following schedule for submittal of operating and maintenance manuals.

5.5.1. Before submittal of Request for Final Payment, Contractor shall submit two draft copies of each manual to SRTA for review, including a complete index or table of contents of each manual, for each installation that is nominally complete and requires submittal of operating and maintenance manuals.

5.5.2. SRTA will return one copy of the draft with comments within fifteen days of receipt.

5.5.3. Contractor shall submit one copy of the manuals in final form at least fifteen days before Final Inspection. This copy will be returned within fifteen days after Final Inspection, with comments.

5.5.4. After Final Inspection the Contractor shall make corrections or modifications to comply with SRTA's comments. The Contractor shall submit the specified number of copies of each approved manual to SRTA within fifteen days of receipt of SRTA's comments.

6. INSTRUCTION OF SRTA'S PERSONNEL

6.1. Where specified in the individual specification sections, Contractor shall furnish qualified personnel for on-the-job instruction of SRTA's personnel.

7. GUARANTEES/WARRANTIES

7.1. General:

7.1.1. Manufacturers' warranties notwithstanding, Contractor shall warrant the entire Work against defects in materials and workmanship for 12 months from the date of acceptance.

7.1.2. Contractor shall guarantee/warrant or bond the Work as required in the individual specification Sections.

7.1.3. Warranties between the Contractor and manufacturers, and the Contractor and suppliers, shall not affect guarantees/ warranties between the Contractor and SRTA.

7.1.4. The Contractor will not be held responsible for defects due to misuse, negligence, willful damage, improper maintenance, or accident caused by persons other than its employees, subcontractors or agents, nor shall he be responsible for defective parts

whose replacement is necessitated by failure of SRTA personnel, subcontractors or agents to properly clean and service them, provided the Contractor has furnished complete maintenance instructions to SRTA.

7.1.5. Contractor shall compile specified guarantees/warranties and bonds.

7.1.6. Contractor shall co-execute, as required.

7.1.7. Contractor shall review guarantees/warranties and bonds to verify compliance with Contract Documents.

7.1.8. Contractor shall transmit to SRTA for review.

7.2. Form of Guarantee/Warranty:

7.2.1. Contractor shall submit the guarantees/warranties, typed on the Contractor's letterhead if for the entire Work, or on the Subcontractor's letterhead if for the Work of a specification Section.

7.2.2. Contractor shall provide guarantee/warranty verbiage in compliance with the standard guarantee/warranty form provided at the end of this section.

7.3. Submittal Requirements:

7.3.1. Time of Submittal:

1. For equipment or component parts of accepted equipment put into service for SRTA’s benefit during the progress of the Work, Contractor shall submit guarantees/warranties within 10 days after acceptance of the Work.
2. Otherwise, Contractor shall submit guarantees/warranties within 10 days after date of Substantial Completion, prior to request for Final Payment.
3. For items of Work where acceptance is delayed materially beyond the date of Substantial Completion, Contractor shall furnish updated submittal within 10 days after such delayed acceptance, listing the date of delayed acceptance as the start of the guarantee/warranty period.

7.3.2. Number of original signed copies required: Two each.

7.4. WARRANTY REQUIREMENTS

7.4.1. Related Damages and Losses: When correcting warranted work that has failed, Contractor shall remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

7.4.2. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, Contractor shall reinstate in length and scope of coverage the warranty by written endorsement. The reinstated warranty shall be equal to or greater than the original warranty with an equitable adjustment for depreciation.

7.4.3. Replacement Cost: Upon determination that work covered by a warranty has failed, Contractor shall replace or rebuild the Work to an acceptable condition

complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether SRTA has benefited from use of the Work through a portion of its anticipated useful service life.

7.4.4. SRTA's Recourse: Written warranties made to SRTA are in addition to implied warranties, and shall not limit the duties, obligations, right and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which SRTA can enforce such other duties, obligations, rights, or remedies. Acceptance of the work or the issuance of a notice of completion shall not be construed to be a waiver of any remedy at law or equity.

1. Rejection of Warranties: SRTA reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

7.4.5. SRTA reserves the right to refuse to accept portions of the Work where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

8. PREPARATION FOR FINAL INSPECTION

8.1. Contractor shall perform final cleaning as specified hereinbefore.

8.2. Contractor shall assemble guarantees/warranties, service and maintenance contracts, operating and maintenance instructions, and other items as specified, and transmit to SRTA.

8.3. Contractor shall submit final payment request to SRTA.

8.4. Contractor shall provide SRTA's project manager and project architect with a punch list of deficiencies. SRTA's project manager and project architect will review the constructed project and add deficiencies to the list. Contractor must complete the Punch List items to the satisfaction of SRTA.

9. RESTORATION OF DAMAGED WORK

9.1. Contractor shall restore or replace, as specified or determined by SRTA, material and finishes damaged from construction activities at no additional expense to SRTA.

9.2. Contractor's restoration shall be equal to the original work, and finishes shall match the appearance of existing adjacent work.

10. REMEDIAL WORK

10.1. Remedial work necessary owing to faulty workmanship or materials shall be at no additional expense to SRTA..

10.2. Contractor shall coordinate remedial work with SRTA and performed at such time and in such manner to cause minimal interruption and inconvenience to SRTA's operations.

11. EXTRA MATERIALS

11.1. Where required in the individual specification sections, Contractor shall furnish extra materials in the quantities and manners specified. Prior to submitting any materials submit a list of all extra material required in the specification sections. Indicate name, address and phone number of closest supplier.

11.2. Delivery and certification of such extra materials shall be a prerequisite to Substantial Completion. Deliver to SRTA for sign-off.

GUARANTEE/WARRANTY FORM FOLLOWS

GUARANTEE/WARRANTY

_____ (Contractor) hereby unconditionally guarantees that the _____ Work described in sections _____ _____ performed pursuant to the SRTA SHVAC and Parking Improvements, project contract number 2024-03, has been done in accordance with the requirements of the Contract Documents and further guarantees the Work of the contract to be and remain free of defects in workmanship and materials for a period of one year(s) from the date of recordation of a Notice of Completion, Notice of Cessation, or actual cessation of Work, whichever is longer. The Contractor hereby agrees to repair or replace any and all Work, together with any adjacent work which may have been damaged or displaced in so doing, that may prove to be defective in its workmanship or material within the guarantee period specified, without any expense whatsoever to the Shasta Regional Transportation Agency (SRTA); ordinary wear and tear, and unusual abuse and neglect only excepted. The Contractor has provided Contract bonds which will remain in full force and effect during the guarantee period.

The Contractor agrees that within ten (10) calendar days after being notified in writing by SRTA of any work not in accordance with the requirements of the Contract or any defects in the Work, Contractor will commence and prosecute with due diligence all work necessary to fulfill the terms of this guarantee, and to complete the Work within a reasonable period of time. In the event Contractor fails to so comply, Contractor does hereby authorize SRTA to proceed to have such work done at the Contractor's expense and he/she will pay the cost thereof upon demand. SRTA shall be entitled to all costs, including reasonable attorney fees, necessarily incurred upon the Contractor's refusal to pay the above costs.

Notwithstanding the foregoing paragraph, in the event of an emergency constituting an immediate hazard to the health or safety of the employees or property of SRTA, SRTA may undertake at the Contractor's expense without prior notice, all work necessary to correct such hazardous condition when it was proven to be defective in its workmanship or materials, and to charge the same to the Contractor as specified in the preceding paragraph.

The guarantee set forth herein is not intended by the parties, nor shall it be construed, as in any way limiting or reducing SRTA’s rights to enforce all terms of the Contract Documents referenced hereinabove or the time for enforcement thereof. This guarantee is in addition to, and not in lieu of, SRTA’s rights on all other guarantees and warranties required by the Contract Documents.

Subcontractor Signature	Address, License Number	Date
Countersigned By General Contractor	Address, License Number	Date

END OF SECTION 00 65 36

GENERAL CONDITIONS

SECTION 00 72 13

TABLE OF SUBSECTIONS

PART 1 – CONTRACT TERMS AND DEFINITIONS
PART 2 – CONTRACT DOCUMENTS
PART 3 – SHASTA REGIONAL TRANSPORTATION AGENCY (SRTA)
PART 4 – ARCHITECT
PART 5 – CONTRACTOR
PART 6 – SUBCONTRACTORS
PART 7 – WORK BY SRTA OR BY SEPARATE CONTRACTORS
PART 8 – MISCELLANEOUS PROVISIONS
PART 9 – TIME
PART 10 – PAYMENTS AND COMPLETION
PART 11 – PROTECTION OF PERSONS AND PROPERTY
PART 12 – INSURANCE
PART 13 – CHANGES IN THE WORK
PART 14 –INSPECTION, UNCOVERING AND CORRECTION OF WORK
PART 15 – TERMINATION OF THE CONTRACT
PART 16 – ADDITIONAL INSTRUCTIONS

PART 1 – CONTRACT TERMS AND DEFINITIONS

1.1. Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

1.1.1. **Adverse weather:** Shall be only weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, heart, or cold conditions in excess of the norm for the location and time of year it occurred, (2) unanticipated, and (3) at the Project.

1.1.2. **Architect:** The individual, partnership, corporation, or any combination thereof, named as "Architect" or "Project Architect", who will have the rights and authority assigned to the Architect in the Contract Documents. The term Architect means SRTA's Project Architect on this Project or the Architect's authorized representative.

1.1.3. **Bidder:** A contractor who intends to provide a bid to SRTA to perform the Work of this Contract.

1.1.4. **Change Order:** A Change Order is a written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment to the Contract Price or Contract Time.

1.1.5. **Contract:** The Contract consists exclusively of the documents evidencing the agreement of SRTA and Contractor, identified as the Contract Documents. The Contract may be amended or modified only by modification as defined in Part 1.1.3, "The Contract Documents," of these General Conditions. Nothing in the Contract Documents shall create any contractual relationship between SRTA and any Subcontractor or Sub-subcontractor.

1.1.6. **Contract Documents:** The Contract Documents consist of the following:

1.1.6.1. Section 00 52 13, "Contract between SRTA and the Contractor"

1.1.6.2. Other documents in the "Contract Book for the Shasta Regional Transportation Agency HVAC and Parking Improvements" (Contract No. 2024-03)

1.1.6.3. The "Tenant Improvements for the Shasta Regional Transportation Agency" drawings

1.1.6.4. All Addenda issued prior to and all Modifications issued after execution of the Contract.

1.1.6.5. All accepted forms including the Bid Form, Payment Bond, Performance Bond, Insurance Policy Amendments and Endorsements, and the Notice to Proceed.

1.1.7. **Contract Price:** The total monies payable to the Contractor as specified under the terms and conditions of the Contract Documents.

1.1.8. **Contract Time:** Unless otherwise provided, the Contract Time is the period of time

allotted in Section 00 31 13, "Construction Schedule and Liquidated Damages," for substantial completion of the Work.

1.1.9. **Contractor:** The Contractor is the person or entity identified as such in the Contract Documents. The term Contractor means the Contractor or the Contractor's authorized representative.

1.1.10. **Daily Job Report(s):** Daily Project reports prepared by the Contractor's employee(s) who are present on site, which shall include the information herein.

1.1.11. **Date of Commencement:** The date of commencement of the Work is the date established in the Notice to Proceed.

1.1.12. **Date of Substantial Completion:** The Date of Substantial Completion of the Work or designated portion thereof is the date certified by SRTA when construction is sufficiently complete, in accordance with the Contract Documents, so that SRTA or separate contractors can occupy or utilize the Work or a designated portion thereof for the use for which it is intended.

1.1.13. **Day(s):** Unless otherwise designated, the term "day(s)" means calendar day(s).

1.1.14. **Drawings or ("Plans"):** The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the work, generally including plans, elevations, details, sections, specifications, schedules, sequence of operations, and diagrams.

1.1.15. **Modifications:** A Modification consists of any one or more of the following:

1.1.15.1. A written amendment to the Contract signed by both parties;

1.1.15.2. A Change Order;

1.1.15.3. A written interpretation issued by SRTA

1.1.15.4. A written order for a minor change in the Work, issued by SRTA pursuant to Part 13.4, "Minor Changes in the Work," of these General Conditions.

1.1.1. **Product Data:** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.

1.1.2. **Samples:** Samples are physical examples that illustrate materials, equipment or workmanship, and establish standards by which the Work will be judged.

1.1.3. **Shop Drawings:** Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

1.1.16. **SRTA:** The term SRTA means the Shasta Regional Transportation Agency or SRTA's authorized representative for the Work as described in Section 00 73 13 "Supplementary Conditions," Part 3.1.1

1.1.17. **Subcontractor:** A Subcontractor is a person or entity that has a direct contract with the Contractor to perform any of the Work. The term Subcontractor means a Subcontractor or a Subcontractor's authorized representative. The term

Subcontractor does not include any separate contractor or any separate contractor's subcontractors.

1.1.18. **Sub-subcontractor:** A Sub-subcontractor is a person or entity that has a direct or indirect contract with a Subcontractor to perform any of the Work. The term Sub-subcontractor means a Sub-subcontractor or an authorized representative thereof.

1.1.19. **Work:** All labor, equipment, demolition, components, materials, appliances, supervision, coordination, permits (see Part 5.6.1 of these General Conditions) and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and completion of the Project.

PART 2 – CONTRACT DOCUMENTS

2.1. EXECUTION, CORRELATION AND INTENT

2.1.1. The Contract Documents shall be signed in not less than three (3) original copies by SRTA and the Contractor.

2.1.2. Execution of the Contract by the Contractor is a representation that the Contractor has visited the Work Site, reviewed relevant reports and otherwise become familiar with the local conditions under which the Work is to be performed, and has correlated personal observations with the requirements of the Contract Documents.

2.1.3. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable as being necessary to produce the intended results. Words and abbreviations that have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

2.1.4. Subject to Part 16.9, “Application of Highest Standards and Requirements,” of these General Conditions, in cases of discrepancy concerning dimension, quantity and location, the Drawings shall take precedence over the Specifications. Explanatory notes on the Drawings shall take precedence over conflicting drawn indications. Large-scale details shall take precedence over smaller scale details and figured dimensions shall take precedence over scaled measurement. Where figures are not shown, scale measurements shall be followed but shall in all cases be verified by measuring actual conditions of Work already in place. In cases of discrepancy concerning application of materials and non-technical requirements over materials, the specifications shall take precedence over Drawings. In the case of discrepancy between the General Conditions and the General Requirements, the General Requirements shall take precedence.

2.1.5. If the Contractor observes any errors, discrepancies or omissions in the Contract Documents, Contractor shall promptly notify SRTA requesting clarification. If the Contractor proceeds with work affected by such errors, discrepancies or omissions,

without having received such clarification, Contractor does so at Contractor's own risk. Any adjustments involving such circumstances made by the Contractor, prior to approval by SRTA, shall be at the Contractor's risk and the settlement of any complications or disputes arising shall be at the Contractor's sole expense and Contractor shall indemnify, hold harmless and defend SRTA, and its officers and employees, from any liability or loss with respect to said adjustments.

2.1.6. All work and material shall be the best of the respective kinds specified or indicated. Should any workmanship or materials be required which are not directly or indirectly called for in the Contract Documents but which are necessary for proper fulfillment of the obvious intent thereof, said workmanship or materials shall be the same for similar parts that are detailed, indicated, or specified, and the Contractor agrees same to be implied and has provided for it in Contractor's tender as if it were particularly described or delineated.

2.2. OWNERSHIP AND USE OF DOCUMENTS

2.2.1. All drawings, Specifications and copies thereof furnished to Contractor shall remain the property of SRTA. With the exception of one contract set for each party to the Contract, such documents are to be returned by Contractor on request at the completion of the Work.

PART 3 – SHASTA REGIONAL TRANSPORTATION AGENCY (SRTA)

3.1. INFORMATION AND SERVICES REQUIRED OF SRTA

3.1.1. Except as provided in Part 5.7.1 of these General Conditions, SRTA shall secure and pay for necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

3.1.2. Information or services under SRTA's control shall be furnished by SRTA to the Contractor with reasonable promptness to avoid delay in the orderly progress of the Work.

3.1.3. SRTA shall forward all instructions to the Contractor.

3.1.4. The foregoing are in addition to other duties and responsibilities of SRTA enumerated herein and especially those in respect to Work By SRTA or By Separate Contractors, Payments and Completion, and Insurance in Parts 7, "Work by SRTA or by Separate Contractors," 10, "Payments and Completion," and 12, "Insurance," of these General Conditions, respectively.

3.2. SRTA'S RIGHT TO STOP THE WORK

3.2.1. If the Contractor fails to correct defective Work as required by Part 14.2, "Correction of Work," of these General Conditions, or persistently fails to carry out the Work in accordance with the Contract Documents, SRTA, by a written order signed personally or by an agent specifically so empowered by SRTA 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 SRTA to stop the Work

shall not give rise to any duty on the part of SRTA to exercise this right for the benefit of Contractor or any other person or entity, except to the extent required by Part 7.1.3 of these General Conditions.

3.3. SRTA RIGHT TO CARRY OUT THE WORK

3.3.1. If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and within three (3) days, fails after written notice from SRTA to correct such default or neglect with diligence and promptness, SRTA may, after an additional written notice and without prejudice to any other remedy SRTA may have, make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the additional services of a Project Manager or other Professionals made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to SRTA, or SRTA may make claim upon performance or warranty bonds.

PART 4 – ARCHITECT

4.1. ROLE AND AUTHORITY

4.1.1. The Architect shall represent SRTA during the Project and will observe the progress and quality of the Work for the Project on behalf of SRTA. The Architect shall have the authority to act on behalf of SRTA to the extent expressly provided in the Contract Documents and to the extent determined by SRTA. The Architect shall have authority to reject materials, workmanship, and/or the Work whenever a rejection may be necessary, in Architect's reasonable opinion, to ensure proper execution of the Contract.

4.2. INTERPRETATIONS

4.2.1. The Architect shall, with SRTA and on behalf of SRTA, determine the amount, quality, acceptability and fitness of all portions of the Work, and interpret the Specifications, Drawings, and shall, with SRTA, interpret all other Contract Documents.

4.3. LAWS

4.3.1. The Architect shall have authority and responsibility established by law, including Title 24 of the California Code of Regulations.

4.4. COMMUNICATIONS

4.4.1. Contractor shall provide SRTA with a copy of all written communication between Contractor and Architect at the same time that communication is made to the Architect, including all RFIs, correspondence, submittals, claims, and proposed change orders.

PART 5 – CONTRACTOR

5.1. REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS

5.1.1. The Contractor shall carefully study and compare the Contract Documents and shall immediately report to SRTA any error, inconsistency or omission that may be discovered. The Contractor shall perform no portion of the Work at any time unless authorized by the Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

5.1.2. SRTA does not assume any responsibility for an understanding or representation made by any of its agents or representation prior to the execution of the Contract unless (1) such understanding or representation is expressly stated in the Contract and (2) the Contract expressly provides that responsibility therefore is assumed by SRTA.

5.1.3. Failure by the Contractor to become acquainted with all available information will not relieve Contractor from responsibility for estimating properly the difficulty or cost of successfully performing the Work.

5.1.4. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to SRTA at once.

5.1.5. Before submitting any Request for Information (RFI), or other Contractor-initiated request for information, the Contractor shall determine that the information requested is not clearly provided for in the Contract Documents. RFI's shall be submitted to SRTA or SRTA's authorized representative only from the Contractor, and not from any subcontractor, supplier or other vendor. The RFI process is for information and clarification only and may not be utilized to obtain approval for changes in the work.

5.2. SUPERVISION AND CONSTRUCTION PROCEDURES

5.2.1. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, procedures, or safety procedures at the Work Site; and shall coordinate all portions of the Work under the Contract.

5.2.2. The Contractor shall designate in writing, before the start of the Work, an authorized Representative who shall have the authority to represent and act for the Contractor.

5.2.3. The Authorized Representative shall be present at the site of the Work at all times while work is actually in progress on the Contract or arrangements shall be made, acceptable to SRTA, to allow both workers at the site or SRTA to quickly contact the Authorized Representative for any questions, problems or work that may be required. When work is not in progress and during periods when work is suspended, arrangements acceptable to SRTA to allow SRTA to quickly contact the Authorized Representative shall be made for any emergency work that may be required.

5.2.4. Whenever the Contractor or the Contractor's Authorized Representative is not present on any particular part of the Work when it may be desired to give direction, orders will be given by SRTA, which shall be received and obeyed by the superintendent or foreman who may have charge of the particular work in reference to which the orders are given.

5.2.5. The Contractor shall be responsible to SRTA for the acts and omissions of the Contractor's agents and employees, subcontractors and their agents and employees, and any other persons performing any of the Work under a contract with the Contractor.

5.2.6. The Contractor shall not be relieved from the Contractor's obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of SRTA in the administration of the Contract, or by inspections, tests or approvals required or performed under Part 8.7, "Tests and Inspection," of these General Conditions by persons other than the Contractor.

5.3. LABOR AND MATERIALS

5.3.1. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

5.3.2. The Contractor shall at all time enforce strict discipline and good order among the Contractor's employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned them.

5.3.3. The Contractor shall deliver to SRTA, prior to final acceptance of the Work as a whole, signed certificates from suppliers of materials and manufactured items stating that such items conform to the Contract Documents.

5.3.4. The Contractor, immediately upon issuance of the Notice to Proceed (or where shop drawings, samples, etc., are required, immediately upon receipt of approval thereof) shall place orders for all materials, work fabrication, and/or equipment to be employed by Contractor in the Work. The Contractor shall keep all materials, work fabrications and/or equipment specified and shall advise SRTA promptly, in writing, of all orders placed and of such materials, work fabrications and/or equipment which may not be available in a timely manner for the purposes of the Contract.

5.3.5. Workmen whose work is unsatisfactory to SRTA, or are considered by SRTA to be careless, incompetent, unskilled or otherwise unfit shall be dismissed from work under the Contract upon written request to the Contractor from SRTA.

5.4. WARRANTY

5.4.1. The Contractor warrants to SRTA that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all work will be of good quality, free from faults and defects and in conformance with the Contract

Documents. All work not conforming to these requirements, including substitutions not properly approved and authorized, may at SRTA's sole discretion be considered defective. If required by SRTA, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of Part 14.2, "Corrective Work," of these General Conditions.

5.5. TAXES

5.5.1. The Contractor shall pay all sales, consumer, use and other similar taxes for the Work or portions thereof provided by the Contractor which are legally enacted at the time bids are opened, whether or not yet effective.

5.6. PERMITS, FEES AND NOTICES

5.6.1. Unless otherwise provided in the Contract Documents, SRTA shall secure and pay for any necessary building permit, permanent utility connection fee, and right-of-way encroachment permit. The Contractor shall secure and pay for temporary construction utilities, and all other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required at the time bids are opened.

5.6.2. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work.

5.6.3. It is not the responsibility of the Contractor to make certain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. However, if the Contractor observes that any of the Contract Documents are at variance therewith in any respect, the Contractor shall promptly notify SRTA in writing, and any necessary changes shall be accomplished by appropriate modification.

5.6.4. If the Contractor performs any work knowing it to be contrary to any laws, ordinances, rules and regulations, without notice to SRTA, the Contractor shall assume full responsibility therefore and shall bear all costs attributable thereto.

5.6.5. Any reference in the Specifications text to codes, standard specifications or manufacturer's instructions shall mean the latest printed edition of each in effect at the Contract date.

5.7. ALLOWANCES

5.7.1. The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by these allowances shall be supplied for such amounts and by such persons as SRTA may direct, but the Contractor will not be required to employ persons against whom the Contractor makes a reasonable objection.

5.7.2. Unless otherwise provided in the Contract Documents:

5.7.2.1. This allowance shall cover the cost to the Contractor, less any applicable

trade discount, of the materials and equipment required by the allowance, delivered at the site, and all applicable taxes;

5.7.2.2. The Contractor's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Sum and not in the allowance;

5.7.2.3. Whenever the cost is more or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order, the amount of which will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses.

5.8. RECORDS, DOCUMENTS AND SAMPLES

5.8.1. The Contractor shall maintain all records of required City, County or State inspections and shall promptly notify SRTA of the results of any inspection. Copies of all such records shall be provided to SRTA upon request.

5.8.2. The Contractor shall secure and maintain required certificates of inspection, testing or approval and shall promptly deliver them to SRTA.

5.8.3. The Contractor shall maintain at the Work Site, on a current basis, one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be available to SRTA, and shall be delivered to SRTA upon completion of the Work. The Contractor shall advise SRTA on a current basis of all changes in the Work made during construction.

5.8.4. Prior to approval of the monthly payment application, Contractor shall review above-referenced documents with SRTA to assure compliance. Approval of payment application is contingent upon above referenced records being current.

5.9. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

5.9.1. The Contractor shall prepare, review, approve and submit to SRTA, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of SRTA or any separate contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents.

5.9.2. By preparing, approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that the Contractor has determined and verified all materials, field measurements and field construction criteria related thereto and has checked and coordinated the information contained within such submittals with the requirements of the Work and the Contract Documents.

5.9.3. The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by SRTA’s review of Shop Drawings, Product Data or Samples, unless the Contractor has specifically informed SRTA in writing of such deviation at the time of submission and SRTA has given written approval to the specific deviation. The Contractor shall not be relieved from

responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by SRTA's approval of them.

5.9.4. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, SRTA shall be entitled to rely upon the accuracy and completeness of such calculations and certifications. The cost of such certifications shall be borne by the Contractor. SRTA may elect to have an independent certification performed at Contractor's own expense. SRTA shall have final approving authority for performance-based items.

5.9.5. The Contractor shall direct specific attention, in writing or on resubmitted Shop drawings, Product Data, or Samples, to revisions other than those requested by SRTA on previous submittals.

5.9.6. No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been reviewed by SRTA as provided in Section 01 33 00, "Submittal Procedures." All such portions of the Work shall be in accordance with approved submittals.

5.9.7. Submission of Shop Drawings and Samples to the County is required for only those items specifically mentioned in the Specification Sections. If Contractor submits Shop Drawings for items other than the above, the County will not be obligated to distribute or review them. Contractor shall be responsible for the procuring of Shop Drawings for Contractor's own use as Contractor may require for the progress of the Work.

5.9.8. The term "Shop Drawings," as used herein also includes but is not limited to fabrication, erection, layout and setting drawings, manufacturer's standard drawings, descriptive literature, catalogs, brochures, performance and test data, wiring and control diagrams, all other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and the positions and layout of each conform to the Contract requirements. As used herein the term "manufactured" applies to standard units usually mass-produced and "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop Drawings shall establish the actual detail of all manufactured or fabricated items; indicate proper relation to adjoining work; amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure; and incorporate minor changes of design or construction to suit actual conditions.

5.9.9. Drawings: Following the Contractor's review and approval, Contractor shall submit to SRTA a minimum of three (3) prints of each drawing for approval. SRTA will check the drawings and affix a stamp to the drawings, indicating the status of acceptance, and will return same to the Contractor, each retaining prints for their records. Comments, if any, will be noted directly on the drawings. The Contractor shall then print and distribute the appropriate number of copies to the Contractor's job personnel as required. If a drawing is stamped "Rejected", the Contractor shall correct and resubmit as outlined above. When stamped "Implement Exception

Noted", or similar instructions, the Contractor shall correct and resubmit for record only, two prints of each drawing.

5.9.10. Samples: Following the Contractor's review and approval, Contractor shall submit to SRTA, two samples of all materials in quantities and sizes as specified herein. Submittals shall be given to SRTA at a time determined by the Contractor, which allows for any necessary resubmittal and which will not cause any delay in the Work. If a sample is rejected, one sample noted so will be returned to the Contractor. If a sample is marked "Make changes as noted and continue with Work," one sample so noted will be returned. Corrected samples shall be resubmitted for approval as per the original submittal.

5.9.11. Brochures: Following the Contractor's review and approval, Contractor shall submit to SRTA, four (4) copies of all manufacturer's catalogs or brochures as required. If a brochure is stamped "No Exception Taken", two (2) copies will be returned to the Contractor. If stamped "Rejected ", one marked copy and two (2) unmarked copies will be returned. Corrected copies shall be resubmitted to SRTA for approval as per the original submittal.

5.9.12. Manufacturer's Instructions: Where any item or work is required by the Specifications to be furnished, installed or performed in accordance with a specified product manufacturer's instructions, Contractor shall procure and distribute the necessary copies of such instructions to the Contractor’s or Subcontractor’s personnel performing this Work and to SRTA.

5.9.13. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, and SRTA has no information creating doubt as to the reliability of such certification, SRTA shall be entitled to rely upon the accuracy and completeness of such calculations and certifications. SRTA shall have final approving authority for performance-based items.

5.10. USE OF SITE

5.10.1. The Contractor shall confine operations at the Work Site to areas permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the site with any materials or equipment. The Contractor shall be liable for any and all damage caused by Contractor to SRTA’s premises. The Contractor shall hold and save SRTA, its agents, and representatives, free and harmless and defend them from liability of any nature or kind arising from any use, trespass, or damage occasioned by Contractor’s operations at the Work Site or by third persons.

5.10.2. The Contractor shall coordinate all of the Contractor's operations with, and secure approval from, SRTA before using any portion of the Work.

5.11. CUTTING AND PATCHING OF WORK

5.11.1. The Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work or to make its several parts fit together properly.

5.11.2. The Contractor shall not damage or endanger any portion of the Work or the work of SRTA or any separate contractors by cutting, patching or otherwise altering any

work, or by excavation. The Contractor shall not cut or otherwise alter the work of SRTA or any separate contractor except with the written consent of SRTA and of such separate contractor. The Contractor shall not unreasonably withhold from SRTA or any separate contractor consent to cutting or otherwise altering the Work.

5.11.3. In all cases Contractor shall exercise extreme care in cutting operations, and perform such operations under adequate supervision by competent mechanics skilled in the applicable trade. Openings shall be neatly cut and shall be kept as small as possible to avoid unnecessary damage. Careless and/or avoidable cutting damage, etc., will not be tolerated, and the Contractor will be held responsible for such avoidable or willful damage.

5.11.4. All replacing, patching and repairing of all materials and surfaces cut or damaged in the execution of the Work shall be performed by experienced mechanics of the several trades involved. Such replacing, repairing or patching shall be done with the applicable materials, in such a manner that all surfaces so replaced, repaired, or patched will, upon completion of the Work, match the surrounding similar surfaces.

5.12. CLEANING UP

5.12.1. The Contractor shall at all time keep the Work Site and its vicinity free from accumulation of waste materials or rubbish caused by the Contractor's operations. At the completion of the Work, the Contractor shall remove all of the Contractor's waste materials and rubbish from and about the Work Site as well as all the Contractor's tools, construction equipment, machinery and surplus materials. If the Contractor fails to clean up at the completion of the Work, SRTA may do so as provided in Part 3.3, “SRTA’s Right to Carry out the Work,” of these General Conditions and the cost thereof shall be paid by the Contractor.

5.13. ROYALTIES AND PATENTS

5.13.1. The Contractor shall pay all royalties and license fees, shall defend all suits or claims for infringement of any patent rights and shall defend and save SRTA harmless from loss on account thereof. If the Contractor has reason to believe that the design, process or product selected is an infringement of a patent, the Contractor shall be responsible for such loss unless such information is promptly given to SRTA.

5.14. INDEMNIFICATION

5.14.1. The Contractor’s attention is directed to Part 1.8 of Section 00 52 13, “Contract between SRTA and Contractor.”

5.14.2. In any and all claims against SRTA and/or SRTA’s consultants, or any of their agents or employees by any employee 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, the indemnification obligation under this Part 6.14 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

5.14.3. The obligations of the Contractor under this Part 6.14 shall not extend to the giving of or the failure to give directions or instructions by SRTA, its agents or employees, provided such giving or failure to give directions is the primary cause of the injury or damage.

5.15. NONDISCRIMINATION CLAUSE

5.15.1. During the performance of the Work, Contractor and its Subcontractors shall not deny benefits to any person on the basis of sex, race, color, creed, ancestry, religion, national origin, physical or mental disability, sexual orientation, medical condition (cancer, HIV and AIDS), age (over 40), marital status, or other protected status, nor shall they unlawfully discriminate, harass or allow harassment, against any employee or applicant for employment because of sex, race, color, creed, ancestry, religion, national origin, physical or mental disability, sexual orientation, medical condition (cancer, HIV and AIDS), age (over 40), marital status, or other protected status, nor deny family care leave and or pregnancy disability leave.

5.15.2. Contractor and Contractor's Subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Contractor and Contractor's Subcontractors shall comply with the provisions of the Americans with Disability Act (ADA) of 1990 (42 U.S.C. section 12101, et seq.), California Fair Employment and Housing Act (Government Code, Section 12990 et seq.) and the applicable regulations promulgated thereunder (CCR, Title 2, Section 7285.0 et seq.).

5.15.3. The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulation are incorporated into this Contract by reference and made a part hereof as if set forth in full. Contractor and Contractor's Subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

5.15.4. Contractor shall comply with all applicable nondiscrimination laws and regulations.

5.15.5. The Contractor and Contractor's Subcontractors shall include the nondiscrimination and compliance provisions of this Part 6.15 in all contracts and subcontracts to perform work under this Contract.

PART 6 – SUBCONTRACTORS

6.1. AWARDS OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

6.1.1. The Contractor shall only use the Subcontractors included in the Contractor's sealed bid unless first approved in writing by SRTA.

6.1.2. The Contractor shall not use any Subcontractor ineligible to perform work on a Public Works Project pursuant to Section 1777.1 or 1777.7 of the Labor Code.

6.2. SUBCONTRACTUAL RELATIONS

6.2.1. By an appropriate written contract, the Contractor shall require each Subcontractor, to the extent of the work to be performed by the Subcontractor, to

be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by the Contract Documents, assumes toward SRTA. Said contract shall preserve and protect the rights of SRTA under the Contract Documents with respect to the work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Documents, has against SRTA. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with their Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the agreement, copies of the Contract Documents to which the Subcontractor will be bound by this Part 6.2, and identify to the Subcontractor any terms and conditions of the proposed agreement which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of the Contract Documents available to their Sub-subcontractors. Nothing contained herein shall be deemed to create an agency relationship between SSRTA and any Subcontractor, Sub-subcontractor, or material supplier.

6.2.2. The submission or addition of Subcontractors shall be permitted only as authorized by Public Contract Code Section 4100, et. seq. The Subcontractors employed by the Contractor shall be appropriately licensed in conformity with the laws of the State of California.

6.2.3. Nothing contained in this Contract shall create any contractual relationship between any Subcontractor, Sub-subcontractor, and SRTA.

6.2.4. Jurisdictional disputes between Subcontractors or between Contractor and Subcontractor shall not be mediated or decided by SRTA. The Contractor shall be responsible for the resolution of all such disputes based upon Contractor's contractual relationship with Contractor's Subcontractors.

PART 7 – WORK BY SRTA OR BY SEPARATE CONTRACTORS

7.1. SRTA'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

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

7.1.2. When separate contracts are awarded for different portions of the Work or other work, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate contract.

7.1.3. SRTA shall provide for coordination of the activities of SRTA's own forces and of each separate contractor with the Work of the Contractor, and the Contractor shall

cooperate with them. The Contractor shall participate with other separate contractors and SRTA in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and SRTA until subsequently revised.

7.1.4. Unless otherwise provided in the Contract Documents, when SRTA performs construction or operations related to the Work with SRTA's own forces, SRTA shall be deemed to have the same rights which apply to the Contractor under the conditions of the Contract including, without excluding others, those stated in Part 5, "Contractor," this Part 7 and Parts 11, "Protection of Persons and Property," 12, "Insurance," and 14, "Uncovering and Correction of Work," of these General Conditions.

7.2. MUTUAL RESPONSIBILITY

7.2.1. The Contractor shall afford SRTA and separate contractor's reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

7.2.2. When any part of the Contractor's work depends on proper execution or results upon the work of SRTA or any separate contractor, the Contractor shall, prior to proceeding with the work, promptly report to SRTA any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor to report shall constitute an acceptance of SRTA's or separate contractor's work as fit and proper, except as to defects that may subsequently become apparent in such work by others.

7.2.3. If, following the reporting of any discrepancy or defect as required in Part 7.2.2 above, the Contractor suffers damage due to disruption or delay caused by the separate contractor, without fault by SRTA, the Contractor's remedy shall be limited to seeking recovery from the separate contractor.

7.2.4. Any costs caused by defective or ill-timed work by the Contractor shall be borne by the Contractor.

7.2.5. Should the Contractor cause damage to the Work, Work Site, or property of SRTA, or to other work or property on the Work Site, the Contractor shall promptly remedy such damage as provided in Part 11.2.5 of these General Conditions.

7.2.6. Should the Contractor wrongfully delay or cause damage to the work or property of any separate contractor, the Contractor shall, upon due notice, promptly attempt to settle with such other contractor by agreement, or otherwise to resolve the matter. If such separate contractor sues SRTA on account of any delay or damage alleged to have been caused by the Contractor, SRTA shall notify the Contractor who shall defend such proceedings, and if any judgment or award against SRTA arises, the Contractor shall within 30 days pay or satisfy it and shall reimburse SRTA for all costs which SRTA has incurred.

PART 8 – MISCELLANEOUS PROVISIONS

8.1. GOVERNING LAW

8.1.1. This contract shall be governed by the laws of the state of California.

8.2. SUCCESSORS AND ASSIGNS

8.2.1. SRTA 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 obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other.

8.3. WRITTEN NOTICE

8.3.1. Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the person and address shown in this Contract.

8.4. CLAIMS AND DISPUTES RESOLUTION

8.4.1. A Claim is a demand or assertion by Contractor seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money or an extension of time, arising out of or relating to the Contract, or a request for equitable adjustment or Change Order which cannot be resolved pursuant to the provisions of Part 13, “Changes in the Work,” of these General Conditions. Any Claim shall be reduced to writing and filed with SRTA, within 20 calendar days after the Contractor has notice of the condition giving rise to the Claim. Contractor hereby waives all claims not made within the aforesaid time limit. Such 20-day notice of an asserted Claim is in addition to the requirement for prompt notice required per Part 13.3, “Request for Equitable Adjustment,” of these General Conditions.

8.4.2. The Contractor shall not claim or recover any overhead, cost administrative or otherwise; particularly “Home Office” expenses, “Extended site overhead,” or any other overhead cost on the basis of any “Home Office” damages formula, “Eichleay” formula, “Total Cost” recovery formula or any other such formula.

8.4.3. Contractor shall make any Claims in writing within the time set forth above, for any unreasonable delay or hindrance caused SRTA, and specifying the cause thereof as required in Part 8.4.4, “Requirements for Filing a Claim.”

8.4.4. <u>REQUIREMENTS FOR FILING A CLAIM:</u> Claims shall be submitted to SRTA within the time specified in Part 8.4.1 above, but in no event later than the date of final payment. The Claim shall be in writing and shall be for a sum certain. The Claim shall include a statement of the reasons for the asserted entitlement, and include the documents necessary to substantiate the Claim. Such documents may include but are not limited to payroll records, purchase orders, quotations, invoices, estimates, subcontracts, daily logs, supplier contracts, subcontract billings, bid takeoffs,

equipment rental invoices, ledgers, journals, daily reports, job diaries, and any documentation related to the requirements of Part 13, "Changes in the Work," of these General Conditions. In the case of a continuing delay, only one Claim is necessary. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the critical activities on the construction schedule.

8.4.5. FALSE CLAIMS: California Penal Code Section 72, provides that any person who presents for payment with intent to defraud SRTA, its personnel or their representatives, any false or fraudulent claim, bill, account, voucher, or writing, is punishable by fines not exceeding ten thousand dollars ($10,000.00) and/or imprisonment in the state prison. Government Code Sections 12650, et seq., pertains to civil penalties that may be recovered from persons (including corporations, etc.) for presenting a false claim for payment or approval, presents a false record or statement to get a false claim paid or approved, or other acts, to any officer or employee of any political subdivision of the State of California. Any person or corporation violating the provisions of Government Code Sections 12650 et seq. shall be liable for three times the amount of the damages of the political subdivision, plus a civil penalty, plus costs. SRTA is obligated to report suspected false claims to the appropriate law enforcement agency.

8.4.6. All Claims by Contractor shall include the following certification, properly completed and executed by Contractor or any officer of Contractor:

I, _____, BEING THE _____
(MUST BE AN OFFICER) OF _____
(CONTRACTOR), 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 TRUTHFUL AND ACCURATE; THAT THE AMOUNT REQUESTED ACCURATELY REFLECTS THE CONTRACT ADJUSTMENT FOR WHICH THE OWNER 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 CLAIM MAY LEAD TO FINES, IMPRISONMENT AND/OR OTHER SEVERE LEGAL CONSEQUENCES.

8.4.7. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by the Contract Documents for the filing of Claims. For any Claim subject to this Part 8.4, the following requirements apply:

.1 For Claims of less than fifty thousand dollars ($50,000), SRTA's Project Manager, shall review the facts pertinent to the Claim, obtain additional information deemed necessary for a decision (if any), and secure

assistance from legal and other advisors, and render a written decision on the Claim within 45 days of receipt of the Claim. If additional information is thereafter required, it shall be requested and provided, pursuant to this subdivision, upon mutual agreement of SRTA and Contractor. SRTA's Project Manager's written response to the Claim, as further documented, shall be submitted to the Contractor within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

.2 For claims of over fifty thousand dollars ($50,000), SRTA's Project Manager shall review the facts pertinent to the Claim, obtain additional information deemed necessary for a decision (if any), and secure assistance from legal and other advisors, and render a written decision on the Claim within 60 days of receipt of the Claim, or may request, in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses or claims SRTA may have against the claimant. If additional information is thereafter required, it shall be requested and provided. SRTA's Project Manager's written response to the Claim, as further documented, shall be submitted to the Contractor within 30 days after receipt of the further documents, or a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

.3 If the Contractor disputes the written response of SRTA, or fails to respond within the time prescribed, the Contractor may so notify the Executive Director, in writing, either within 15 days of receipt of the SRTA's Project Manager's response or within 15 days of SRTA's Project Manager's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, SRTA's Project Manager shall schedule a meeting and conference within 30 days for settlement of the dispute.

.4 If following the meet and confer conference the Claim or any portion remains in dispute, the Contractor may file a Claim pursuant to 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. For purposes of those provisions, the running of the period of time within which a Claim must be filed shall be tolled from the time the Contractor submits the Contractor's written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer conference.

Submission of a Claim, in conformance with all these requirements of this Contract, and rejection of all or part of said Claim SRTA, is a condition precedent to any action by Contractor against SRTA, including but not limited to, the filing of a lawsuit or making demand for arbitration, if arbitration is expressly provided for in this Contract.

8.4.8. CLAIMS AND DISPUTES EXEMPT FROM FILING REQUIREMENTS: The procedures and remedies provided in this Part 8.4 do not apply to:

.1 Any Claims by SRTA;

.2 Any Claim for or respecting personal injury or death or reimbursement or other compensation arising out of or resulting from liability for personal injury or death;

.3 Any Claim or dispute relating to stop payment requests or stop notices; and

.4 Any Claim related to the approval, refusal to approve, or substitution of Subcontractors, regardless of tier, and suppliers.

8.4.9. PAYMENT OF UNDISPUTED PORTION OF CLAIM: SRTA shall pay Contractor such portion of a Claim that is undisputed except as otherwise provided in this Contract.

8.4.10. CONTINUE WORK DURING DISPUTE: In the event of any dispute between the SRTA and the Contractor, the Contractor shall not stop work but will prosecute the work diligently to completion in the manner directed by SRTA, and the dispute shall be resolved by a court of law, or otherwise, after completion of the Work. However, Contractor must submit all disputes in accordance with the provisions of this Part 8.4.

8.4.11. SUIT IN SHASTA COUNTY ONLY: Any litigation arising out of this Contract shall be brought in Shasta County and Contractor hereby waives the removal provisions of California Code of Civil Procedure Section 394.

8.4.12. SRTA, or its authorized representative, shall have access, upon reasonable notice during normal business hours, to Contractor and Subcontractors' books, documents and accounting records, including but not limited to, bid worksheets, bids, Subcontractor bids, and proposals, estimates, cost accounting data, accounting records, payroll records, time sheets, cancelled checks, profit and loss statements, balance sheets, correspondence including but not limited to all correspondence between Contractor and Contractor's sureties and Subcontractors/vendors, Work files, scheduling information, and other records of the Contractor and all Subcontractors directly or indirectly pertinent to the Work, original as well as change and claimed extra work, to verify and evaluate the accuracy of cost and pricing data submitted with any change order, prospective or completed, or any claim for which additional compensation has been requested or notice of potential claim has been tendered.

Such access shall include the right to examine and audit such records, and make excerpts, transcriptions and photocopies at SRTA's expense.

The parties agree that in the event Contractor or any Subcontractor fails to comply with this Section, it would be difficult for SRTA to determine its actual damages; therefore, Contractor agrees to pay SRTA, as liquidated damages, the sum of $200.00, which Contractor agrees is reasonable under the circumstances, for each and every calendar day which Contractor or a Subcontractor fails or refuses to

provide SRTA and/or its authorized representatives, access to the materials specified in this Section.

Contractor agrees to impose upon its Subcontractors by appropriate subcontract provision, the obligations of this Part 8.4.

8.5. PERFORMANCE BOND, LABOR AND MATERIAL PAYMENT BOND AND WARRANTY BOND

8.5.1. The Contractor shall furnish a Performance Bond in the amount of 100% of the Contract Amount and a Payment Bond in the amount of 100% of the Contract Amount.

8.5.2. All bonds required, whether Bidder's bonds, Performance, Payment or other bonds, shall be issued by a surety company, United States of American Treasury listed and AM Best rated, acceptable to SRTA and admitted to do business in the State of California. The Bidder's Bond, Performance Bond and Payment Bond must be issued by the same admitted surety insurer. The payment, performance and warranty bonds required by this Part 8.5 will neither be accepted nor approved by SRTA unless the bonds are underwritten by an admitted surety and the requirements of California Code of Civil Procedure Section 995.630 are met. SRTA further reserves the right to satisfy itself as to the acceptability of the surety and the form of bond. Upon request of SRTA, the Contractor must submit the following documents:

.1 The original, or a certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument authorizing the person who executed the bond to do so.

.2 A certified copy of the certificate of authority of the insurer issued by the California Insurance Commissioner.

.3 A certificate from the county clerk that the certificate of authority has not been surrendered, revoked, canceled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.

.4 A financial statement of the assets and liabilities of the insurer to the end of the quarter calendar year prior to 30 days next preceding the date of the execution of the bond, in the form of an officers' certificate as defined in Corporations Code § 173.

8.6. RIGHTS AND REMEDIES

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

8.6.2. No action or failure to act by SRTA, or the Contractor shall constitute a waiver of any right or duty afforded any of them under this Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach, except as may be specifically agreed in writing.

8.7. TESTS AND INSPECTIONS

8.7.1. SRTA, and any public authority having jurisdiction over the Work or funds used for the Work, shall at all times have access for the purpose of observation to all parts of the Work and to all shops wherein the Work is in preparation. The Contractor shall cooperate and furnish such facilities and assistance as needed for SRTA and SRTA's agents and the public authority having jurisdiction over the Work or funds used for the Work.

8.7.2. Where the Contract Documents, instructions by SRTA, laws, ordinances, or any public authority having jurisdiction requires Work to be inspected, tested or approved before work proceeds, such work shall not proceed, nor shall it be covered up without inspection.

8.7.3. The Contractor shall give notice to SRTA at least two (2) days in advance of the readiness for any Contract compliance inspection by SRTA. The Contractor shall give notice as required by all other inspecting and testing agencies. In all cases, the Contractor shall schedule inspections so as not to delay the Work.

8.7.4. If SRTA determines that any work requires special inspection, testing or approval, which Part 8.7.1 above does not include, SRTA shall, instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as provided in Part 8.7.3 above. If such special inspection or testing reveals a failure of the Work to comply with the requirements of the Contract Documents, the Contractor shall bear all costs of the inspection, including compensation for SRTA's additional services, testing or inspections made necessary by such failure; otherwise SRTA shall bear such costs, and an appropriate Change Order shall be issued.

8.7.5. Required certificates of inspection, testing or approval shall be secured by the Contractor and the Contractor shall promptly deliver them to SRTA.

8.7.6. 7.7.6. If SRTA wishes to observe the inspections, tests or approvals required by the Contract Documents, SRTA shall do so promptly and, where practicable, at the source of supply.

PART 9 – TIME

9.1. PROGRESS AND COMPLETION

9.1.1. All time limits stated in the Contract Documents are of the essence of the Contract.

9.1.2. The Contractor shall begin the Work on the date of commencement as defined in Part 1, "Contract Terms and Definitions."

9.1.3. The Contractor shall carry the work forward expeditiously with adequate forces and shall achieve the Date of Substantial Completion of the Work within the Contract Time.

9.2. DELAYS AND EXTENSIONS OF TIME

9.2.1. The Contractor shall not be granted a Contract Time extension except on the issuance of a Change Order by SRTA, upon SRTA's finding that the delay in completion was unavoidable.

Delays in prosecution of parts or classes of the work that are not demonstrated to prevent or delay completion of the entire Work or specific milestones within the Contract Time are not "unavoidable delays" for purposes of this Part 9.2.

In all cases, the time authorized for extension of the Contract Time shall be no greater than the number of days directly attributable to the unavoidable delay which caused delay in the completion of the Work. Contractor shall be entitled, in the case of unavoidable delays, to an extension in the Contract Time, but not the Contract price. "Unavoidable delay" for this purpose shall be defined as follows:

.1 Unavailable Materials: That materials or articles called for in the Contract Documents are not obtainable within the time required for timely completion; provided that such materials or articles were listed by the Contractor in the construction schedule required within five (5) calendar days of receipt of a Notice to Proceed by Section 00 31 13, “Construction Schedule and Liquidated Damages;” that the Contractor demonstrates that the unavailability of the materials is in fact the cause for the delay, and could not have been procured by adjusting the Construction Schedule; and that the unavailability of such materials is due to circumstances beyond the Contractor's control. If good cause for delay is demonstrated pursuant to this Part 9.2.1, SRTA, at its sole discretion, may grant a time extension.

.2 Force Majeure: That a delay in construction resulted from circumstances beyond the control of the Contractor and which the Contractor could not have provided against by the exercise of reasonable care, prudence, foresight, and diligence. Unavoidable delays within the meaning of this Part 9.2.2, “Notice of Delays,” shall be those caused by the acts of God, war, insurrection, civil disorder, fire, floods, epidemic, or strikes.

.3 Unseasonable Weather: That the delay was caused by weather which is unsuitable for the work currently in progress, upon the finding that the weather conditions in fact caused the delay in completion of the Work and that such weather conditions were not, and could not in the exercise of reasonable diligence, have been foreseen by the Contractor. Seasonable weather that, in the exercise of reasonable foresight and diligence, should be expected in the area at the time of year in question is not cause for an extension of time.

.4 Time Extensions Due to Change Orders or Work Authorizations: When a delay in the Work is caused by the approval by SRTA of a Change Order or Work Authorization, pursuant to Part 13 of these General Conditions. The Contractor shall be entitled to a time extension Change Order only when the extra work is demonstrated by the Contractor to have caused a delay in the Work.

.5 SRTA-Caused Delays: That the Work is delayed by acts of SRTA, not authorized by the Contract Documents, which the Contractor demonstrates will or have caused an unavoidable delay as defined in Part 9.2.2, “Notice of Delays.” The Contractor shall be entitled to a Contract Time Change Order to offset the extra time incurred by the Contractor. The Contractor will not be entitled to adjustments in the contract price. Extra time shall be limited to that which is

directly identified as critical.

The Contractor specifically agrees that a time extension as provided herein is its sole remedy for SRTA-caused delays, and agrees to make no Claim or demand for additional damages, nor Claim an acceleration of the time for performance.

The Contractor shall not be entitled to any Contract Time extension or Contract Price adjustment for alleged SRTA delays if SRTA has acted within the time limits specified by the Contract Documents.

9.2.2. NOTICE OF DELAYS

.1 Whenever the Contractor foresees any delay in the prosecution of the Work, and in any event immediately upon the occurrence of any delay which the Contractor regards as grounds for an extension, the Contractor shall notify SRTA in writing of the potential delay or delay. Such notification shall specify with detail the cause asserted by the Contractor to constitute grounds for an extension. Failure of the Contractor to submit such a notice within ten (10) days after the initial occurrence of the event giving rise to the potential delay or delay shall constitute a waiver by the Contractor of any request for a time extension, and no extension shall be granted as a consequence of such potential delay or delay.

.2 With its request for time extension, the Contractor shall submit evidence to demonstrate that the delay in prosecution in the Work will result in an unavoidable delay in completion of the entire Work. Such evidence shall include a demonstration that the delayed portion of the Work will affect scheduling of the Work. The Contractor shall also submit a proposed revised construction schedule, which accounts for the delay in completion of the Work caused by the delay in progression of part of the Work, and demonstrates how the Work will be completed within the proposed revised Contract Time.

9.2.3. INVESTIGATION; PROCEDURE

.1 Upon receipt of a request for a Contract Time extension, SRTA shall conduct an investigation of the facts asserted by the Contractor to constitute grounds for an extension. The results of this investigation shall be reported by SRTA to the Contractor. The performance of this investigation by SRTA shall not be construed in any way as direction or recommendation to the Contractor regarding scheduling of the work. Scheduling the work is the sole responsibility of the Contractor.

.2 SRTA may, at its sole discretion, defer the recommendation to allow the accumulation of time extensions due to Work Authorizations into a periodic or final Change Order request.

.3 If SRTA disallows the request, there shall be no allowance made for the time during which the request was pending, and the Contractor shall remain obligated to complete the Work in the time specified.

.4 If SRTA approves a time extension Change Order, the new construction schedule submitted by the Contractor and approved by SRTA shall be deemed to amend the original construction schedule approved by SRTA; thereafter, the amended construction schedule shall have the same force and effect as the original construction schedule.

9.2.4. DISCRETIONARY TIME EXTENSION IN THE BEST INTEREST OF SRTA

.1 SRTA reserves the right to extend the Contract Time for completion of the Work if SRTA's Executive Director determines that such extension is in the best interest of SRTA.

.2 In the event that such discretionary extension is made at the request of the Contractor, SRTA shall have the right to charge to the Contractor all or any part, as SRTA may deem proper, of the actual cost to SRTA for engineering, inspection, supervision, contract administration, incidental and other overhead expenses that accrue during the period of such extension, and to deduct all or any portion of such amounts from the final payment for the Work.

.3 In the event such extension is ordered over the objection of the Contractor, the Contractor shall be entitled to a Change Order adjusting the price paid to reflect the actual costs incurred by the Contractor as a direct and proximate result of the delay, upon Contractor's written application, accompanied by such verification of costs as SRTA requires. Only additional direct costs incurred in completing the Work will be reimbursable by Change Order. Contractor will not be entitled to reimbursement of any home office overhead or similar costs or charges.

9.2.5. LIQUIDATED DAMAGES

.1 If the Work is not completed by Contractor in the time specified in the Contract Documents or within any period of extension authorized pursuant to this Subsection, the Contractor acknowledges and admits that SRTA will suffer damage, and that it is impracticable and infeasible to fix the amount of actual damages. Therefore, it is agreed by and between the Contractor and SRTA that the Contractor shall pay to SRTA as fixed and liquidated damages, and not as a penalty, the sum specified in Section 00 31 13, "Construction Schedule and Liquidated Damages," for each calendar day of delay until the Work is completed and accepted, and that both the Contractor and the Contractor's surety shall be liable for the total amount, and that SRTA may deduct said sums from any monies due or that may become due to the Contractor.

.2 This liquidated damages provision shall apply to all delays of any nature whatsoever, save and except only unavoidable delays approved by SRTA's Executive Director pursuant to this Part 9.3, or discretionary time extensions approved by the Executive Director pursuant to Part 9.3.4 above.

9.2.6. EXTENSION OF TIME NOT A WAIVER

.1 Any extension of the Contract Time granted SRTA pursuant to this Part 9 shall not constitute a waiver by SRTA, or a release of the Contractor, from

Contractor's obligations to perform this Contract within the Contract Time.

.2 Granting of a time extension due to one circumstance on one request shall not constitute a granting by SRTA of an extension of time for any other circumstance or the same circumstance occurring at some other time, and shall not be interpreted as a precedent for any other request for extension.

PART 10 – PAYMENTS AND COMPLETION

10.1. CONTRACT SUM

10.1.1. The Contract Sum is stated in the Contract and, including authorized adjustments thereto, is the total amount payable by SRTA to the Contractor for the performance of the Work under the Contract Documents.

10.2. SCHEDULE OF VALUES

10.2.1. Before the first Application for Payment, the Contractor shall submit to SRTA a Schedule of Values in accordance with the Construction Specifications Institute (CSI) Divisions, supported by such data to substantiate its accuracy as SRTA may require. This schedule, unless objected to by SRTA, shall be used only as a basis for the Contractor's Applications for Payment.

10.3. PROGRESS PAYMENTS

10.3.1. Progress Payments: The Contractor shall, on or before the first day of each month, make an estimate of the work performed during the preceding month and submit an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as SRTA may require, including appropriate updates to the Critical Path Method ("CPM") construction schedule, and reflecting retention, if any, as provided elsewhere in the Contract Documents. The Contractor will assemble the Application and forward it to SRTA for checking and approval. AIA Document G702, "Application and Certificate for Payment" and Document G703, "Continuation Sheet," or other substitute form supplied and required by SRTA shall be used. SRTA shall pay to the Contractor ninety-five percent (95%) of the value of said work in place, as checked and approved, within thirty (30) calendar days of SRTA's receipt of an undisputed and properly submitted application for payment. The balance of five (5%) percent of the estimate shall be retained by SRTA until the time of final acceptance of the Work. In lieu of the five percent (5%) retainage, the Contractor may substitute securities as provided for in Public Contract Code §22300. The Contractor may apply to reduce said rate of retainage as set forth in Part 5 of the Contract.

10.3.2. The Contractor warrants that title to all work, materials and equipment covered by an Application for Payment will pass to SRTA, or its assignee, either by incorporation in the construction or upon receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, stop notices, claims, security interest or encumbrances, hereinafter referred to in this Part 10 as "liens"; and that no work, materials or equipment covered by an Application for Payment will have

been acquired by the Contractor, or by any other person performing work at the Work or furnishing materials and equipment for the Work, subject to an agreement under which an interest or an encumbrance is retained by the seller or otherwise imposed by the Contractor or such other person. With each monthly application for payment, following agreement on percentages of completion, the Contractor shall submit a conditional lien release warranting that title to all work, labor, materials and equipment covered by the application is free and clear of all liens, claims, security interests or encumbrances for that months total amount approved. The Contractor shall also submit an unconditional lien release for the prior month's total amount approved.

10.3.3. Unless otherwise provided in the Contract Documents, payments may be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored at the Work Site and, if approved in advance by SRTA, payments may similarly be made for materials or equipment suitably stored at some other location agreed upon in writing. Payments for materials or equipment stored on or off the Work Site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to SRTA to establish SRTA's title to such materials or equipment or otherwise protect SRTA's interest, including applicable insurance and transportation to the Work Site for those materials and equipment stored off the Work Site.

10.3.4. Pursuant to Public Contract Code §7107, in the event of a dispute between SRTA and Contractor, SRTA may withhold from the final payment an amount not to exceed 150 percent of the disputed amount. Except as so provided, SRTA shall release the retention withheld within 60 days after the date of completion of the Work, as "completion" is defined in Public Contract Code § 7107. In the event that retention payments are not made within the time periods required by Public Contract Code §7107, SRTA may be subject to the interest provisions of Public Contract Code §7107.

10.3.5. SRTA shall make payment in the manner and within the time provided in the Contract Documents after verifying the accuracy of the Application for Payment.

10.3.6. The Contractor shall promptly pay each subcontractor upon receipt of payment from SRTA, out of the amount paid to the Contractor on account of such subcontractor's work, the amount to which subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such subcontractor's work. The Contractor shall, by an appropriate agreement with each subcontractor, require each subcontractor to make payments to their Sub-subcontractors in similar manner.

10.3.7. SRTA may, at its discretion, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor and the action taken by SRTA on account of work done by such Subcontractor.

10.3.8. SRTA shall have no obligation to pay or to see to the payment of any monies to any Subcontractor or Material Suppliers except as may otherwise be required by law.

10.3.9. Neither certification of a progress payment, delivery of a progress payment, nor partial or entire use or occupancy of the Work by SRTA, shall constitute an acceptance of any work not in accordance with the Contract Documents, nor shall it be deemed a waiver of SRTA of any remedy it may have in law or equity.

10.4. PAYMENTS WITHELD

10.4.1. SRTA may withhold payment in whole or in part to the extent necessary to reasonably protect SRTA, if it is unable to verify the accuracy of the Application for Payment. If SRTA is unable to verify the accuracy of the Application for Payment, SRTA will notify the Contractor in writing. If the Contractor and SRTA cannot agree on a revised amount, SRTA will promptly process payment for those amounts for which it is able to verify. SRTA may also decline to make payment to protect SRTA from loss because of subsequently discovered:

.1 Defective Work not remedied;

.2 Third party claims filed or reasonable evidence indicating probable filing of such claims, including claims by separate contractors;

.3 Failure of the Contractor to make payments properly to Subcontractors, or for labor, materials or equipment;

.4 Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

.5 Damage to SRTA or another contractor;

.6 Reasonable evidence that the Work will not be accomplished in compliance with the Contract Time;

.7 Persistent failure to carry out the Work in accordance with the Contract Documents; or

.8 Stop notice served upon SRTA.

10.4.2. When the grounds in Part 10.4.1 above are removed, payment shall be made for amounts withheld because of them.

10.5. SUBSTANTIAL COMPLETION

10.5.1. When the Contractor considers that the Work, or a designated portion of work, is substantially complete as defined in Part 9.1.3 of these General Conditions, SRTA shall prepare a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents

10.5.2. Upon substantial completion of the Work or designated portion thereof, and upon application by the Contractor and certification by SRTA, SRTA shall make payment, reflecting adjustments in retainage, if any, for such work completed or portion thereof as provided in the Contract Documents.

10.5.3. When SRTA, on the basis of inspections, determines that the Work or designated portion thereof is substantially complete, it will then prepare a Certificate of

Substantial Completion of the Work which shall establish the date of substantial completion of the Work and fix the time within which the Contractor shall complete any uncompleted items of the Certificate of Substantial Completion of the Work.

10.5.4. Warranties required by the Contract Documents shall commence on the date of the recording of the Notice of Completion of the Work.

10.6. FINAL COMPLETION AND FINAL PAYMENT

10.6.1. Following SRTA's issuance of the Certificate of Substantial Completion of the Work or designated portion thereof, and the Contractor's completion of the Work, the Contractor shall forward to SRTA a written notice that the Work is ready for final inspection and acceptance, and shall also forward to SRTA a final Application for Payment. Upon receipt, SRTA will promptly make such inspection. When SRTA finds the Work acceptable under the Contract Documents and the Contract fully performed, SRTA shall issue a Certificate for Payment that will approve the final payment due the Contractor. This approval will constitute a representation that, to the best of SRTA's knowledge, information and belief, and on the basis of observations and inspections, the Work has been completed in accordance with the Terms and Conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said Certificate, is due and payable.

10.6.2. Neither the final payment nor the remaining retainage shall become due until the Contractor submits to SRTA: (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which SRTA or SRTA's property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of surety, if any, to final payment, and (3) other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by SRTA. AIA Documents G706, Contractor's Affidavit of Payment of Debts and Claims, and G706-a, Contractor's Affidavit Release of Liens, shall be used. If any Subcontractor refuses to furnish a release or waiver required by SRTA, the Contractor may furnish a bond satisfactory to SRTA to indemnify SRTA against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to SRTA all monies that SRTA may be compelled to pay in discharging such lien.

10.6.3. If, after substantial completion of the Work, final completion is materially delayed through no fault of the Contractor or by the issuance of Change Orders affecting final completion, SRTA shall, upon application by the Contractor and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than the retainage stipulated in the Contract Documents, and if bonds have been furnished as provided in Part 8.5, "Performance Bond, Labor and Material Payment Bond and Warranty Bond," of Section 00 72 13, "General Conditions," the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to SRTA. Such payment shall be made under the Terms and Conditions

governing final payments, except that it shall not constitute a waiver of claims. AIA Documents G707, Consent of Surety Company to Final Payment, or if appropriate, G707-A, Consent of Surety to Reduction in or Partial Release of Retainage, shall be used.

10.6.4. The making of final payment shall not constitute a waiver of any claims by SRTA.

10.6.5. The acceptance of final payment shall, after the date of substantial completion of the Work, constitute a waiver of all claims by the Contractor.

10.6.6. All provisions of this Contract, including without limitation those establishing obligations and procedures, shall remain in full force and effect notwithstanding the making or acceptance of final payment.

10.6.7. Final payment will be released within 35 days after Notice of Completion is filed with the County Recorder's Office.

PART 11 – PROTECTION OF PERSONS AND PROPERTY

11.1. SAFETY PRECAUTIONS AND PROGRAMS

11.1.1. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

11.2. SAFETY OF PERSONS AND PROPERTY

11.2.1. The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

.1 All employees on the Work and all other persons who may be affected thereby;

.2 All building tenants, including their employees, equipment, vehicles, or property that may be affected thereby;

.3 All the work and all materials and equipment to be incorporated therein, whether in storage or off the site, under the care, custody or control of the Contractor or any of the Contractor's Subcontractors or Sub-subcontractors;

.4 Other property at the Work Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and

.5 The work of SRTA or other separate contractors relating to this contract.

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

11.2.3. The Contractor shall erect and maintain, as required by existing conditions and the progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying SRTA's employees, tenants and users of adjacent facilities.

11.2.4. When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost

care and shall carry on such activities under the supervision of properly qualified personnel.

11.2.5. The Contractor shall promptly remedy all damage or loss to any property referred to in the above Parts 11.2.1.2, 11.2.1.3 and 11.2.1.4 caused in whole or in part by the Contractor, any subcontractor, any sub-subcontractor, anyone directly or indirectly employed by any of them, or any one for whose acts any of them may be liable, and for which the Contractor is responsible under the above Parts 11.2.1.2, 11.2.1.3 and 11.2.1.4, except damage or loss attributable solely to the acts or omissions of SRTA, or anyone directly or indirectly employed by it, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 00 72 13, “General Conditions,” Part 6.14, “Indemnification.”

11.2.6. The Contractor shall designate a responsible member of the Contractor's organization at the Work Site whose duty shall be the prevention of accidents. This person shall be the Superintendent unless otherwise designated by the Contractor in writing to SRTA.

11.3. EMERGENCIES

11.3.1. In any emergency affecting the safety of persons or property the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in Part 13, “Changes in the Work,” of these General Conditions for Changes in the Work.

PART 12 – INSURANCE

12.1. CONTRACTOR’S INSURANCE

Bidder’s attention is directed to the insurance requirements below. It is highly recommended that bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of the insurance certificates and endorsements required below. A Bidder, who is awarded the Contract and thereafter fails to comply strictly with the insurance requirements, will be deemed to be in breach of Contract.

Contractor shall procure and maintain, for the duration of the Contract, insurance against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the Work by the Contractor, Contractor’s agents, representatives, employees or Subcontractors. The cost of such insurance shall be included in the Contractor's bid.

No later than 10 calendar days following the Award of the Contract, and prior to execution of the Contract for Construction by SRTA, the Contractor shall submit amendments or endorsements to Contractor’s policies of insurance, signed by an authorized agent of the insurer, attesting to insurance coverage of the Contractor as

required by this Subsection.

12.1.1. Minimum Scope of Insurance: Coverage shall be at least as broad as:

.1 Insurance Services Office Commercial General Liability coverage "occurrence" form CG0001 12 07.

.2 Insurance Services Office Business Auto Coverage form number CA 0001 0306 covering Automobile Liability, code 1 "any auto."

.3 Workers' Compensation insurance as required by the Labor Code of the State of California and Employers Liability insurance.

12.1.2. Minimum Limits of Insurance: Contractor shall maintain limits no less than:

.1 **General Liability:** $1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this Work/location or the general aggregate limit shall be twice the required occurrence limit.

.2 **Automobile Liability:** $1,000,000 combined single limit per accident for bodily injury and property damage.

.3 **Workers' Compensation and Employers Liability:** Workers' compensation limits as required by the labor Code of the State of California and Employers Liability limits of $1,000,000 per accident.

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

12.1.4. Other Insurance Provisions: The policies are to contain, or be endorsed to contain, the following provisions:

.1 General Liability and Automobile Liability Coverages:

a. The Shasta Regional Transportation Agency (SRTA), its officers, officials, employees, and agents while performing contract administration services, and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor, including the insured's general supervision of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobile owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to SRTA, its officers, officials, employees, agents, or volunteers.

b. The Contractor's insurance coverage shall be primary insurance as

respects SRTA, its officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by SRTA, its officers, officials, employees, agents, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to SRTA, its officers, officials, employees, agents, or volunteers.

d. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

e. All insurance (except workers' compensation and professional liability) shall include an endorsement or an amendment to the policy of insurance which names the ***Shasta Regional Transportation Agency, its elected officials, officers, employees, agents, and volunteers as an additional insured and provides that coverage shall not be reduced or canceled without 30 days written prior notice certain to SRTA.*** Any available insurance proceeds in excess of the specified minimum limits and coverage pursuant to the terms of this agreement shall be applicable to the Additional Insured. The additional insured coverage shall be equal to Insurance Service Office endorsement CG 20 10 for ongoing operations and CG 20 37 for completed operations.

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

.2 Workers' Compensation and Employers Liability Coverage: The insurer shall agree to waive all rights of subrogation against SRTA, its officers, officials, employees and volunteers for losses arising from work performed by the Contractor for SRTA.

.3 All Coverages: Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to SRTA.

12.1.5. Acceptability of Insurers: Insurance is to be paid with insurers with a Best's rating of no less than A: VI.

12.1.6. Verification of Coverage: Contractor shall furnish SRTA with endorsements or insurance policy amendments reflecting the types of insurance and limits of coverage required by this Section 12. The endorsements or amendments for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements or amendments are to be received and approved by SRTA before work commences. SRTA reserves the right to require complete, certified copies of all required insurance policies, at any time. A copy of the insurance certificate will be kept on file at SRTA's place of business.

12.1.7. Subcontractors: Contractor shall include all subcontractors as insureds under its policies or shall furnish separate insurance policy amendments and endorsements for each subcontractor. All coverages provided by subcontractors shall be subject to all of the requirements stated herein. Subcontractor limits will be provided as follows:

.1 General Liability: $1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this Work/location or the general aggregate limit shall be twice the required occurrence limit.

.2 Automobile Liability: $1,000,000 combined single limit per accident for bodily injury and property damage.

.3 Workers' Compensation and Employers Liability: Workers' compensation limits as required by the labor Code of the State of California and Employers Liability limits of $1,000,000 per accident.

PART 13 – CHANGES IN THE WORK

13.1. CHANGE ORDERS

13.1.1. SRTA, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletion or other revisions, the Contract Sum and Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents.

13.1.2. Costs means an itemized breakdown of all labor (by crafts), materials, sales taxes, equipment rentals, etc. for each portion of the Work which comprises the change order including any Subcontractors itemized breakdown, plus markup not exceeding the following, which represent all profits, overhead and administration costs:

.1 Fifteen percent (15%) of the cost of that portion of the change order to be performed by the General Contractor with its own forces.

.2 Fifteen percent (15%) of the cost of that portion of the change order to be performed by a subcontractor with its own forces, plus five percent (5%) for the General Contractor. Total combined General Contractor and Subcontractor markup shall not exceed twenty percent (20%).

.3 Fifteen percent (15%) of the cost of that portion of the change order to be performed by a lower tier Subcontractor with its own forces, plus five percent (5%) for the Subcontractor, plus five percent (5%) for the General Contractor. Total combined General Contractor, Subcontractor, and lower tier Subcontractor markup shall not exceed twenty-five percent (25%).

.4 All markups to be calculated on actual construction costs, not marked up figures.

13.1.3. The cost or credit to SRTA resulting from a change in the Work shall be determined in one or more of the following ways:

.1 By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.

.2 By unit prices stated in the Contract Documents or subsequently agreed upon in writing;

.3 By cost to be determined in a manner agreed upon by the parties in writing and a mutually acceptable fixed or percentage fee; or

.4 By the method provided in Part 13.1.4 and 13.1.5 below.

13.1.4. If none of the methods set forth in Parts 13.1.3.1, 13.1.3.2, or 13.1.3.3 above is agreed upon, the Contractor, provided that a written order signed by SRTA is received, shall promptly proceed with the work involved. The cost of such work shall then be determined by SRTA, on the basis of reasonable expenditures or savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Parts 13.1.3.3 above, the Contractor shall keep and present, in such form as SRTA may prescribe, an itemized accounting of actual cost together with appropriate supporting data for inclusion in a Change Order. Unless otherwise provided in the Contract Documents, cost shall be limited to the following, but only to the extent that they are directly attributable to the change: cost of materials, including sales tax and cost of delivery; cost of labor including social security, old age and unemployment insurance and fringe benefits required by agreement or custom; workers' compensation insurance; bond premiums; rental value of equipment and machinery; and the additional costs of supervision and field personnel directly attributable to the change. Upon determination of cost by SRTA, payments to the Contractor may be made. If the Contractor disputes the cost determination, the Contractor may initiate a Claim in compliance with the Claims and disputes resolution provisions of Part 8.4 of these General Conditions.

13.1.5. Costs of change order work shall not include costs of any of the following:

.1 Superintendent(s) – unless performing physical work associated with the change order

.2 Assistant Superintendent(s) – unless performing physical work associated with the change order

.3 Project Engineer

.4 Project Manager

.5 Scheduler

.6 Estimator

.7 Drafter or Detailer

.8 As-built plans

.9 Small tools (replacement value that does not exceed $800)

.10 Office expenses including staff, materials and supplies

.11 On-site or off-site trailer and storage rental and expenses

.12 Site fencing

.13 Utilities, including gas, electric, sewer, water, telephone, fax or copier equipment

.14 Data processing personnel and equipment

.15 Home office overhead

13.1.6. The amount or credit to be allowed by the Contractor to SRTA for any deletion or change that result in a decrease in the Contract Sum will be the amount of the actual cost including reasonable overhead. When both additions and credits covering related work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured in the basis of the new increase, if any, with respect to that change.

13.2. PROJECT CONDITIONS

13.2.1. SRTA has examined carefully the Work Site, and the Contract Documents, and has satisfied itself as to the character, quality and quantity of the surface and subsurface materials or obstacles to be encountered. Contractor has satisfied itself through its own investigation as to the conditions to be encountered; the character, quality and scope of work to be performed; the materials and equipment to be furnished; and all requirements of the Contract Documents.

13.2.2. Where investigations of subsurface conditions have been made with respect to foundation or other structural design, and that information is made available to Contractor or shown in the Contract Documents, said information represents only the statement as to the character of materials which have been actually encountered in the investigation, and is only made available or included for the convenience of Contractor.

13.2.3. Investigations of subsurface conditions are made for the purpose of design, and SRTA assumes no responsibility whatsoever with respect to the sufficiency or accuracy of borings, the log of test borings, or other preliminary investigations, or of the interpretation thereof, and there is no guaranty; either expressed or implied, that the conditions indicated are representative of those existing throughout the work, or any part of it, or that unanticipated conditions may not occur. When a log of test borings is made available to Contractor or included in the Contract Documents, it is expressly understood and agreed that said log of test borings does not constitute a part of the Contract, and represents only an opinion of SRTA as to the character of the materials to be encountered, and is made available or included in the Contract Documents only for the convenience of the Contractor. Making such information available to Contractor is not to be construed in any way as a waiver of the provisions of the first two paragraphs of this Part 13.2, and Contractor must, through Contractor's own investigations, be satisfied as to the conditions to be

encountered.

13.3. REQUEST FOR EQUITABLE ADJUSTMENT

13.3.1. If the Contractor considers a Request for Equitable Adjustment is justified for an increase in the Contract Time, the Contractor shall promptly, upon first observance of the condition giving rise to the request, provide SRTA written notice of such condition and circumstance. This notice shall be given by the Contractor before proceeding to execute the Work, except in the case of emergency endangering life or property, in which case the Contractor shall proceed in accordance with Part 10.3, "Emergencies," of these General Conditions. No such request shall be valid unless so made. Any change in the Contract Time resulting from such Request for Equitable Adjustment shall be authorized by Change Order.

13.4. MINOR CHANGES IN THE WORK

13.4.1. SRTA will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be promulgated by written order issued through SRTA's Project Architect, and shall be binding on SRTA and the Contractor. AIA Document G710, Architect's Supplemental Instructions, or other substitute form supplied and required by SRTA shall be used. The Contractor shall carry out such written orders promptly.

PART 14 –INSPECTION, UNCOVERING AND CORRECTION OF WORK

14.1. UNCOVERING WORK

14.1.1. If any portion of the Work should be covered contrary to the request of SRTA, public authority having jurisdiction, or to the requirements specifically expressed in the Contract Documents, it must, if required in writing by SRTA, be uncovered for observation and inspection, all at the Contractor's expense.

14.1.2. If any other portion of the Work has been covered which SRTA or public authority having jurisdiction has not specifically requested to observe prior to its being covered, SRTA may request to see such Work and it shall be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to SRTA. If such Work be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it be found that this condition was caused by SRTA or a separate contractor as provided in Subsection 6, "Work by SRTA or by Separate Contractors," of these General Conditions, in which event SRTA shall be responsible for the payment of such costs.

14.2. CORRECTION OF WORK

14.2.1. The Contractor shall promptly correct all work rejected by SRTA as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion of the Work and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected work,

including compensation for SRTA's additional services made necessary thereby.

14.2.2. If, within one year after the recordation of the Notice of Completion of the Work or designated portion, or within one year after acceptance by SRTA of designated equipment, or within such longer period of time as may be prescribed by the terms of any applicable special warranty required by the Contract Documents or provided by the Contractor, a subcontractor or supplier, any of the Work to be found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from SRTA to do so unless SRTA had notice of the full extent of the defect and had previously given the Contractor a written acceptance of such defective condition. This obligation shall survive both final payment for the Work or designated portion thereof and termination of the Contract. SRTA shall give such notice promptly after discovery of the condition.

14.2.3. The Contractor shall, at Contractor's sole expense, remove from the Work Site all portions of the Work that are defective or nonconforming and which have not been corrected under Parts 5.4, "Warranty," 14.2.1 and 14.2.2 of these General Conditions, unless removal is waived by the County.

14.2.4. If the Contractor fails to correct defective or nonconforming work as provided in Parts 4.5.1, 14.2.1 and 14.2.2 of these General Conditions, SRTA may correct it in accordance with Subsection 3.3 of these General Conditions.

14.2.5. If the Contractor does not proceed with the correction of such defective or nonconforming work within a reasonable time fixed by written notice, SRTA may remove it and may store the materials or equipment associated with the defective or nonconforming work at the expense of the Contractor and shall be disposed of or returned to the Contractor as required by law.

14.2.6. The Contractor shall bear the cost of making good all work of SRTA or separate contractors destroyed or damaged by such correction or removal.

14.2.7. Nothing contained in this Part 14.2 shall be construed to establish a period of limitation with respect to any other obligation, which the Contractor might have under the Contract Documents, including Part 5.4, "Warranty," of these General Conditions. The establishment of the time periods noted in Part 14.2.2 above, or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents, relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

14.3. ACCEPTANCE OF DEFECTIVE OR NONCONFORMING WORK

14.3.1. If SRTA prefers to accept defective or nonconforming Work, SRTA may do so instead of requiring its removal and correction, in which case a Change Order will be issued by SRTA to reflect a reduction in the Contract Sum where appropriate and equitable. Such adjustment shall be effected whether or not final payment has

been made.

PART 15 – TERMINATION OF THE CONTRACT

15.1. TERMINATION BY THE CONTRACTOR

15.1.1. If the Work is stopped for a period of 30 days under an order of any court or other public authority having jurisdiction, or as a result of an act of government such as a declaration of a national emergency making materials unavailable, through no act or fault of Contractor or a subcontractor or any agents or employees or any other persons performing any of the Work under a contract with the Contractor, then the Contractor may, upon 30 additional days' written notice to SRTA, terminate the Contract and recover from SRTA payment for all work satisfactorily executed.

15.2. TERMINATION BY SRTA

15.2.1. If the Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of the Contractor's insolvency, or stop notices are served upon SRTA or if the Contractor persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or fails to make prompt payment to subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations or orders of having any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, and fails after written notice to commence and continue correction of such default, neglect or violation with diligence and promptness, SRTA may, after an additional written notice and without prejudice to any other remedy SRTA may have, terminate the Contract, and may finish the Work by whatever methods SRTA deems expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished.

15.2.2. SRTA may terminate this agreement immediately upon notice should funding cease or be materially decreased during the term of this agreement.

15.2.3. If, upon termination of the Contract by SRTA, the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, Contractor will only be paid for Contractor’s actual unpaid costs from such excess. If such costs exceed the unpaid balance, the Contractor shall pay the difference to SRTA. The amount to be paid to the Contractor or to SRTA, as the case may be, upon application, in the manner provided for in Part 10.3, “Progress Payments,” of these General Conditions. This obligation for payment shall survive the termination of the Contract.

PART 16 – ADDITIONAL INSTRUCTIONS

16.1. SUBSTITUTION OF MATERIALS

16.1.1. Pursuant to Public Contract Code Section 3400, all Bidders shall submit, without exception, all requests to substitute materials, product, things or services of “equal” value to those set forth in the Specifications, according to timelines and

requirements specified in Section 01 25 13 “Product Substitution Procedures.”

16.2. REFERENCE TO STANDARDS

16.2.1. Reference to known standards shall mean and intend the latest edition or amendment published prior to the date of the Specifications, unless specifically indicated otherwise, and to such portions of the Specifications that relate and apply directly to the material or installation called for on the Work.

16.2.2. Where material is specified solely by reference to standard specifications, the Contractor shall, if requested by SRTA, submit for SRTA’s approval, data on all such material proposed to be incorporated into the work of the Contractor listing the name and address of the vendor, the manufacturer or producer, and the trade or brand names of such materials.

16.3. APPROVED APPLICATORS

16.3.1. Where specific instructions in the Contract Documents require that a particular product and/or materials be installed and/or applied by an "approved applicator" of the manufacturer, it shall be the Contractor's responsibility to insure that any Subcontractors used for such work be approved applicators.

16.4. DELIVERY AND STORAGE OF MATERIALS

16.4.1. Contractor shall deliver all manufactured materials in the original packages, containers or bundles (with the seals intact) bearing the name or identification mark of all manufacturers.

16.4.2. Contractor shall deliver fabrications in as large assemblies as practicable and where specified to be shop-primed or shop-finished, they shall be packaged or crated as required to preserve such priming or finish intact and free from abrasion.

16.4.3. Contractor shall store all materials in such manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted. Contractor must replace or repair to as new condition any damaged materials or equipment.

16.4.4. Contractor shall store materials so as to cause no obstructions. Materials shall be stored off sidewalks, roadways, and underground services. The Contractor shall be responsible for protecting all material and equipment furnished under the Contract.

16.4.5. For storage of materials onsite, Contractor shall submit a plan to SRTA that identifies appropriate storage locations that minimizes impact to SRTA and building tenants regular working hours. SRTA shall review and approve the plan and make any appropriate modifications.

16.5. WORKMANSHIP

16.5.1. Where not more specifically described in any of the various provisions of the Contract Documents, workmanship shall conform to all of the methods and operations of best standards and accepted practices of the trade or trades involved, and shall include all items of fabrication, construction, or installation regularly furnished or required for completion (including any finish), and for successful

operation as intended.

16.5.2. All work shall be executed by mechanics skilled in their respective lines of work.

16.5.3. When completed, all parts shall have been durably and substantially built and shall present a neat, workmanlike appearance.

16.6. FINAL GUARANTEE

16.6.1. In addition to any guarantees/warranties required elsewhere by the Contract Documents, the Contractor shall be held responsible for, and must make good any defects through faulty, improper, or inferior workmanship or materials, arising or discovered in any part of its work or structure, piping and appurtenances, within one (1) year after the filing of the Notice of Completion.

16.6.2. Contractor guarantees that all materials and workmanship shall conform to the Contract Documents and agrees to replace, at Contractor's sole cost and expense, and in conformity with the Contract Documents, any defective material and any and all work defectively or improperly performed or installed within a period of one (1) year after final acceptance in accordance with Part 10.6, "Final Completion and Final Payment," of these General Conditions. The Contractor shall, within a reasonable time, but in no case longer than fifteen (15) days after receipt of written notice thereof, commence to repair and/or replace any defect in materials or workmanship which may develop or be discovered during said one-year period, and any damage to adjacent materials resulting from the repairing or replacing of such defects, at its own expense and without cost SRTA. In the event Contractor fails to remedy any such defect within a reasonable time, which shall not in any case be longer than thirty (30) days after receipt of such written notice (unless Contractor has commenced the repair and is diligently pursuing the repair to completion), SRTA may proceed to have such defects remedied at Contractor's expense and Contractor shall pay the costs and charges incurred thereby. Neither acceptance nor payment nor any provision in the Contract Documents shall be deemed to be a waiver by SRTA to relieve Contractor of any responsibility under this Contract.

16.7. HOURS OF WORK

16.7.1. Eight (8) hours of labor shall constitute a legal day's work upon all work done hereunder, and it is expressly stipulated that no worker employed at any time by the Contractor, or by a Subcontractor under this Contract, upon the work, shall be required or permitted to work thereon more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week, except as provided in Section 1810-1815 inclusive, of the Labor Code of the State of California, all the provisions whereof are deemed to be incorporated herein as if fully set out; and it is further expressly stipulated that for each and every violation of said stipulation, Contractor shall forfeit, as a penalty to SRTA, twenty-five dollars ($25.00) for each worker employed by the Contractor in the execution of this Contract, for each calendar day during which said worker is required or permitted to labor more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of said Sections of the Labor Code.

16.7.2. The Contractor and each Subcontractor shall also keep or cause to be kept, an accurate record showing the names and actual hours worked each calendar day and each calendar week by each worker employed by Contractor or Subcontractor in connection with the work contemplated by this Contract, which record shall be open at all reasonable hours to the inspection of SRTA or its officer or agents, and to the Division of Labor Law Enforcement of the Department of Industrial Relations, its deputies and agents.

16.7.3. Notwithstanding the above, pursuant to Section 1815 of the Labor Code, work performed by employees of contractors in excess of eight (8) hours per day and forty (40) hours during any one week shall be permitted upon the Work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1 1/2) times the basic rate of pay.

16.8. WAGE RATES

16.8.1. Pursuant to Sections 1770-1781 of the Labor Code of the State of California, the Director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages and rates for legal holidays and overtime in the locality in which the work to complete the Work is to be performed, for each craft or type of worker or mechanic needed to execute this contract. Copies of the prevailing rate of per diem wages are on file at the SRTA's office, located at 1255 East Street, Suite 202, Redding, California, and are available to Contractor on request.

16.8.2. It shall be mandatory upon the Contractor, and upon any Subcontractor to pay not less than the said specified rates to all laborers, worker, and mechanics employed by them in the execution of the Contract, and to pay all laborers, workers and mechanics not less often than once weekly. Contractor shall post a copy of the determination of prevailing wages at the job site. The Contractor shall require all Subcontractors to comply with Sections 1770-1781 of the Labor Code of the State of California and shall insert into every subcontract the requirements contained therein.

16.8.3. It is hereby further agreed that the Contractor shall forfeit to SRTA, as a penalty, twenty-five dollars ($25.00) for each laborer, worker, or mechanic employed for each calendar day or portion thereof, who is paid less than the said stipulated rates for any work done under the Contract, by the Contractor or by any Subcontractor. The difference between said stipulated rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than said stipulated rate shall be paid to each worker by the Contractor. The Contractor, and each Subcontractor, shall keep or cause to be kept an accurate 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 in connection with the Work. The records shall be open at all reasonable hours to the inspection of SRTA, to its officers and agents, and to the Division of Labor Law Enforcement of the State Department of Industrial Relations, its deputies and agents.

16.8.4. In case it becomes necessary for the Contractor or any Subcontractor to employ on the work under this Contract any person in a trade or occupation (except executive, supervisory, administrative, clerical or other non-manual workers as such) for which no minimum wage rate is specified, the Contractor shall immediately notify SRTA and SRTA shall promptly thereafter determine the prevailing rate for such additional trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

16.9. APPLICATION OF HIGHEST STANDARDS AND REQUIREMENTS

16.9.1. Whenever two or more standards or requirements appear in any other part of the Contract Documents, the highest standard or requirement shall be applied and followed in the performance under this Contract.

16.10. NONDISCRIMINATION IN EMPLOYMENT

16.10.1. Federal and State Laws prohibit discrimination in employment. The California Fair Employment and Housing Act (Government Code, Section 12900 et seq.) prohibits discrimination in employment on the basis of sex, race, color, creed, ancestry, religion, national origin, physical or mental disability, sexual orientation, medical condition (cancer, HIV and AIDS), age (over 40), marital status, or other protected status, nor deny family care leave and or pregnancy disability leave, and applies to all employers, employment agencies and labor organizations.

16.10.2. Title VII of the Federal 1964 Civil Rights Act (42 U.S.C. Section 2000e - 2000e - 17) prohibits employment discrimination on the basis of race, color, sex, religion, or national origin, and applies to all employers that employ at least 15 workers during each working day in each of 20 or more calendars weeks in the current or preceding year.

16.10.3. In addition, there are other Federal and State laws that prohibit employment discrimination in particular cases.

16.10.4. To the extent required by law, the Contractor shall meet all requirements of law relating to the participation of minority, women, and disabled veteran business enterprise contracting goals, and shall comply with Public Contract Code Sections 10115 et seq. and all applicable regulations. Contractor further agrees that, when required, Contractor will ensure compliance by all Subcontractors and will complete all forms required by all agencies exercising jurisdiction over the Work.

16.10.5. Contractor shall include the provisions of this Part 16.10, “Nondiscrimination in Employment” in every contract or agreement with its subcontractor(s). The Contractor shall take such action with respect to any such agreement SRTA or appropriate agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

16.10.6. In the event of the Contractor’s noncompliance with the nondiscrimination provisions of this agreement, SRTA shall impose such penalties as it, or other applicable agency may determine to be appropriate, including, but not limited to:

.1 Withholding of payments to the Contractor under this Contract until the

Contractor complies; and/or

.2 Cancellation, termination or suspension of the Contract, in whole or in part.

16.11. EMPLOYMENT OF APPRENTICES

16.11.1. Contractor agrees to comply with Labor Code Sections 1777.5 and 1777.6, and 3077 et seq., each of which is incorporated by reference into this Contract. In summary, these sections require that contractors and subcontractors employ apprentices in apprenticeable occupations in the ratio stipulated in the apprenticeship standards under which the apprenticeship program operates, but in no case shall the ratio be less than one hour worked by an apprentice for each five hours worked by a journeyman, unless an exemption is granted, and that contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public works project on the ground of race, religious creed, color, national origin, ancestry, sex, or age, except as provided in Labor Code Section 3077, which provides that an apprentice is to be at least 16 years of age. Only apprentices who are in training under written apprenticeship agreements will be employed on public works projects in apprenticeable occupations. The responsibility for compliance with these provisions for all apprenticeable occupations rests with Contractor.

16.12. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

16.12.1. Every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted, and this Contract shall be read and enforced as though it were included, and if through mistake or otherwise any provision is not inserted or is not correctly inserted, upon application of either party the Contract shall be amended to make the insertion or correction.

16.13. DRUG FREE WORKPLACE CERTIFICATION

16.13.1. The Contractor shall comply with Government Code Section 8355 in matters relating to providing a drug-free workplace.

16.13.2. The Contractor shall publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a)(1).

16.13.3. The Contractor shall establish a Drug-Free Awareness Program as required by Government Code Section 8355(a)(2), to inform employees about all of the following:

.1 The dangers of drug abuse in the workplace;

.2 The person’s or organization’s policy in maintaining a drug-free workplace;

.3 Any available counseling, rehabilitation and employee assistance programs; and

.4 Penalties that may be imposed upon employees for drug abuse violations.

16.13.4. As required by Government Code Section 8355(a)(3), everyone who works on the Contract:

.1 Shall receive a copy of the Contractor's drug-free policy statement, and

.2 Shall agree to abide by the terms of the company's statement as a condition of employment on the contract.

16.14. GRANT REQUIRED LANGUAGE

16.14.1. The Contractor shall maintain adequate fiscal and project books, records, documents and other evidence pertinent to the Contractor's work on the Work in accordance with generally accepted accounting principles. Adequate supporting documentation shall be maintained in such detail so as to permit tracing transactions from the invoices, to the financial statement, to the accounting records and to the supporting documentation. All of the Contractor's records contained in the official project file must be preserved for a minimum of three (3) years after the last date on which no lease revenue bonds are outstanding. If any litigation, claim, negotiation, audit, or other action involving the records has been started before the expiration of the relevant time period as set forth in the previous sentence, the related records must be retained until the completion of the action and resolution of all issues which arise from it if such date is later than the end of the aforementioned three-year period. These records shall be protected from fire and other damage.

END OF SECTION 00 72 13

SUPPLEMENTARY CONDITIONS

SECTION 00 73 13

PART 1 – GENERAL

1.1. INSTRUCTIONS

1.1.1. If any provision of this Section 00 73 13 "Supplementary Conditions" should conflict with any other provision of the Contract Documents, this Section shall control.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1. SRTA PERSONNEL

3.1.1. The term "SRTA's authorized representative for the Work," is defined as follows:

SRTA Project Manager(s)

Michael Kuker, Associate Transportation Planner (Primary Contact)
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001
Phone: (530) 262-6204
Fax: (530) 262-6189
Email: mkuker@srta.ca.gov

Mehdi Moeinaddini, Associate Transportation Planner (Secondary Contact)
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001
Phone: (530) 262-6189
Fax: (530) 262-6189
Email: mmoeinaddini@srta.ca.gov

Sean Tiedgen, AICP, Executive Director (tertiary Contact)
Shasta Regional Transportation Agency
1255 East Street, Suite 202
Redding, CA 96001
Phone: (530) 262-6185
Fax: (530) 262-6189
Email: stiedgen@srta.ca.gov

SRTA Project Architect(s)

Deven Carter, Project Architect
Nichols, Melburg & Rossetto
300 Knollcrest Drive

Redding, CA 96002
Phone: (530) 222-3300
Fax: (530) 222-3538
Email: carter@nmrdesign.com

3.2. ROLE OF PROJECT MANAGER(S)

3.2.1. The Project Manager(s) is SRTA's authorized representative for the Work. The Project Manager(s) represents SRTA for all purposes relevant to this Work.

3.3. ROLE OF PROJECT ARCHITECT

3.3.1. The Project Architect or "Architect" is SRTA's authorized representative for the Work. The Architect represents SRTA for all purposes relevant to this Work. The Architect shall have all authority as defined in Part 4 "Architect" of Section 00 72 13, "General Conditions."

3.4. ADDITIONAL PERSONNEL OR CHANGE IN PERSONNEL

3.4.1. SRTA reserves the right to assign additional persons to the positions set forth in this Section, or to change the personnel assigned to the positions so set forth.

3.4.2. The SRTA Executive Director shall notify the Contractor in writing of a change in Project Manager. The Project Manager shall notify the Contractor in writing of the change of other designated SRTA personnel or Project Architect(s).

3.4.3. In all cases, the Project Manager reserves the right to obtain assistance from other SRTA personnel or independent contractors or consultants employed by SRTA.

3.5. ABNORMAL WEATHER CONDITIONS

3.5.1. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

3.5.2. A rain, windstorm, high water or other natural phenomenon of the specific locality of the Work, which might reasonably have been anticipated from historical records of the general locality of the Work, shall not be construed as abnormal. It is hereby agreed that rainfall greater than the following cannot be reasonably anticipated:

.1 Daily rainfall equal to, or greater than, one (1) inch, during a month when the monthly precipitation exceeds the normal monthly average by fifteen percent (15%) or more. Historic monthly precipitation shall be the then-current "Precip." row for REDDING MUNICIPAL AP as reported at:

http://www.water.ca.gov/floodmgmt/hafoo/csc/climate_data/sacriver.cfm

.2 Daily rainfall equal to, or greater than, the 5-year storm, 24-hour duration at any time. Daily rainfall data shall be that measured at the Redding Fire Station (RFS) as reported by the California Data Exchange Center.

3.6. TIME OF COMPLETION

3.6.1. Milestones:

.1 The Work shall be started and completed in the times set forth in Section 00 31 13, "Construction Schedule and Liquidated Damages."

.2 Days are from the date established in the Notice to Proceed, and represent calendar days.

3.6.2. SRTA will acknowledge, in writing, the date of Substantial Completion. Such acknowledgment will not constitute acceptance.

3.7. LIQUIDATED DAMAGES

3.7.1. Liquidated Damages for failure to be substantially complete within the specified time will be as set forth in Section 00 31 13, "Construction Schedule and Liquidated Damages," and Part 9.2.5, "Liquidated Damages," of Section 00 72 13, "General Conditions."

3.8. SITE SECURITY AND TEMPORARY FENCING

3.8.1. Contractor is responsible for providing any necessary fences, barriers or guardrails around the perimeter of the Work Site. Contractor must maintain the continuity of the temporary fences, barriers and guardrails at all times. SRTA must review and approve layout of the temporary fences and barriers.

3.8.2. Contractor is responsible for the security of all items within the Work Site and all items in adjacent delivery or storage areas.

3.8.3. Contractor is responsible for any appropriate worksite signage necessary for informing SRTA's employees, building tenants, visitors or the public of activity related to the Work or storage of materials.

3.9. ATTIRE AND DECORUM

3.9.1. The Work Site will be adjacent to and on active public and private buildings. Extreme care to limit noise shall be taken at all times. Loud, unnecessary or offensive conversation shall be prohibited. The playing of radios, tapes, compact discs, MP-3 players, or any other broadcasting device shall be strictly limited to low volumes. Noise, which in the opinion of SRTA, is disturbing or disruptive to the operation of the existing facility, shall be scheduled for periods as required to minimize such disturbances, at no additional cost to SRTA. SRTA, in its sole discretion, may prohibit use of radios, tapes, compact discs, MP-3 players, or any other broadcasting device.

3.9.2. The Contractor shall control the conduct of its employees, and shall require subcontractors to control their own employees, so as to prevent unwanted interaction with staff or other individuals adjacent to the Work Site. This includes without limitation, whistling at or initiating conversations with passersby.

END OF SECTION 00 73 13

PRODUCT SUBSTITUTION PROCEDURES

SECTION 01 25 13

PART 1 – GENERAL

A SUMMARY

1. There are two time periods allowed for submission of data substantiating a request for a substitution of "an approved equal" item:

   1.1. Bidders may request a substitution up to six (6) calendar days prior to the time indicated for receipt of bids in Notice to Bidders. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor, and the Contractor shall furnish all information necessary as required by SRTA. SRTA shall be the sole judge as to the quality and suitability of alternative articles or materials, and the SRTA's decision shall be final. The Contractor's attention is directed to these Special Provisions.

   1.2. Contractor may request a substitution after the award of the contract for a period of twenty (20) calendar days immediately following award of the contract.

2. Contractor shall provide products from one manufacturer for each type or kind as applicable. Contractor shall provide secondary materials as recommended by manufacturers of primary materials.

3. Contractor shall provide products selected or approved equal. Products submitted for substitution as an approved equal shall be submitted with acceptable documentation, and include costs of substitution including related work. References to any product, material, equipment, article, system, service or patented process, by trade, catalogue number, name brand product or product manufacturer is for information only and shall not be construed as limiting competition.

4. Substitutions will only be considered when one or more of the following conditions are met:

   4.1. All aspects of the proposed substitution meet or exceed the criteria for the specified product.

   4.2. The proposed changes are in keeping with the general intent of the Contract Documents.

   4.3. The request is fully documented and timely and properly submitted.

   4.4. The specified product cannot be provided within the Contract Time.

   4.5. The request is directly related to an "or approved equal" clause or similar language in the Contract Documents.

   4.6. The request offers SRTA a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities that SRTA must assume. SRTA's additional responsibilities may include, but not be limited to, compensation to Consultants for redesign and/or evaluation services and increased cost of other construction by SRTA.

   4.7. The specified product becomes unavailable through no fault of Contractor.

4.8. The specified product cannot receive necessary approvals by governing authorities and the requested substitution can be approved by governing authorities in a timely manner.

4.9. It can be demonstrated that the specified product cannot be coordinated with other materials and Contractor certifies that the proposed substitution will overcome the incompatibility.

4.10. It can be demonstrated that the specified product cannot be coordinated with other materials and Contractor certifies that the proposed substitution can be coordinated.

4.11. The specified product cannot provide the warranty required by the Contract Documents and Contractor certifies that the proposed substitution provides the required warranty.

5. Substitutions will not be considered when one or more of the following conditions occur:

5.1. Acceptances would require revisions to the Contract Documents, Contract Time extensions or an increase in the Contract Sum.

5.2. They are indicated or implied on shop drawing or product data submittals, without separate written request.

5.3. When the specified product cannot be provided as a result of failure of Contractor to pursue the Work in a timely manner or properly coordinate construction activities.

6. In those cases where the Specifications designate a product, material, equipment, article, system, service or patented process by specific brand or trade name and there is only one brand or trade name listed, the item involved is:

6.1. Required to be used since it is a unique or novel product application, or

6.2. Required to match other products in use by the SRTA, or

6.3. The only brand or trade name known.

7. Document each request on Substitution Request Form attached at the end of this Section with complete data substantiating compliance of proposed Substitution with the Contract Documents. The burden of proof as to comparative quality, suitability and performance of proposed product(s), material(s), equipment, article(s), system(s) or patented process(es) shall be upon Contractor. SRTA will be the sole judge of the equality of the proposed substitution versus the specified item(s).

8. A substitution request constitutes a representation that Contractor:

8.1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified products.

8.2. Will provide the same warranty for the Substitution as for the specified product.

8.3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to SRTA.

8.4. Waives claims for additional costs or time extensions which may subsequently become apparent.

8.5. Will reimburse SRTA for review services associated with approvals by authorities

having jurisdiction.

9. Substitution Submittal Procedure:

   9.1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.

   9.2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.

   9.3. Architect will notify Contractor, in writing, of decision to accept or reject request.

   9.4. An incomplete Substitution Request package will not be reviewed and will be returned to Contractor. Contractor shall then provide the specified item.

   9.5. Only on request for substitution will be allowed. If proposed substitution is not accepted by Architect, Contractor shall provide the specified item.

   9.6. Use of accepted substitutions shall in no way relieve Contractor from responsibility for compliance with Drawings and Specifications. The use of accepted substitutions will require that all extra costs caused by the use of such substitutions where they affect other work or trades shall be borne by Contractor.

   9.7. All substitutions affecting structural or fire/life safety items will require approval from all authorities having jurisdiction prior to fabrication and installation on the project.

10. Approval of shop drawings, product data, or samples is not a substitution approval unless clearly presented as a substitution at the time of submittal.

11. For convenience in designation on the plans or in the specifications, certain articles or materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer and the manufacturer's catalogue information. The use of an alternative article or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the following requirements:

    11.1. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor and the Contractor shall furnish all information necessary as required by the SRTA. SRTA shall be the sole judge as to the quality and suitability of alternative articles or materials, and SRTA's decision shall be final.

    11.2. Whenever the Specifications permit the substitution of a similar or equivalent material or article, no tests or action relating to the approval of the substitute material will be made until the request for substitution is made in writing by the Contractor, accompanied by complete data as to the equality of the material or article proposed. The request shall be made in ample time to permit approval without delaying the Work.

SUBSTITUTION REQUEST FORM TO FOLLOW

SUBSTITUTION REQUEST FORM

SUBSTITUTION REQUEST NUMBER:_____

TO:

_____

PROJECT:

_____

SPECIFIED ITEM:

_____

Section Page Paragraph Description

_____

_____

Proposed Substitution (Manufacturer, Model # or Name, Color, Etc.):

_____

_____

_____

History: ___ New Product, ___ Available 2-5 Years, ___ Available 6-10 Years, ___ Available 10+ Years

Provide UL, ITS, WHI, (or other) listing / rating of proposed substitution:

_____

Attached data shall include, but not be limited to, product, specification, drawings, performance and test data adequate for evaluation of the request for the proposed substitution product and the specified product, with applicable portions of the proposed substitution and the specified product data clearly identified in a point-by-point direct comparison chart. Incomplete form and attachments will result in rejection of substitution request.

_____

Requestor shall address the following items on this Substitution Request Form. Use a separate attached sheet as needed:

1. Reason for not providing specified item:

_____

_____

2. Will proposed substitution affect dimensions indicated on Drawings? ____(Yes) ____(No)

   If yes, how?_____

3. Will proposed substitution affect Electrical, Mechanical, Structural, Architectural, etc.? ____(Yes) ____(No) If yes, explain:

   _____

   _____

4. Is proposed substitution larger or smaller than specified product? ____(Yes) ____(No)
   If yes, state size of substitute product:

   _____

   _____

5. Does proposed substitution weigh less/more than specified product? ____(Yes) ____(No)
   If yes, state weight of substitute product:

   _____

   _____

6. Will proposed substitution affect other trades and/or parts of the Work? ____(Yes) ____(No)
   If yes, explain all effects:

   _____

   _____

7. Comparison between proposed substitution and specified product (Similarities / Differences)?

   _____

   _____

8. If Substitution Request is accepted, SRTA will receive a credit of $_____. The Contract Sum will be adjusted accordingly.
9. Will proposed substitution affect the Contract Time? ____(Yes) ____(No)
   If yes, ____(Add) ____(Deduct) _____ calendar days.

INITIAL UNDERSIGNED CERTIFIES:

_____ Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.

_____ Proposed substitution has same or better warranty as specified product.

_____ Proposed substitution has same or better maintenance service and availability of replacement parts as specified product.

_____ Proposed substitution will not affect or delay the Construction Schedule.

_____ Claims for additional costs related to accepted substitution, which may subsequently become apparent, are hereby waived.

_____ Proposed substitution will not affect dimensions and functional clearances.

_____ Coordination, installation, and changes in the Work as necessary for installation of

accepted substitution will be complete in all respects, at no additional cost to SRTA.

_____ Contractor will pay for all costs associated with changes to the project's design, including, but not limited to, architectural or engineering design fees, detailing, SRTA approvals and construction costs caused by the requested substitution.

_____ The function, appearance and quality of the proposed substitution is equivalent or superior to the specified item.

The undersigned certifies that the above is accurate and correct.

Signature: _____

Company: _____

Address: _____

_____

Date: _____

Telephone: _____

Attachments: ___Drawings ___Product Data ___Samples ___Tests ___Reports ___Other (Describe)

_____

SRTA's Review and Action:

_____ Substitution Accepted – Make submittals in accordance with Specification Section 01 33 00.

_____ Substitution Accepted as Noted - Make submittals in accordance with Specification Section 01 33 00.

_____ Substitution Rejected – Provide specified product.

_____ Substitution Request Received Too Late – Provide specified product.

By: _____ Date:_____

Remarks:_____

END OF SECTION 01 25 13

PROJECT MEETINGS

SECTION 01 31 19

PART 1 – GENERAL REQUIREMENTS

1. RELATED DOCUMENTS:

   1.1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions bidding documents and drawings.

2. PRECONSTRUCTION CONFERENCE

   2.1. The Preconstruction Conference will be scheduled within 15 working days after SRTA has issued the Notice to Proceed, but prior to actual start of the Work.

   2.2. Attendance: Representative(s) of SRTA, Contractor, and Contractor's superintendent.

   2.3. Agenda – At a minimum, the following items will be distributed and discussed:

      1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and SRTA.
      2. Channels and procedures for communication.
      3. Review set-up and storage area(s).
      4. Review all required permits.
      5. Review insurance requirements.
      6. Construction schedule, including sequence of critical work.
      7. Contract Documents, including distribution of required copies of Drawings and revisions.
      8. Processing of Shop Drawings and other data submitted to SRTA for review.
      9. Processing of field decisions and Change Orders.
      10. Rules and regulations governing performance of the work. How Contractor's people on site will respond to fire, accident or other emergencies.
      11. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.
      12. How will Contractor work with the security, noise and access limitations of this facility, and the tenants that occupy this facility?
      13. How will Contractor get materials to and from all Work areas?

3. PROGRESS MEETINGS

   3.1. Will be scheduled by SRTA or SRTA's representative weekly.

   3.2. Attendance: SRTA, Contractor, Job Superintendent, Roofing Material Manufacturer/Supplier, Subcontractors and representatives of the agencies and

businesses that occupy the building, as appropriate.

3.3. Agenda – At a minimum the following items will be discussed:

1. Review of work progress.
2. Field observations, problems, and decisions.
3. Identification of problems which impede planned progress.
4. Maintenance of progress schedule.
5. Corrective measures to regain projected schedules.
6. Planned progress during succeeding work period.
7. Coordination of projected progress.
8. Maintenance of quality and work standards.
9. Effect of proposed changes on progress, schedule, and coordination.
10. Impacts of the work on building tenants.
11. Other business relating to work.

4. PRE-FINAL INSPECTION

4.1. Contractor must inform SRTA that Contractor is ready for pre-final inspection of Work. SRTA will schedule a pre-final inspection.

4.2. Work noted as deficient during inspection must be repaired and corrected by Contractor.

4.3. Once corrections have been made, contractor must inform SRTA that Work is complete. A second inspection will be scheduled for review of Work.

5. FINAL INSPECTION

5.1. Contractor shall inform SRTA that Contractor is ready for final inspection of Work. SRTA will schedule the final inspection.

5.2. Attendance: SRTA or designated representative, Contractor, roofing material/ manufacturer/supplier.

5.3. Agenda – At a minimum the following will be reviewed and discussed:

1. Walkover inspection.
2. Identification of needed corrections to be completed by Contractor and final approval from warrantor.

END OF SECTION 01 31 19

CONSTRUCTION PROGRESS SCHEDULES

SECTION 01 32 16

PART 1 – GENERAL

1. The Contractor shall submit to SRTA construction schedules, including all phasing.
2. The Contractor may furnish the construction schedule on a form of their choice.
3. The construction schedule shall show the order in which the Contractor proposes to carry out the Work, the dates on which Contractor will start the salient features of the Work (including the submission of required submittals and the procurement of materials), the proposed dates and times of utility shut downs or any contractor operation that might impact the Work Site's operations, and the contemplated dates for completing the said salient features.
4. The Contractor shall coordinate Contractor's activities with SRTA's use of the Work Site. Contractor shall coordinate the construction schedule, including all phasing of the Work, with SRTA, SRTA's representatives or SRTA's separate contractors or subcontractors for any of the Work that may impact other activities of SRTA not directly related to the Work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 32 16

SUBMITTAL PROCEDURES

SECTION 01 33 00

PART 1 – GENERAL

1. SUMMARY

1.1. This Section includes information related to:

1. Shop drawings.
2. Product data.
3. Samples
4. Manufacturers' certificates.
5. Deferred SRTA Approvals.

2. DESCRIPTION

2.1. Types of SUBMITTALS: Submittal procedures specified in this section include construction progress schedules, shop drawings, product data, samples, and manufacturer's installation instructions.

2.2. Intent: SRTA's review of shop drawings is intended to be a preview of what the Contractor intends to provide, and will function as an effort to foresee unacceptable materials or assemblies and to avoid the possibility of their rejection at the Project Site. SRTA will review submittals only for conformance with the design concept of the Project and with the information given in the Contract Documents.

2.3. SRTA's review of shop drawings will be general and shall not be construed:

1. As permitting departure from the Contract requirements except as otherwise provided for under "substitution" provisions of Section 01 60 00;
2. As relieving Contractor of responsibility for omissions or errors, including details, dimensions, materials, etc.;
3. That review of a separate item indicates acceptance of an assembly in which the item functions. Architect will only review acceptance of an assembly in which the item functions. Architect will only review submittals required by Contract Documents for conformance with design concept of the Project and with the information given in the Contract Documents.

3. GENERAL SUBMITTAL PROCEDURES

3.1. Submittals shall be classified as either electronic or physical. Procedures for each type of submittal, as described below, shall be followed.

3.2. Transmit each submittal with AIA Form G810 or other SRTA-accepted form.

3.3. Number the submittals and transmittal forms as shown in each section requiring submittals with the project manual section number from which the submittal is being requested (i.e. 01 33 00). Resubmittals are to have original number followed by an

underscore and an additional numerical suffix beginning with '1' and then consecutively thereafter with each resubmittal. (i.e. 01 33 00_1)

3.4. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.

3.5. Apply Contractor's stamp and signature or initial (electronically or physically) certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.

3.6. Unless otherwise authorized by SRTA, all of the submittals required by a specification section shall be submitted together at the same time. Electronic submittals of product data, shop drawings, etc. may be submitted ahead of physical color samples with approval of SRTA. Submittals that do not include all required submittals for a given specification section will be returned without review.

3.7. Schedule submittals to expedite the Project, and deliver to Project Architect at business address. Coordinate submission of related items.

3.8. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

3.9. Substitutions must be submitted according to Section 01 60 00. Substitutions submitted without following this procedure will be rejected.

3.10. Provide space for Contractor, SRTA and Consultant's review stamps.

3.11. Revise and resubmit submittals as required, identify all changes made since previous submittal.

3.12. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

4. ELECTRONIC SUBMITTAL PROCEDURES

4.1. Construction Progress Schedules, Product Data, Shop Drawings, and Manufacturer's Installation Instructions may, with Architect's approval, be submitted electronically.

4.2. Electronic submittals shall be uploaded to Alliance System in full size PDF format. Do not reduce Shop Drawings from original sheet size.

4.3. One PDF copy of electronic submittals will be returned to the Contractor. Contractor may distribute submittals to the concerned parties electronically or physically. Any printing costs for physical distribution of submittals shall be borne by the Contractor. SRTA will not print copies for distribution.

4.4. Follow all General Submittal Procedures as described above.

5. PHYSICAL SUBMITTAL PROCEDURES

5.1. Samples, Color Charts, and SRTA Deferred Approvals shall be physical submittals. Construction Progress Schedules, Product Data, Shop Drawings and Manufacturer's Installation Instructions may, with the Architect's approval, be physical submittals.

5.2. The Architect will retain a minimum of two samples; submit the number that will be needed by contractor, plus two.

5.3. Follow all General Submittal Procedures as described above.

6. CONTRACTOR RESPONSIBILITIES

6.1. Review shop drawings, product data and samples prior to submission.

6.2. Determine and verify:

6.2.1. Field measurements;
6.2.2. Field construction criteria;
6.2.3. Catalog numbers and similar data;
6.2.4. Conformance with specifications; and
6.2.5. Conformance with applicable codes.

6.3. Submittals giving inadequate indication of contractor review and approval will be returned without review, for resubmission.

6.4. Coordinate each submittal with requirements of the Work and the Contract Documents.

6.5. Notify the Architect in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents.

6.6. No fabrication or construction activity shall begin, that requires submittals, until return of submittals with Architects stamp and initials or signature indicating finish review.

6.7. After SRTA's final review, distribute copies.

7. SHOP DRAWINGS

7.1. Submit electronically, the number of opaque reproductions that Contractor requires, plus four copies that will be retained by SRTA.

7.2. After review and distribution in accordance with Submittal Procedures, retain one copy of all reviewed shop drawings at the job and label them "PROJECT RECORD."

7.3. In addition to shop drawings required elsewhere, the following systems shall be electronically and multiple trade coordinated on an AutoCAD background file(s) of the floor plan at time of award of contract. The backgrounds provided shall be used as x-references to the contractor's files so that the backgrounds may be updated at the Architect's discretion. These coordination drawings shall include mechanical system component locations referenced vertically and horizontally to adjacent column grids and finished floor / ceiling elevations for the following systems:

1. Supply, return and exhaust air systems
2. Access to balancing devices
3. Steam and condensate return piping (including slope data)
4. Supply and return heating hot water
5. Domestic hot and cold water
6. Sanitary sewer and vent
7. Documented interface with existing storm drain system

8. Access to all equipment requiring service
9. Accessibility to all isolation valves
10. Location of piping system labeling per specifications
11. Primary electrical conduits
12. Specialty equipment with specialty support requirements
13. Light fixtures and their depths at locations of potential conflict.

7.4. The intent is for this to be a coordinated shop drawing reflecting, with only minor modifications, an as built document. This document shall be updated and submitted as a record document per Section 00 65 36. Provide electronic files to the Project Architect of all mechanical coordination drawing record document files with the record documents. If AutoCAD is not the CAD package used to view / edit the data, the Contractor may choose to translate the data into another CAD program.

7.5. The Contractor is responsible for translating the data coming to and from that format, without loss of data integrity. Project Architect will only receive data in the AutoCAD format in which the background(s) are provided.

8. PRODUCT DATA

8.1. Submit electronically, the number of copies that the Contractor requires, plus four copies that will be retained by the Project Architect.

8.2. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.

8.3. After review, distribute in accordance with Submittal Procedures and provide copies for Record Documents.

8.4. Show dimensions and clearances required.

9. SAMPLES

9.1. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Provide units identical with final condition of proposed materials or products for the work. Coordinate sample submittals for interfacing work.

9.2. Submit samples of finishes from the full range of manufacturers' standard colors textures, and patterns for the Architect's selection.

9.3. Include identification on each sample, with full Project information.

9.4. Submit the number or samples specified in individual specification Sections; two of which will be retained by SRTA.

9.5. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

10. MANUFACTURER'S INSTRUCTIONS

10.1. When specified in individual specification Sections, submit manufacturer’s printed instructions for delivery, storage, assembly, installation, start up, adjusting, and

finishing, in quantities specified for Product Data.

10.2. Identify conflicts between manufacturer's instructions and Contract Documents.

11. MANUFACTURER'S CERTIFICATES

11.1. When specified in individual specification Sections, submit manufacturer's certificate to Architect for review, in quantities specified for Product Data.

11.2. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.

11.3. Certificates may be recent or previous test results on material or Product, but must be acceptable to SRTA.

12. ACTION ON SUBMITTALS

12.1. Architect's Action: Architect will review each submittal, mark with "Action" and where possible, return within a reasonable period of time from date of receipt. Where submittal must be held for coordination, Contractor will be so advised without delay. Action markings shall be interpreted as follows:

1. No Exceptions Noted (NEN): Work may proceed, provided it complies with Contract Documents.
2. Furnish As Corrected (FAC): Work may proceed, provided it complies with notations and corrections indicated on submittal and with Contract Documents.
3. Revise And Resubmit (RAR): Do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking.
4. Submit Additional Material (SAM): Do not proceed with work. Resubmit submittal with additional material as requested without delay to obtain a different action marking.
5. Rejected (REJ): Do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking.
6. See Summary Sheet (SSS): Refer to summary sheet attached to submittal for direction.
7. Reviewed By Consultant (RBC): Submittal has been reviewed by the Architect's consultant. Refer to consultant submittal stamp for direction.

12.2. Sample Action Stamp:

Submittal Number: _____

☐ No Exceptions Noted ☐ REJected
☐ Furnish As Corrected ☐ See Summary Sheet
☐ Revise And Resubmit ☐ Reviewed By Consultant
☐ Submit Additional Material

Notes and/or comments made on shop drawings during this review do not relieve Contractor from compliance with requirements of the Contract Documents. This review has been performed by the Architect to check general conformance with the design concept of the project and general compliance with the information in the Contract Documents. Review of a specific item shall not include review of an assembly of which said item is a component. Contractor is responsible for confirming and correlating quantities and dimensions; selecting fabrication processes and construction techniques; coordinating his/her work with that of other trades and performing his/her work in a safe and satisfactory manner. This review shall not be interpreted as an approval of Contractor's means and methods of construction.

NICHOLS, MELBURG & ROSSETTO
300 Knollcrest Drive Redding, CA 96002

By _____ Date: _____

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 33 00

REFERENCES

SECTION 01 42 00

PART 1 – GENERAL

1. SECTION INCLUDES

   1.1. Reference Standards.

   1.2. Industry Standards.

   1.3. Definitions.

   1.4. Specification format and content explanation.

   1.5. Codes, regulations and governing agencies.

   1.6. References, abbreviations, and acronyms.

2. REFERENCE STANDARDS

   2.1. General: References are made throughout the Specification to various codes, reference standards, practices and requirements for materials, work quality, installation, inspections and tests which are published and issued by government agencies, professional and trade organizations, societies, associations and testing agencies. References to these publications are made by acronyms or abbreviations as listed in this Section.

   2.2. Obtain copies of reference standards, manuals and codes directly from publication sources as needed for proper performance and completion of the Work.

   2.3. Standards, manuals and codes referenced in the Specifications form part of these Specifications to the extent referenced. No provisions of any such standard, specification, manual, or code or instruction shall be effective to change the duties and responsibilities of SRTA, or Contractor; any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents; nor shall it be effective to assign to SRTA or any of SRTA's consultants, agents, or employees, a duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

   2.4. Reference to standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Contract Book unless noted otherwise.

3. INDUSTRY STANDARDS

   3.1. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the Work Site for

reference.

3.2. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of these specifications.

3.3. Updated Standards: At the request of SRTA, Contractor, or authority having jurisdiction, submit a Change Order Request where an applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. SRTA will decide whether to issue a Proposal Request to proceed with the updated standard.

3.4. Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to SRTA for a decision before proceeding.

3.5. Minimum Quantity or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to SRTA for a decision before proceeding.

3.6. Copies of Standards: Each entity engaged in construction on the Work is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

3.7. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

4. DEFINITIONS

4.1. General: Words and abbreviations used in the Specifications are given meaning as defined in “The American Heritage Dictionary of the English Language” and as commonly used and accepted in the construction industry. Abbreviations and symbols used on Drawings are identified on Drawings.

4.2. Words and Terms: The following words and terms used in the Specifications shall mean as indicated.

1. Approved Equal: Reviewed and approved by SRTA as being equal in quality, utility, and appearance. Words and terms “or Approved Equal” and “or Equal” used in the

Specifications shall have the same meaning as “Accepted Equal.”

2. Contractor Shall: To be concise; sentences, statements, and clauses used in the Specifications that exclude any form of the verb “shall”, which is normally expressed in a verb phrase with verbs such as “furnish”, “install”, “provide”, “perform”, “construct”, “erect”, “comply”, “apply”, “submit”, etc. Any such sentences, statements, and clauses are to be interpreted to include applicable form of phrase “Contractor shall”.
3. Furnish: Supply and deliver to Work Site, ready for installation; unload and inspect for damage.
4. Install: Anchor, fasten, or connect in place and adjust for use; place or apply in proper position and location; establish in place for use or service including all necessary labor, tools, equipment, and implements necessary to perform work indicated, ready for operation or use.
5. Observe: Used in reference to Project Architect’s means to become familiar with the process and quality of the Work and to determine if the Work is proceeding in general accordance with the Contract Documents based on what is plainly visible at the construction site, without removal of its materials or other construction that is in place.
6. Products: New material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work.
7. Provide: Furnish and install all items necessary to complete work, ready for operation or use.
8. “Indicated” refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.
9. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by SRTA", "requested by SRTA", and similar phrases. However, no implied meaning shall be interpreted to extend SRTA's responsibility into the Contractor's area of construction supervision.
10. Approve: The term "approved," where used in conjunction with SRTA's action on the Contractor's submittals, applications, and requests, is limited to the duties and responsibilities of SRTA as stated in General and Supplementary Conditions. Such approval shall not release the Contractor from responsibility to fulfill Contract requirements unless otherwise provided in the Contract Documents.
11. Regulation: The term "Regulation” includes laws, ordinances, statutes, regulations, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work, whether lawfully imposed by authorities having

jurisdiction or not.

12. Unless otherwise indicated, the term "experienced," when used with the term "Installer" means having a minimum of five (5) previous projects similar in size and scope to this Work, being familiar with the precautions required, and having complied with requirements of the authority having jurisdiction.

13. “Work Site” is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other construction activities as part of the Work.

14. Installer: An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

15. Demolish: Unless otherwise indicated, to demolish an item indicates that the Contractor shall take apart, remove and dispose of the subsequent materials. "Demo" shall mean the same as demolish.

5. SPECIFICATION FORMAT AND CONTENT EXPLANATION

5.1. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 48 Division format and Master Format numbering system.

5.2. Specification Content: This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.

2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.

a. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.

5.3. Assignment of Specialists: The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

1. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
2. Trades: Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

6. CODES, REGULATIONS AND GOVERNING AGENCIES

6.1. California Code of Regulations (CCR).

1. Title 8, Division 1, Chapter 3.2 – California Occupational Safety and Health Regulations (Cal/OSHA).
2. Title 8, Division 1, Chapter 4, Subchapter 4 – Construction Safety Orders.
3. Title 8, Division 1, Chapter 4, Subchapter 6 – Elevator Safety Orders
4. Title 19, Division 1 – Regulations of the State Fire Marshal (SFM).
5. Title 24 – California Building Standards Code (CBSC).
   a. Part 1 – California Administrative Code (CAC).
   b. Part 2 – California Building Code (CBC).
   c. Part 3 – California Electrical Code (CEC).
   d. Part 4 – California Mechanical Code (CMC).
   e. Part 5 – California Plumbing Code (CPC).
   f. Part 6 – California Energy Code.
   g. Part 7 – California Elevator Safety Construction Code.
   h. Part 8 – California Historical Building Code.
   i. Part 9 – California Fire Code.
   j. Part 10 – California Existing Building Code.
   k. Part 11 – California Green Building Standards Code.
   l. Part 12 – California Referenced Standards Code.

6.2. California Department of Transportation (Caltrans).

6.3. California Department of General Services (DGS).

6.4. California Environmental Protection Agency (Cal/EPA).

1. California Air Resources Board (ARB).
2. California State Water Resources Control Board (SWRCB).
3. Department of Pesticide Regulation (DPR).

6.5. Code of Federal Regulations (CFR) Title 28, Part 36 – ADA Standards for Accessible Design, Appendix A – ADA Accessibility Guidelines (ADAAG) for Buildings and Facilities.

6.6. Occupational Safety and Health Act (OSHA).

6.7. U.S. Environmental Protection Agency (EPA).

6.8. U.S. Department of Energy (DOE).

7. REFERENCES, ABBREVIATIONS AND ACRONYMS

AA	Aluminum Association.
AAADM	American Association of Automatic Door Manufacturers.
AABC	Associated Air Balance Council.
AAC	Aluminum Anodizers Council.
AAMA	American Architectural Manufacturers Association.
AASHTO	American Association of State Highway and Transportation Officials.
AATCC	American Association of Textile Chemists and Colorists.
ABMA	American Boiler Manufacturer's Association.
ACGIH	American Conference of Government Industrial Hygienists, Inc.
ACI	American Concrete Institute.
ACPA	American Concrete Pipe Association.
AF&PA	American Forest and Paper Association (formerly National Forest Products Association).
AFBMA	Anti-Friction Bearing Manufacturer's Association.
AGA	American Gas Association.
AGC	Associated General Contractors of America.
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association.
AHJ	Authority Having Jurisdiction.
AI	Asphalt Institute.
AIA	American Institute of Architects.
AIEE	American Institute of Electrical Engineers.
AIHA	American Industrial Hygiene Association.
AISC	American Institute of Steel Construction.
AISI	American Iron and Steel Institute.
AITC	American Institute of Timber Construction.
ALSC	American Lumber Standards Committee.

AMCA	Air Movement and Control Association.
ANSI	American National Standards Institute, Inc.
APA	The Engineered Wood Association.
API	American Petroleum Institute.
APWA	American Public Works Association.
AQMD	Air Quality Management District.
ARI	Air-Conditioning and Refrigeration Institute.
ARMA	Asphalt Roofing Manufacturers Association.
ASCE	American Society of Civil Engineers.
ASD	Advanced Simulation and Design.
ASHRAE	American Society of Heating Refrigerating and Air Conditioning Engineers.
ASME	American Society of Mechanical Engineers.
ASPA	American Sod Producers Association.
ASSE	American Society of Sanitary Engineers.
ASTM	American Society for Testing and Materials.
ATF	Academy of Textiles and Flooring.
AWC	American Wood Council.
AWCI	Association of Wall and Ceiling Industries.
AWG	American Wire Gage.
AWI	Architectural Woodwork Institute.
AWPA	American Wood Protection Association.
AWS	American Welding Society.
AWWA	American Water Works Association.
BAAQMD	Bay Area Air Quality Management District
BHMA	Builders Hardware Manufacturers Association.
BIA	Brick Industry Association.
BOCA	Building Officials and Code Administrators International, Inc.
CAN/ULC	Underwriters' Laboratory of Canada.
CAS	Chemical Abstracts Service (division of the American Chemical Society).
CBC	California Building Code
CBM	Certified Ballast Manufacturers.
CCR	California Code of Regulations

CDA	Copper Development Association.
CE	US Army Corps of Engineers
CFFA	Chemical Fabrics and Film Association, Inc.
CFR	Code of Federal Regulations
CISCA	Ceiling and Interior Systems Construction Association.
CISPI	Cast Iron Soil Pipe Institute.
CLFMI	Chain Link Fence Manufacturing Institute.
CPA	Composite Panel Association.
CRA	California Redwood Association.
CRI	Carpet and Rug Institute.
CRSI	Concrete Reinforcing Steel Institute.
CS	Commercial Standard.
CSI	Construction Specifications Institute.
CSIAC	California State Industrial Accident Commission.
DHI	Door Hardware Institute.
EIA	Electronic Industries Association.
EIMA	EIFS Industry Manufacturers Association.
ETL	Electrical Testing Laboratories.
EWS	Engineered Wood Systems
FEMA	Federal Emergency Management Agency.
FM	Factory Mutual Research and Engineering Corporation.
FMRC	Factory Mutual Research Corporation.
FS	Federal Specification – U.S. General Services Administration.
FSC	Forest Stewardship Council.
GA	Gypsum Association.
GANA	Glass Association of North America.
GMA	Flat Glass Marketing Association.
HPVA	Hardwood Plywood and Veneer Association.
IAPMO	International Association of Plumbing and Mechanical Officials.
ICC	International Code Council, Inc.
ICC	Interstate Commerce Commission.
ICC-ES	ICC Evaluation Service, Inc.

ICEA	Insulated Cable Engineers Association.
ICRI	International Concrete Repair Institute
IEEE	Institute of Electrical and Electronics Engineers.
IESNA	Illuminating Engineering Society of North America
IMIAC	International Masonry Industry All-Weather Council.
IPCEA	Insulated Power Cable Engineers Association.
ISO	International Standards Organization.
ITS	Intertek Testing Services.
LEED™	Leadership in Energy and Environmental Design (USGBC standard).
LRFD	Load and Resistance Factor Design.
LSGA	Laminators Safety Glass Association.
MBMA	Metal Building Manufacturers Association.
MFMA	Maple Flooring Manufacturers Association.
MFMA	Metal Framing Manufacturers Association.
MIA	Marble Institute of America
MIL	Military Specifications (U.S. Department of Defense).
ML/SFA	Metal Lath/Steel Framing Association Division of NAAMM.
MPI	Master Painters Institute.
MS4	Municipal Separate Storm Sewer Systems.
MSDS	Material Safety and Data Sheet.
MSJC	Masonry Standards Joint Committee.
MSMA	Metal Stud Manufacturers Association.
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry.
MUTCD	Manual of Uniform Traffic Control Devices (U.S. Department of Transportation).
NAAMM	National Association of Architectural Metal Manufacturers.
NAFS	North American Fenestration Standard (Co-published by AAMA & WDMA).
NAPHCC	National Association of Plumbing Heating Cooling Contractors.
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors.
NBFU	National Board of Fire Underwriters.
NBGQA	National Building Granite Quarries Association, Inc.
NCMA	National Concrete Masonry Association.

NCPWB	National Certified Pipe Welding Bureau.
NCRP	National Council on Radiation Protection and Measurement.
NEBB	National Environmental Balancing Bureau.
NEC	National Electrical Code.
NEHRP	National Earthquake Hazards Reduction Program.
NEMA	National Electrical Manufacturers Association.
NES	National Evaluation Service, Inc.
NFPA	National Fire Protection Association.
NFRC	National Fenestration Rating Council.
NIBS	National Institute of Building Sciences.
NIST	National Institute of Science and Technology.
NOFMA	National Oak Flooring Manufacturers Association.
NPDES	National Pollutant Discharge Elimination System.
NRCA	National Roofing Contractors Association.
NRMCA	National Ready Mixed Concrete Association.
NSF	National Sanitation Foundation.
NTMA	National Terrazzo and Mosaic Association.
NWWDA	National Wood Window and Door Association.
OSHA	Occupational Safety and Health Act of 1970.
PCA	Portland Cement Association.
PCI	Precast Prestressed Concrete Institute.
PDI	Plumbing and Drainage Institute.
PEI	Porcelain Enamel Institute.
PS	Voluntary Product Standard (US Department of Commerce / NIST).
RCSC	Research Council on Structural Connections.
RIS	Redwood Inspection Service.
RMA	Rubber Manufacturers Association.
SC	Shading Coefficient.
SCAQMD	South Coast Air Quality Management District
SDI	Steel Deck Institute.
SDI	Steel Door Institute.
SFBC	South Florida Building Code.

SHGC	Solar Heat Gain Coefficient.
SIGMA	Sealed Insulating Glass Manufacturers Association.
SMACNA	Sheet Metal and Air Conditioning Contractors National Association.
SPRI	Single-Ply Roofing Institute.
SSMA	Steel Stud Manufacturers Association.
SSPC	The Society for Protective Coatings.
SWI	Steel Window Institute.
SWPPP	Storm Water Pollution Prevention Plan.
SWRI	Sealant, Waterproofing, and Restoration Institute.
TCA	Tile Council of America.
TEMA	Tubular Exchanger Manufacturers Association, Inc.
TMS	The Masonry Society.
TPI	Truss Plate Institute.
TRI	Tile Roofing Institute.
UL	Underwriters Laboratories, Inc.
ULC	Underwriters Laboratories of Canada.
USGBC	US Green Building Council.
VOC	Volatile Organic Compounds.
WCLIB	West Coast Lumber Inspection Bureau.
WDMA	Window and Door Manufacturers Association (formerly NWWDA National Wood Window and Door Association).
WDMA	Window and Door Manufacturers Association.
WH	Warnock Hersey.
WI	Woodwork Institute (formerly WIC – Woodwork Institute of California).
WSRCA	Western States Roofing Contractors Association.
WSFI	Wood and Synthetic Flooring Institute.
WWPA	Western Wood Products Association.

END OF SECTION 01 42 00

TEMPORARY BARRIERS, CLOSURES AND CONTROLS

SECTION 01 56 00

PART 1 – GENERAL

1. SECTION INCLUDES
   1.1. Temporary Utilities: Electricity, water and sanitary facilities.
   1.2. Construction Facilities: Vehicular access, parking, progress cleaning, and fire prevention facilities.
   1.3. Temporary Controls: Barriers, enclosures, security, water control, dust control, erosion control, noise control, and pollution control.
   1.4. Protection of Work.
   1.5. Removal of utilities, facilities, and controls
2. TEMPORARY ELECTRICITY
   2.1. 110V electrical service is available on site. Contractor shall provide generator power for use in excess of what is available in the Work Site.
3. TEMPORARY WATER
   3.1. Domestic water service is available on Site. Water in excess of that which can be conveniently be supplied by SRTA shall be supplied by the Contractor.
4. TEMPORARY SANITARY FACILITIES
   4.1. Provide and maintain required temporary facilities for use by construction personnel. Maintain daily in a sanitary and clean condition.
5. VEHICULAR ACCESS
   5.1. Limit access of construction equipment to designated areas.
   5.2. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.
   5.3. Provide unimpeded access for emergency vehicles.
   5.4. Provide and maintain access to fire hydrants and control valves free of obstructions.
6. PARKING
   6.1. Coordinate parking areas to accommodate construction personnel with SRTA.
7. PROGRESS CLEANING AND WASTE REMOVAL
   7.1. Maintain exterior areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
   7.2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other

closed or remote spaces prior to enclosing the space.

7.3. Remove waste materials, debris and rubbish from site daily and dispose off-site.

8. BARRIERS AND ENCLOSURES

8.1. Contractor shall provide and maintain temporary fencing or other barriers sufficient to prevent hazard to the public in the vicinity of the Work.

8.2. Provide security and facilities to protect Work and SRTA occupied areas affected by the Work from unauthorized entry, vandalism or theft.

8.3. Initiate program at mobilization. Maintain program throughout construction period.

9. WATER CONTROL

9.1. Grade site improvements to drain away from the building. Maintain excavations free of water.

9.2. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

10. DUST CONTROL

.1 Execute Work by methods to minimize raising dust from construction operations.

.2 Provide positive means to prevent air-borne dust from dispersing into atmosphere.

11. (NOT USED)

12. NOISE CONTROL

.1 Provide methods, means, and facilities to minimize noise produced by construction operations.

13. POLLUTION CONTROL

.1 Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

.2 Comply with pollution and environmental control requirements of authorities having jurisdiction.

14. PROTECTION OF INSTALLED WORK

.1 Protect installed Work and provide special protection where specified in individual specification Sections.

.2 Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.

.3 Provide protective coverings at walls, projections, jambs, sills and soffits of openings.

.4 Protect finished floors, stairs and other surfaces from traffic, dirt, wear, damage or movement of heavy objects, by protecting with durable sheet materials.

15. REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

.1 Remove temporary above-grade or buried utilities, equipment, facilities, and materials prior to Completion of the Work.

.2 Clean and repair damage caused by installation or use of temporary work.

.3 Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 56 00

PRODUCT REQUIREMENTS

SECTION 01 60 00

PART 1 – GENERAL

1.1. SECTION INCLUDES

1.1.1. Products.

1.1.2. Product Delivery Requirements.

1.1.3. Product Storage and Handling Requirements.

1.2. PRODUCTS

1.2.1. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.

1.2.2. All products shall be new, of first class quality, and shall be delivered, installed, connected and finished in every detail, and shall be so selected and arranged as to fit correctly into the proper spaces. Where no specific kind or quality of material is given, a first-class standard article as approved by SRTA shall be furnished. Contractor shall provide satisfactory evidence as to the kinds and quality of material and workmanship.

1.2.3. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

1.2.4. Furnish interchangeable components from same manufacturer for components being replaced.

1.3. PRODUCT DELIVERY REQUIREMENTS

1.3.1. Transport and handle products in accordance with manufacturer's instructions.

1.3.2. Delivery of materials to the Project site shall be coordinated by and received by Contractor or his representative, and stored in secured areas as agreed upon at the job start meeting.

1.3.3. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.

1.3.4. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.3.5. Contractor shall take into consideration the available space and location of work site when delivery of materials is necessary.

1.4. PRODUCT STORAGE AND HANDLING REQUIREMENTS

1.4.1. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

1.4.2. For exterior storage of fabricated products, place on sloped supports above ground.

1.4.3. Provide off-site storage and protection when site does not permit on-site storage or protection.

1.4.4. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation and degradation of products.

1.4.5. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

1.4.6. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

1.4.7. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.4.8. Contractor shall be responsible to provide all new materials in unopened manufacturer's original containers and deliver such items to Project site in good condition for use on this project. Contractor shall be responsible to store all new materials received as per manufacturer recommendations. Any and all materials discovered to be improperly stored and/or damaged will be replaced at the sole expense to Contractor. Any requests for delays or extension of the Contract Time due to the above will not be considered.

1.4.9. Contractor shall use all means necessary to protect all materials before, during and after installation and to protect the installed work and materials of all other trades and of existing structures. In event of damage, Contractor is to immediately make all repairs and replacements necessary using compatible and like materials.

PART 2 - PRODUCTS

2. MATERIALS

2.1. Materials furnished shall be new and never been used before, unless specified otherwise, and will satisfy the requirements herein and all specifications referenced by provisions within these specifications. Contractor shall furnish, upon request of SRTA, an affidavit from the manufacturer or supplier to the effect that materials furnished shall conform to the General Conditions, the latest revision of AWWA Specifications, ASTM, and Federal Specifications that pertain. All materials shall be installed in accordance with manufacturer's recommendations and the Standard Drawings and Specifications that pertain. Material for one specific product shall be one manufacturer unless otherwise approved by SRTA. All materials shall be subject to inspection after delivery to the site and during installation of the Work. Failure of SRTA or Project Architect to note faulty material shall not relieve Contractor of the responsibility for

removing or replacing any such material at no additional cost to SRTA.

2.2. For the ease of maintenance and parts replacement, to the maximum extent possible, use materials of a single manufacturer, delivered in manufacturer's original, unopened containers with labels intact and legible, and in sufficient quantity to allow continuity of work. Deviation from this requirement shall require written approval from SRTA.

2.3. SRTA reserves the right to reject any materials list which contains materials from various manufacturers if suitable materials can be secured from fewer manufacturers and to require that source of materials be unified to maximum extent possible.

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 60 00

CUTTING AND PATCHING

SECTION 01 73 29

PART 1 – GENERAL

1.1. DESCRIPTION

A. This Section describes the requirements for performing cutting and patching; patching includes the insertion or projection of other products in or from a surface.

1.2. QUALITY ASSURANCE

A. Design Criteria:

1. Patching shall achieve security, strength, and weather protection, as applicable, and shall preserve continuity of existing fire ratings.

2. Patching shall successfully duplicate undisturbed adjacent finishes, especially in performance, colors, textures, and profiles. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the Architect's judgment shall be final.

1.3. COORDINATION AND PROTECTION

A. Contractor shall protect from damage all portions of the Work or work of SRTA or separate contractors adjacent to cutting or patching operations, including excavation.

B. Contractor shall obtain written permission prior to commencing cutting, patching or excavation operations on the work of SRTA or any separate contractors.

C. Contractor shall protect adjacent occupied spaces from damage during concrete cutting and coring.

D. Contractor shall maintain the security and weather protection of facility at all times.

E. Contractor shall, when requested in writing, allow SRTA or any separate contractor to perform reasonable cutting, patching or excavation operation on the Work.

1.4. SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, Contractor shall submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform the Work.
4. Indicate dates when cutting and patching is to be performed.
5. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
6. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
7. Approval by SRTA to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

PART 2 – PRODUCTS

2.1. MATERIALS

A. Materials shall be as specified in the applicable, individual Sections of the Specifications and as required to match existing construction. Contractor shall use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect after consulting with the Architect. Contractor shall use materials whose installed performance will equal or surpass that of existing materials.

PART 3 – EXECUTION

3.1. GENERAL

A. Contractor shall perform cutting associated with structural reinforcing, and patching in a manner to prevent damage to other Work and to provide proper surfaces for the installation of materials, equipment, and repairs.
B. Contractor shall not cut or alter structural members without prior consultation with the Architect.
C. Wherever practicable, Contractor shall employ original installer or fabricator providing Work under this Contract to perform cutting and patching for new:
   1. Weather-exposed and moisture-resistant products.
   2. Finished surfaces exposed to view.
D. Contractor shall adjust and fit products to provide a neat installation.
E. Contractor shall finish or refinish, as required, cut and patched surfaces to match adjacent finishes. Paint over complete surface plane, unless otherwise indicated. Over patched wall or ceiling surfaces, paint to nearest cutoff line for entire surface,

such as intersection with adjacent wall or ceiling, beam or pilasters or to nearest opening frame, unless otherwise indicated. Painted surfaces shall not present a spotty, touched-up appearance.

3.2. INSPECTION

A. Before cutting existing surfaces, Contractor shall examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

1. Before proceeding, Contractor shall meet at the Work Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.3. PREPARATION

A. Temporary Support: Contractor shall provide temporary support of Work to be cut.

B. Protection: Contractor shall protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Work that might be exposed during cutting and patching operations.

C. Contractor shall avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Contractor shall take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.4. PERFORMANCE

A. General: Contractor shall employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required restoring surfaces to their original condition.

B. Cutting: Contractor shall cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. To avoid marring existing finished surfaces cut or drill from the exposed or finished side into concealed surfaces.
3. Cut through concrete and masonry using a cutting machine such as a Carborundum saw or diamond core drill.
4. Contractor shall by pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or

abandoned. Cut off pipes or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by passing and cutting.

C. Patching: Contractor shall patch with durable seams that are as invisible as possible. Comply with specified tolerances.
   1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
   2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   3. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
   4. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.
   5. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.5. CLEANING

A. Contractor shall thoroughly clean areas and spaces where cutting and patching is performed or used as access. Completely remove paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 01 73 29

SECTION 08 14 00

WOOD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Flush wood doors, rated and non-rated.

B. Door glazing.

1.2 REFERENCES

A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only. Refer to Section 01 42 00 “References” for definitions, acronyms, and abbreviations.

B. Unless otherwise noted, standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Project Manual.

C. Referenced Standards:

1. ANSI/WDMA I.S.1-A – Architectural Wood Flush Doors.
2. ASTM F152 – Standard Test Methods for Tension Testing of Nonmetallic Gasket Materials.
3. AWI Quality Standards for Wood Doors (AWI Section 1300 – Flush Wood Doors).
4. California Referenced Standard Code – SFM Standard 12-7-4, Fire Door Assembly Tests.
5. ITS Directory of Listed Products.
6. UL 10B – Fire Tests of Door Assemblies.
7. WI/AWI Architectural Woodwork Standards, including Supplemental Text.

1.3 SUBMITTALS

A. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, fire ratings, swings, undercuts required, special beveling, special blocking for hardware and identify cutouts for glazing and louvers.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics; factory machining criteria, factory finishing criteria.

C. Samples: Submit two samples of door veneer, 8” x 10” in size illustrating wood species, grain and color.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with WI, Section 9, Custom Grade.

1.5 REGULATORY REQUIREMENTS

A. Fire Door Construction: Conform to California State Fire Marshal Standard 12-7-4.

B. Fire-Rated Doors: All fire rated doors shall have metal labels (including “S” labels) permanently fastened to the hinge stile indicating the fire rating and Testing Agency name. Do not apply primer or finish over fire rating labels.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this Section.

1.7 DELIVERY, STORAGE AND HANDLING

A. Accept doors on site in manufacturer's packaging. Inspect for damage.

B. Comply with requirements in ANSI/WDMA I.S.1 A: How to store, handle, finish, install and maintain wood doors.

C. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

D. Store flat on a level surface in a dry, well-ventilated building. Cover to keep clean but allow air circulation.

E. Handle with clean gloves and do not drag doors across one another or across other surfaces.

F. Do not subject door to abnormal heat, dryness or humidity.

G. Deliver in clean trucks and, in wet weather, under cover.

1.8 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.9 COORDINATION

A. Coordinate the work with door opening construction, doorframe, door hardware, door glazing and door louver installation.

1.10 WARRANTY

A. Provide warranty to the following term:

1. Interior Solid Core Doors: Lifetime.

B. Include coverage for delamination of veneer, warping or twisting (not to exceed 1/4” in any face including diagonal) or other defects. Warranty shall cover replacement of door plus costs of hanging and finishing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Western Oregon Door, Inc.

B. Marshfield Door Systems

C. Mohawk Flush Doors, Inc.

D. VT Industries.

E. Graham.

F. Or accepted equal.

2.2 DOOR CONSTRUCTION

A. All doors shall be 1-3/4” thickness, unless noted otherwise.

B. Solid, non-rated particleboard core: WI Section 12, 5- or 7-ply; Custom Grade standards shall prevail.

C. Solid, 20-minute rated particleboard core: WI Section 12, 5- or 7-ply, Custom Grade.

D. Solid, 45-, 60- and 90-minute rated mineral core: WI Section 12. Stile edges shall be a minimum of 1” before trim on hinge side and 3/4” on lock side, including 1/4” outer edge band of hardwood.

E. Faces: Plain sliced, stain grade cherry veneer for custom finish to match existing wood doors. Use solid stock for exposed edges to match face veneer. Face veneers for pairs of doors shall be selected for color and grain match. Face veneers shall not be less than 1/50” at 12% MC after factory sanding. Crossbanding shall be hardwood, MDF will not be allowed as a veneer substrate (crossband). Thin veneers are not acceptable.

F. Top and bottom rails shall be a minimum of 2-1/4” before trimming, mill option species solid lumber for 20 minute rated and non-rated doors.

G. Provide solid firestop blocking on fire-rated doors with surface mounted hardware or closers, for attachment with screws in lieu of through-bolts.

H. Fire Resistive Doors with 20 minute Fire Rating (positive pressure): Construction shall have fire rating of not less than 20 minutes when tested in accordance with SFM Standard 12-7-4.

I. Fire Resistive Doors with 3/4 Hour or Longer Fire Ratings (positive pressure): Meet requirements of SFM Standard 12-7-4, UL 10 (b)-80 and ASTM F152 for fire rating noted.

2.3 ADHESIVE

A. Facing Adhesive: Type I – waterproof.

2.4 ACCESSORIES

A. Glass Glazing: Comply with wood door manufacturer's written instructions.

B. Glazing Stops: Anemostat Model LoPro, Air Louver, or accepted equal. Factory primed, galvanized steel; mitered corners; prepared for countersink style screws. Sizes as indicated on the Drawings. Install glazing stop fasteners on the non-secure side of doors. Finish in custom color as selected by Architect

1. At fire-rated doors, fire-rating of glazing stops shall match door fire-rating.

2.5 FABRICATION

A. Fabricate non-rated doors in accordance with WI/AWI Architectural Woodwork Standards requirements.

B. Provide blocking at top of door for closer for attachment with screws.

C. Bond edge banding to cores.

D. Factory machine doors for finish hardware in accordance with hardware requirements and dimensions. Do not machine for surface hardware.

E. Glass Cutouts: Provide cutouts for glass of size and shape indicated.

F. Louver Cutouts: Provide cutouts for louvers of size and shape indicated.

G. Factory seal top and bottom rails before shipment.

H. Bevel both stiles 1/8” in 2” (3° bevel) and undersize doors 1/4” in width so that they swing freely and do not hinge bind.

2.6 FINISH

A. All doors shall be factory pre-finished, equal to WI Section 5, System #3, or accepted equal. Transparent finish, stain color and tone as selected by Architect and accepted on submitted sample. Apply seal coat at all edges of doors prior to final installation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify frame opening conditions.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.2 INSTALLATION

A. Install rated and non-rated doors in accordance with WI Section 12 requirements, SFM Standard 12-7-4, and UL or Intertek Testing Services (ITS) requirements.

B. Where required, trim non-rated door width by cutting equally on both jamb edges.

C. Where required, trim door height by cutting bottom edge to a maximum of 3/4” above finished floor or threshold.

D. Pilot drill screw and bolt holes.

E. Machine cut for hardware. Core for handsets and cylinders.

F. Coordinate installation of doors with installation of frames specified in Section 08 11 13 “Hollow Metal Doors and Frames”, hardware specified in Section 08 71 00 “Door Hardware”, glazing as specified in Section 08 81 00 “Glass Glazing”, and louvers as specified in this Section.

3.3 INSTALLATION TOLERANCES

A. Maximum Diagonal Distortion (Warp): 1/4” measured with straight edge or taught string, corner to corner, over an imaginary 36” x 84” surface area.

B. Maximum Vertical Distortion (Bow): 1/4” measured with straight edge or taught string, top to bottom, over an imaginary 36” x 84” surface area.

3.4 ADJUSTING

A. Adjust door for smooth and balanced door movement, and wipe clean.

END OF SECTION

GLAZING

SECTION 08 80 00

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provide miscellaneous glass and glazing for hollow metal work, windows and doors not provided elsewhere including accessories as required for complete installation.

1.2 REFERENCES

A. Glass Association of North America (GANA): Glazing Manual and Sealant Manual.

1.3 SYSTEM DESCRIPTION

A. Safety Glass Standard: CPSC 16 CFR 1201, ANSI Z97.1, and California Building Code Chapter 24.

1.4 SUBMITTALS

A. All submittals shall be submitted under the provisions of Section 01 33 00.

B. Product Data: Furnish for each type of glass, and each type of exposed glazing material.

1.5 WARRANTY

A. Special Warranties

1. Special Warranty Period: Two years.

PART 2 – PRODUCTS

2.1 GLAZING MATERIALS

A. Tempered Safety Glass: Select glazing quality, clear float glass, fully tempered, ASTM C1048, Kind FT; nominal thickness 1/4"; safety glass.

1. Manufacturers:

a. Ford Glass Division.
b. PPG Industries, Inc.
c. Substitutions: Refer to Section 01 25 13

2. Locations: Provide at doors and at window openings where indicated on drawings and required by applicable codes and federal requirements.

B. Fire Rated Glazing: ¼" wire glass, 45 minute rating.

1. Wirelite NT or accepted equal.

C. Frameless Mirrors: ASTM C1036, Mirror quality q1 or q2, clear float glass; 1/4" thick; full silver coating, copper coating and organic coating; arrised edges; factory treated and sealed after cutting and finishing.

1. Manufacturers:

a. Binswanger Mirror Products, Memphis, TN.
b. Downey Glass Co., Los Angeles, CA.
c. General manufacturers listed.
d. Substitutions: Refer to Section 01 25 13.

2. Mirror Attachment:

a. Bottom Supports: Stainless steel angles, minimum 0.05" thickness; provide felt pads for setting mirrors on angles; provide concealed fasteners.

b. Adhesive: Nontoxic type as recommended by mirror manufacturer.

D. Glazing Sealant: ASTM C920, Type S, Grade NS, elastomeric one-component silicone glazing sealants as recommended by sealant manufacturer for application involved.

1. Manufacturers:

a. Dow Corning Corp.
b. General Electric Co.
c. Pecora Corp.
d. Substitutions: Refer to Section 01 25 13.

2. Color: As selected by Architect from manufacturer's full range of available colors.

E. Setting Blocks: 70-90 durometer hardness; 4" long by 3/8" thick by 1/4" high standard setting blocks.

F. Spacer Shims: Silicone compatible, 50 durometer hardness; 3" long by 3/32" thick by 1/4" high.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean glazing channels and framing members to receive glass immediately before glazing; remove coatings not firmly bonded to substrate.

B. Apply primer to joint surfaces where recommended by sealant manufacturer.

3.2 INSTALLATION

A. Comply with GANA Glazing Manual and Sealant Manual and glazing manufacturer instructions.

1. Do not allow glass to touch metal surfaces.

2. Comply with NFPA 80 for glass in fire rated openings.

B. Place setting blocks at quarter points in thin course of sealant.

C. Install removable stops with glass centered in space with spacer shims at 2'-0" intervals on both sides of glass, 1/4" below sightline.

D. Sealant at Glazing: Fill gap between glass and stops with sealant to depth equal to bite of frame on glass but not more than 3/8" below sightline.

1. Apply sealant to uniform and level line, flush with sightline; tool or wipe sealant surface for smooth appearance; at exterior locations tool sealant so water is carried away from glass.

3.3 CLEANING

A. Mark glass after installation by crossed streamers attached to framing and held away from glass; do not apply markers to surface of glass.

B. Remove nonpermanent labels immediately after sealant cures; cure sealants for high early strength and durability.

C. Remove and replace glass that is broken, chipped, cracked, abraded or damaged during construction period, including natural causes, accidents and vandalism.

END OF SECTION

GYPSUM BOARD ASSEMBLIES

SECTION 09 21 16

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Provide gypsum board systems including gypsum board, joint treatment, acoustical accessories, and general accessories for complete installation.

1.2 REFERENCES

A. ASTM C754: Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wallboard.

B. ASTM C840: Application and Finishing of Gypsum Board.

1.3 SYSTEM DESCRIPTION

A. Performance Requirements: Perform gypsum board systems work in accordance with recommendations of ASTM C754 and ASTM C840 unless otherwise specified.

1. Loads: Comply with California Building Code requirements for design of metal framing for gypsum board systems.

a. Deflection: Maximum L/240 typical, L/360 where plaster or tile is indicated.

2. Seismic Requirements: Comply with code requirements for seismic bracing.

B. Systems Responsibility: Provide products manufactured by or recommended by manufacturer of gypsum board to maintain single-source responsibility for system.

C. Openings: Obtain dimensions and locations from other trades and provide openings and enclosures for accessories, specialties, equipment, and ductwork.

1.4 SUBMITTALS

All submittals shall be made under the provisions of Section 01 33 00.

A. Product Data

1. Provide product data on metal framing, gypsum board, joint tape, and decorative finish.

2. Furnish manufacturer's certification indicating products comply with Contract Documents and applicable codes.

1.5 PROJECT CONDITIONS

A. Do not begin installation of interior gypsum board until space is enclosed, space is not exposed to other sources of water, and space is free of standing water.

B. Maintain areas to receive gypsum board at minimum 50 degree F for 48 hours prior to application and continuously after application until drying of joint compound is complete; comply with ASTM C840.

C. Immediately remove from site gypsum board for interior use exposed to water, including gypsum board with water stains, with signs of mold, and gypsum board with mildew.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. United States Gypsum Co., USG Corp.

B. Georgia-Pacific Corp.

C. National Gypsum Co.

D. Or accepted equal.

2.2 MATERIALS

A. Gypsum Board - Standard

1. ASTM C1396, TYPE X, FIRE RATED, 5/8” thick paper faced gypsum panels with tapered edges.

B. Moisture Resistant Gypsum Board

1. Equal to Georgia Pacific Corp. “Dens-Armor Plus High Performance” 5/8” thick fiberglass faced, treated gypsum panels with tapered edges. Fire rated Type X.

C. Gypsum Board Accessories: Comply with ASTM C840.

1. Gypsum board sealer: Provide one Coat "Hamilton Prep Coat Plus" prior to application of gypsum board texture.

2. Provide protective coated steel corner beads and edge trim; type designed to be concealed in finished construction by tape and joint compound.

3. Corner Beads: Manufacturer's standard metal beads.

4. Edge Trim: “J”, "L", "LK", or "LC" casing beads – manufacturer’s standard.

5. Reinforcing Tape, Joint Compound, Adhesive, Water, Fasteners: Types recommended by system manufacturer and conforming to ASTM C475.

    a. Typical Joint Compound: Chemical hardening type for bedding and filling, ready-mixed or powder vinyl type for topping.

6. Control Joints: Back to back casing beads.

    a. Back control joints with 4 mil thick polyethylene air seal.

7. Reveals: Extruded aluminum special trim pieces in manufacturer's standard or custom shapes to conform to configurations and dimensions indicated.

    a. Manufactures:

        1) Fry Reglet Corp./Drywall Moldings.
        2) MM Systems Corp./Drywall Moldings.
        3) Gordon Inc./Final Forms I Drywall Trims.
        4) Substitutions: Refer to Section 01 62 00.

D. Gypsum Board Texture: Equal to USG “Sheetrock Brand” ready mixed wall and ceiling spray texture.

E. Acoustic Sealant: Serious Energy “Quiet Seal Pro”, non-hardening, gun grade sealant per ASTM C834.

F. Electrical Box Pads: Provide at outlet, switch and telephone boxes in all walls.

PART 3 - EXECUTION

A. Gypsum Board Installation: Install in accordance with ASTM C840 and manufacturer's recommendations.

1. Use screws when fastening gypsum board to furring and to framing.

2. Erect gypsum board with ends and edges occurring over firm bearing.

    a. Ensure joints of second layer do not occur over joints of first layer in double layer applications.

3. Place control joints to be consistent with lines of building spaces and as directed by Architect.

    a. Provide where system abuts structural elements.
    b. Provide at dissimilar materials.
    c. Lengths exceeding 30'-0" in partitions.
    d. Ceiling areas exceeding 50'-0" or 2500 square feet.
    e. Wings of "L", "U" and "T" shaped ceilings.

4. Place corner beads at external corners; use longest practical lengths.

5. Place edge trim where gypsum board abuts dissimilar materials.

6. Tape, fill, and sand exposed joints, edges, corners and openings to produce surface ready to receive finishes; feather coats onto adjoining surfaces.

7. Finishing: Comply with Gypsum Association (GA) “Levels of Gypsum Board Finish”.

    a. GA Level 4 (Typical): Provide three coat finishing and sanding is required for surfaces indicated to be painted; provide flush, smooth joints and surfaces ready for applied paint finishes.
    b. Texture: Light orange peel.

8. Remove and replace defective work.

END OF SECTION

NON-STRUCTURAL METAL FRAMING

SECTION 09 22 16

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Section includes metal stud framing and accessories.

1.2 REFERENCES

A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only.

B. Unless otherwise noted, standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Project Manual.

C. Referenced Standards:

1. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A924/A924M – Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
3. ASTM C645 – Standard Specification for Nonstructural Steel Framing Members.
4. ASTM C754 – Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
5. ASTM C1513 – Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
6. SSPC Paint 20 – Zinc Rich Primers.

1.3 SYSTEM DESCRIPTION

A. Interior Walls: Metal stud framing system with batt type acoustic insulation and interior gypsum board

B. Maximum Allowable Deflection:

1. 1:120 span at gypsum board finish.
2. 1:240 span ceramic tile finishes.

C. Wall and Ceiling Systems:

1. Design to provide for movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.

1.4 SUBMITTALS

A. Shop Drawings:
   1. Indicate component details, stud layout, framed openings, anchorage to structure, type and location of fasteners and accessories or items required of other related work.
   2. Describe method for securing studs to tracks, splicing and for blocking and reinforcement to framing connections.

B. Product Data: Submit data describing standard framing member materials and finish, product criteria, load charts and limitations.

C. Manufacturer's Installation Instructions: Submit special procedures, perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C754.

B. Comply with 2010 CBC, Chapter 22A, Section 2210A.

C. Form, fabricate, install, and connect components in accordance with ML/SFA 540.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section.

B. Installer: Company specializing in performing Work of this Section.

PART 2 PRODUCTS

2.1 METAL FRAMING SYSTEM

A. Manufacturers:
   1. Clark/Western Building Systems
   2. Dietrich Industries, Inc.
   3. Marino/Ware
   4. CEMCO
   5. Or accepted equal.

2.2 COMPONENTS

A. Framing System Components: ASTM C645.
   1. 16 Gauge and heavier, F_y = 50 ksi
   2. 18 Gauge and lighter, F_y = 33 ksi Minimum.

B. Studs and Joists: ASTM A653/A653M non-load bearing rolled steel, channel shaped, punched for utility access, depths and gauges and spacing as indicated on the drawings.

C. Tracks and Headers: Same material and thickness as studs, bent leg retainer notched to receive studs. Ceiling Runners: With extended leg retainer.

D. Slotted Track: Slotted track system for positive attachment of metal studs to track, for Head of Wall expansion joint movement (cyclic) and static Joint System in fire-rated construction, as detailed and required on Drawings, in compliance with UL 2079 cyclical movement ± 1/2 inch overall 1" movement: Slp-Trk as manufactured by Dietrich Industries, Inc.

1. Forming Steel shall conform to ASTM A653, Grade 33 with a minimum yield point of 33,000 psi.
2. Formed Steel shall be galvanized in accordance with ASTM A924 for a Class G60 by the hot dip process.
3. Slotted track shall be provided in standard widths and gauges, as required and indicated on Drawings. Down standing legs shall be nominally 2-1/2" and shall be provided with 1-1/2" slots at 1" on center.
4. Fasteners:
    a. For attachment of studs to slotted track, minimum No. 8 corrosion resistant by 1/2 inch waferhead screws.
    b. For attachment of Slotted Track to overhead structural element, as provided for the structural details affecting the work.

E. Furring and Bracing Members: Minimum 18 gauge steel in sizes and shapes as indicated on Drawings and to suit application..

F. Fasteners: ASTM C1513, self-drilling, self-tapping corrosion resistant screws.

G. Sheet Metal Backing: 16 gauge.

H. Anchorage Devices: As indicated on the drawings.

I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type II Organic zinc rich.

PART 3 EXECUTION

3.1 EXAMINATION

A. Coordination and project conditions.

B. Verify rough-in utilities are in proper location.

3.2 INSTALLATION

A. Align and secure top and bottom runners as indicated on Drawings.

B. Place two beads of acoustic sealant between runners and substrate, studs and adjacent construction, to achieve acoustic seal.

C. Place two beads of acoustic sealant between studs and adjacent vertical surfaces to achieve acoustic seal.

D. Framing at openings shall be as shown on Drawings. Install intermediate studs at same spacing as wall studs.

E. Install studs vertically at 16” unless otherwise noted on drawings.

F. Install joists horizontally at 16” unless otherwise noted on drawings.

G. Align stud web openings horizontally.

H. Secure studs to tracks as indicated on Drawings.

I. Stud splicing not permissible.

J. Fabricate corners using minimum of three studs.

K. Double stud at wall openings and door and window jambs, not more than 2” from each side of openings.

L. Brace stud framing system rigid.

M. Coordinate erection of studs with requirements of door frames and window frames; install supports and attachments.

N. Backing/Blocking: Shall be provided for all wall and ceiling finishes and for the supporting and anchorage of products, fixtures and equipment for all trades, including, but not limited to, toilet partitions, toilet room accessories, casework, mirrors, trim, applied wall finishes, artwork, wall bumpers, downspout straps, plumbing and electrical fixtures, etc. Coordinate size, type and location of backing and supports with manufacturer or supplier of items requiring backing/blocking.

O. Refer to Drawings for indication of partitions extending stud framing through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Install extended leg ceiling runners.

P. Coordinate placement of insulation in stud spaces after stud frame erection.

3.3 ERECTION TOLERANCES

A. Maximum Variation From Indicated Position: 1/8” in 10’ (non-cumulative).

B. Maximum Variation From Plumb: 1/8” in 10’ (non-cumulative).

END OF SECTION

ACOUSTIC CEILINGS

SECTION 09 51 13

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Provide acoustical ceiling systems with exposed suspended metal grid system, trim, and accessories as required for complete finished installation.

1.2 SYSTEM DESCRIPTION

A. Seismic Design Requirements: Comply with California Building Code requirements for seismic bracing of ceiling suspension system, and with ASTM E580.

1. Ceiling Struts: Provide struts as detailed on Drawings and as required by code, placed maximum 12'-0" on center in both directions and within 6'-0" of each wall.

2. Slack Wires: Provide safety slack wires, two per fluorescent fixture on diagonally opposite corners and a single wire for each recessed down light.

B. Fire Performance Characteristics: Provide products listed by Underwriters Laboratories (UL) or other independent testing laboratory acceptable to applicable authorities.

1. Flame Spread/Smoke Density: Provide products meeting code requirements for maximum 25 flame spread and maximum 25 smoke density.

1.3 REFERENCES

A. ASTM C635: Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM C636: Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

C. ASTM E580: Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.

1.4 SUBMITTALS

A. Product Data: Furnish manufacturers' literature.

B. Shop Drawings: Clearly indicate grid layout and related dimensioning, junctions with other work and ceiling finishes, and inter-relation of mechanical and electrical items related to system.

C. Samples: Furnish samples of exposed grid finish and each type of ceiling unit.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Firm with minimum three years successful experience in projects of similar type and scope; acceptable to manufacturer of acoustical units.

1.6 SITE CONDITIONS

A. Do not install ceilings until building is enclosed, sufficient heat is provided, dust-generating activities have terminated and overhead mechanical work is completed, tested and approved.

1. Do not allow acoustical ceiling units to be exposed to moisture; immediately remove acoustical ceiling units with stains, units with signs of mold, and units with mildew.

B. Allow wet work to dry prior to commencement of installation.

C. Maintain uniform temperatures of minimum 60 degrees F and humidity of 20% to 40% prior to, during and after installation.

1.7 EXTRA STOCK

A. Provide 3% cartons of extra tile of each type used for the Owners maintenance use at no additional cost

PART 2 - PRODUCTS

2.1 MATERIALS

A. Suspension System: Comply with ASTM C635, as applicable to type of suspension system required for type of ceiling units indicated.

1. Manufacturers:

a. Armstrong World Industries, Inc.
b. Chicago Metallic Corp.
c. USG, Interiors, Inc./Donn.
d. Substitutions: Refer to Section 01 25 13.

2. Exposed Grid System: Narrow, 9/16” nominal face width, direct hung aluminum or steel ‘T’ exposed grid system.

3. Attachment Devices: Size for 5 times design load indicated in ASTM C635, Table 1, Direct Hung.

4. Hanger Wires: 12 gauge.

5. Straps, Tubes and Angles: Provide galvanized steel as required to meet state and local requirements for seismic design loads.

6. Structural Class: intermediate-duty system, minimum.

7. Edge Molding: Manufacturer's standard angle molding for edges and penetrations of ceiling, with single flange of molding exposed.

8. Finish of Exposed Items: Match Armstrong, Blizzard White ZW.

9. Maximum Allowable Deflection: L/360.

B. Lay-In Panels: ASTM E1264 type and form as indicated on Drawings.

1. Manufacturers:

a. Armstrong World Industries, Inc.
b. USG Interiors, Inc.
c. Or accepted equal.

2. Typical Throughout Building where shown on drawings.

a. Typical Field Lay-In Panels: Armstrong-Cedges II. Flush Tegular, Color white. Or accepted equal.

b. Typical Lay-In Panels: Armstrong- Calla, Beveled Tedular, Color White. Or accepted equal.

c. Size: 2’-0” x 2’-0” x ¾”.

d. Finish: Standard washable white painted finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Furnish layouts for inserts, clips and other supports required to be installed by other trades for support of acoustical ceilings.

1. Install inserts, clips, and supports where not previously installed and where additional supports are required for complete installation.

B. Measure ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling; do not use less than half width units at borders.

C. Coordinate with other work supported by or penetrating through ceilings, including light fixtures, HVAC equipment and partition systems.

3.2 INSTALLATION

A. Installation of all suspended acoustical ceilings shall comply with installation requirements outlined in CBC (Title 24 Part 2), Chapter 25A.

B. Install acoustical ceiling systems in accordance with manufacturer's recommendations and ASTM C636.

1. Finished Ceilings: True to lines and levels and free from warped, soiled or damaged grid or acoustical units.

C. Install ceiling systems in a manner capable of supporting superimposed loads, with maximum permissible deflection of 1/8" in 10'-0".

D. Install after major above-ceiling work is complete; coordinate location of hangers with other work.

1. Ensure suspension system is located to accommodate fittings and units of equipment that is to be placed after installation of ceiling grid.

E. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest adjacent hangers and related carrying channels as required to span required distance.

F. Install ceiling suspension system to resist seismic loads as required by state and local codes, including extra hanger wires and compression supports for ceilings and light fixtures.

G. Hang system independently of walls, columns, ducts, pipes and conduit. Where suspension system members are spliced, avoid visible displacement of the longitudinal axis or face plane of adjacent members.

H. Do not support lighting fixtures from or on main runners or cross runners if weight of fixture causes total dead load to exceed deflection capability.

1. Support fixture loads independently or provide supplementary hangers located within 6" of each corner.

I. Do not install fixtures so main runners and cross runners are eccentrically loaded; where fixture installation would produce rotation of runners, provide stabilizer bars.

J. Install edge moldings at intersection of ceiling and vertical surfaces, using maximum lengths, straight, true to line and level; miter corners.

1. Provide edge moldings at junctions with other ceiling finishes.

K. Where required form expansion joints to accommodate movement and maintain visual closure without distorting system.

L. Fit acoustic units in place, free from damaged edges or defects detrimental to appearance and function.

1. Lay directionally patterned units one way with pattern as directed.

2. Fit border units neatly against abutting surfaces.

M. Install system level, in uniform plane and free from twist, warp and dents.

N. Install hold-down clips where required by applicable codes and where ceiling is within 20'-0" of an exterior door.

O. Adjustment: Adjust sags or twists that develop in ceiling system and replace any part that is damaged or faulty.

END OF SECTION

RESILIENT BASE

09 65 13

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Provide contoured resilient base, and accessories as required for complete installation.

1.2 SYSTEM DESCRIPTION

A. Performance Requirements: Provide materials tested under ASTM E648, Flooring Radiant Panel Test, with results of 0.45 watts/cm^2 or higher.

1.3 SUBMITTALS

A. Product Data: Furnish manufacturer's product literature.

B. Samples: Furnish samples of each base color and type.

1.4 PROJECT CONDITIONS

A. Maintain minimum 70 degree F air temperature at installation area for 3 days prior to, during, and for 24 hours after installation.

B. Store materials in area of application; allow three days for material to reach same temperature as area.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Resilient Base: Meeting performance requirements of ASTM F 1861 Standard Specification for Resilient Wall Base, Type TP Group 1.

1. Type: Extruded rubber.

2. Manufacturers:
   a. Johnsonite, Inc.
   b. Burke
   c. Or accepted equal.

3. Base:

   a. Johnsonite “Millwork Contoured Wall Base” profile: Outline – 5/16” thick x 3 ½” tall wall base.

   b. Provide base in 8 pieces.

   c. Pre-formed corners.

4. Colors: As selected by Architect from manufacturer's full range of available colors.

B. Primers and Adhesives: Water-resistant nontoxic types recommended by base manufacturer for specified material and application.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms and areas where base is required.

1. Fit joints tight and vertical; maintain minimum measurement of 18" between joints.

B. Miter internal corners; use molded sections for external corners and exposed ends.

C. Install base on solid backing, adhere tightly to wall and floor surfaces; fill voids along top edge of base with manufacturer's recommended adhesive filler.

D. Scribe and fit to door frames and other obstructions.

E. Install straight and level to variation of plus or minus 1/8" over 10'-0".

3.2 CLEAN-UP

A. Remove excess adhesive from floor, base and wall surfaces without causing damage.

B. Clean surfaces in accordance with manufacturer's recommendations.

END OF SECTION

PAINTING AND COATING

SECTION 09 91 00

PART 1 GENERAL

1.1 WORK INCLUDED

A. Provide painting and finishing of exposed items and surfaces.

a. Specified surface preparation, priming and coats of paint are in addition to shop-priming and surface treatment specified under other sections of work.

b. Painting and finishing includes field finishing of all exterior and interior items not listed as "Surfaces not to be Painted" unless clearly indicated otherwise.

c. Painting and finishing includes field finishing of select shop finished items where indicated as required to match adjacent surfaces, such as mechanical grilles and registers.

d. Field paint exposed bare and covered pipes, ducts, and hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work in occupied spaces.

1.2 SURFACES NOT TO BE PAINTED

A. Gaskets and Hardware at doors.
B. Prefinished items including finished metal surfaces, unless noted otherwise.
C. Walls and ceiling in concealed areas and generally inaccessible areas.
D. Moving parts of operating mechanical and electrical units
E. Code-required Labels: Keep equipment identification and fire rating labels free of paint.
F. Plastic smoke stops and weather stripping at doors.

1.3 SUBMITTALS

A. Product Data: Submit product data on all finishing products.

B. Samples for Verification:

1. Submit two samples 8-1/2 x 11 inch in size illustrating range of colors, textures and level of gloss finish for each surface-finishing product scheduled.

2. Submit manufacturer's application instructions.

3. Submit color charts in duplicate for all paints, stains and special coatings.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Furnish materials approved for use by applicable air quality management district for limitations of volatile organic compounds for architectural or special coatings as applicable.

B. Products shall meet or exceed the following Federal Specifications:
1. Alkyd Enamel – TT-E-489 QPL
2. Zinc Oxide Primer – TT-P-641

C. Provide manufacturers 5 year written performance guarantee for elastomeric paint and application error (materials and labor).

1.5 REGULATORY REQUIREMENTS

1. Conform to code for flame/fuel/smoke rating requirements for finishes.

2. Conform to requirements of the Environmental Protection Agency.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, with:

1. Name of material, color and sheen.
2. Manufacturer's name, stock number and date of manufacture.
3. Contents by volume, for major pigment and vehicle constituents.
4. Thinning and application instructions.

1.7 SITE CONDITIONS

A. Apply water-base paints when temperature of surfaces and surrounding air are between 50 and 90 degrees F.

B. Apply solvent-thinned paints when temperature of surfaces and surrounding air are between 45 and 95 degrees F.

C. Do not apply paint in rain, fog or mist; or when relative humidity exceeds 85 percent; or to damp or wet surfaces.

D. Painting may be continued during inclement weather if areas to be painted are enclosed and heated within temperature limits specified.

E. Provide additional temporary ventilation during interior application of paints to eliminate volatile organic compound (VOC) emissions from interior spaces as quickly as possible.

1.8 EXTRA STOCK

A. Provide a one gallon container of each color and surface texture to the Owner.

B. Label each container with color, texture, and room locations, in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Kelly-Moore.

B. Fuller-O'Brien Corp.

C. Sherwin-Williams Co.

D. Dunn-Edwards Corp.

E. Or Accepted Equal

2.2 MATERIALS

A. Definition: "Paint" as used herein means coating systems including primers, emulsions, enamels, stains, sealers and fillers, whether used as prime, intermediate or finish coats.

1. Provide top line quality commercial grade paints.

B. Colors and Finishes:

1. Prior to commencement of painting work, Architect will furnish color numbers or chips for surfaces to be painted.

a. Multiple brush-out samples will be required for each paint finish.

2. Final acceptance of colors will be from samples applied on site.

3. Color pigments: Pure, non-fading, applicable types to suit substrates and service indicated; no lead content permitted.

1. Finish Coat Coordination: Provide finish coats which are compatible with prime paints used.

a. Review other Specification sections in which prime paints are provided; ensure compatibility of total coatings systems.

b. Upon request from other trades furnish information on characteristics of finish materials proposed for use.
c. Provide barrier coats over incompatible primers or remove and re-prime as required.

d. Notify Architect in writing of any anticipated problems in use of specified coating systems with substrates primed by others.

C. Material Quality: Materials not bearing manufacturer's identification as a best-grade product shall not be acceptable.

1. Use of proprietary names in color selection is not intended to imply

exclusion of equivalent products of other manufacturers.

2. Provide undercoat paints produced by same manufacturer as finish coats; use only thinners approved by paint manufacturer, and use only within recommended limits.

3. Provide finish coats capable of being washed with mild detergent without loss of color, sheen, or pigments.

D. Volatile Organic Compound (VOC) Emissions: Select materials that generate least amount of pollution; consider pollution and volatile organic compound (VOC) emissions generated during manufacturing, transport, installation, use, and disposal.

1. Avoid materials that contain ozone depleting chemicals and that emit potentially harmful volatile organic compound (VOC) emissions.

2. Avoid materials that can leach harmful chemicals into ground water; do not allow potentially harmful chemicals to enter sewers nor storm drains.

3. Select materials that can be reused or recycled and materials with significant percentage of recycled content; set specific recycled content percentages for individual materials; avoid materials difficult to recycle.

PART 3 – EXECUTION

3.1 PREPARATION

A. Inspection: Examine areas and conditions under which painting work is to be applied.

1. Start of painting work indicates acceptance of surfaces and conditions of surfaces and conditions within any particular area.

2. Where exposed items or surfaces are not specifically mentioned in Schedules, paint same as adjacent similar materials or areas.

3. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to a durable paint film.

B. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as specified for substrate condition.

C. Correct minor defects and clean surfaces which affect work of this Section.

D. Remove hardware, accessories, and items in place and not to be painted, or provide protection prior to surface preparation and painting; after painting reinstall removed items.

E. Clean surfaces before applying paint; remove oil and grease prior to mechanical cleaning; program cleaning so contaminants from cleaning process do not fall onto wet, newly painted surfaces.

F. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.

G. Cementitious Materials: Prepare by removing efflorescence, chalk, dirt, grease, oils, and by roughening as required to remove glaze.

1. Determine alkalinity and moisture content of surfaces to be painted.

2. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, neutralize before application of paint.

3. Do not paint over surfaces where moisture content exceeds manufacturer's printed directions.

H. Wood: Clean wood surfaces of dirt, oil, and other foreign substances; sandpaper smooth surfaces exposed to view, and dust off.

1. Scrape and clean seasoned knots and apply thin coat of recommended knot sealer, before application of priming coat.

2. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job; prime edges, ends, faces, undersides, and backsides of wood.

3. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler; sandpaper smooth when dry.

I. Ferrous Metals: Touch up shop-applied prime coats wherever damaged using same type of primer as applied in shop or barrier coat compatible with finish paint.

1. Bare Surfaces: Clean surfaces that are not galvanized or shop-coated, of oil, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

2. Galvanized Surfaces: Clean free of oil and surface contaminants, using non-petroleum based solvent; primer and touch-up primer to be zinc-rich primer.

J. Mix painting materials in accordance with manufacturer's directions.

K. Store materials in tightly covered containers; maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.

L. Stir materials before application to produce mixture of uniform density, and stir as required during application; do not stir surface film into material, if necessary, strain material before using.

3.2 PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

3.3 APPLICATION

A. Apply paint in accordance with manufacturer's directions; use applicators and techniques best suited for substrate and type of material being applied.

1. Apply additional coats when stains or blemishes show through final coat, until paint is a uniform finish, color and appearance.

2. Provide extra attention to assure dry film thickness at corners and crevices is equivalent to that of flat surfaces.

3. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces; paint surfaces behind permanently-fixed equipment and furniture with prime coat only.

4. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

5. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.

6. Finish doors on tops, bottoms and side edges same as faces.

7. Sand lightly between each succeeding enamel coat and each varnish coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated or prepared for painting as soon as practicable after preparation.

1. Allow time between successive coatings to permit proper drying.

2. Do not recoat until paint feels firm and does not deform or feel sticky under moderate thumb pressure.

C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer.

D. Prime Coats: Apply to items not previously primed; recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat.

E. Finish Coats: Provide even texture; leave no laps, irregularity in texture, skid marks, or other surface imperfections.

F. Completed Work: Match approved samples for color, texture and coverage; remove, refinish or repaint work not accepted.

3.4 PAINTING SYSTEMS

A. Interior Work: Provide the following paint systems:

1. Gypsum Board – Eggshell sheen.

a. One Coat “Hamilton Prep-Coat Plus" prior to application of gypsum board texture.
b. One coat PVA primer
c. Two coats acrylic latex.

2. Steel - Unprimed: Semigloss sheen.
   a. One coat rust inhibitive primer.
   b. Two coats acrylic latex enamel, semi-gloss.

3. Steel - Primed: Semigloss sheen.
   a. One additional coat of rust inhibitive primer.
   b. Two coats acrylic latex enamel, semi-gloss.

4. Steel - Galvanized: Semigloss sheen.
   a. One coat galvanized metal primer.
   b. Two coats acrylic latex enamel, semi-gloss.

B. Sheens: Comply with ASTM D523, reflectance of paint.

1. Flat: 1-10.
2. Satin: 15-30.
3. Eggshell: 30-45.
4. Semigloss: 45-75.
5. Gloss: 75-100.

APPLICATION	TYPE	MPI Gloss Level	Dunn Edwards	Glidden Professional/Devoe	Sherwin Williams	Kelly Moore
PRIMERS						
Interior Gypsum Board	PVA	G1	W101	1030	B28W400	971
Interior Ferrous Metal	Alkyd	G1	BRPR00	4160	B66-310	1711
Interior Galvanized Metal	Acrylic	G1	UGPR00 or W8	4020	B66W1	1722
FINISHES						
Interior Gypsum Board, Ferrous Metal, and Galvanized Metal	Latex Enamel	G5	SPMA50	1406	B31W251	1650
Interior Gypsum Board	Latex Enamel	G3	SPMA30	1402	B20W251	1686

3.5 CLEAN-UP, PROTECTION AND REPAIR

Clean-Up: During progress of work, remove discarded paint materials, rubbish, cans and rags from site at end of each work day.

1. Clean glass and paint-spattered surfaces immediately by proper methods of washing and scraping, using care not to scratch or damage finished surfaces.

B. Protection: Protect work of other trades, whether to be painted or not; correct

damage by cleaning, repairing or replacing, and repainting, as acceptable to the County.

1. Provide "Wet Paint" signs to protect newly-painted finishes.
2. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

C. Repair: At completion of work of other trades, touch-up and restore damaged surfaces or defaced painted surfaces.

3.6 FIELD QUALITY CONTROL

A. Owner reserves right to invoke material testing procedure at any time during field painting.

B. If test results show material being used does not comply with specified requirement, Contractor may be directed to remove non-complying work, pay for testing, and repaint surfaces.

END OF SECTION

PLUMBING

SECTION 22 00 00

PART 1 – GENERAL

1.1 INCLUDED

A. This Specification establishes the required standards for all labor, materials, equipment, and workmanship in connection with the furnishing, fabrication, and installation of “Plumbing.” Plumbing work includes, but is not limited to, the following items of work:

1. A complete system of soil, waste, vent, and sanitary sewer piping and structures, including provisions for mechanical equipment drainage; and connection of same to public sanitary sewers, located as indicated on the Drawings.

2. Cold water distribution system, complete, from points of contact with site domestic water systems (located approximately as indicated on the Drawings) to all plumbing fixtures, mechanical equipment, building specialties, and Owner supplied equipment scheduled for service on the Drawings.

3. Hot water distribution system, complete, from serving water heaters and/or points of contact with site domestic hot water, to all plumbing fixtures, mechanical equipment, building specialties, and Owner supplied equipment schedule for service on the Drawings.

4. All plumbing fixtures and trim as scheduled on the Drawings, inclusive of setting of Fixtures and connections to drainage and water supply systems.

5. Flashing of all plumbing pipe penetrations through exterior walls, roofs, and foundations. Sheet metal and lead flashings for pipe penetrations through roofs shall be furnished by the Plumbing Contractor and installed by the appropriate Roofing Contractor.

6. Excavation and backfill as required for the work of this Section in conformity with Earthwork Section of the Specifications.

7. Rough in and connection of all fixtures and equipment furnished by the Owner and/or Tenant.

8. Final connection of water and natural gas to equipment furnished under other Sections.

9. Protection of all piping specified herein and/or shown on the Drawings, from freezing. Buried piping shall be a minimum 12” below the local front line. Piping above grade in unconditioned areas shall be insulated.

10. Testing and adjusting of all piping systems and equipment herein specified.

11. Sterilization of domestic water systems.

12. Pipe wrapping and insulation.

B. The bidding requirements and contract forms, including General Conditions and Supplemental General Conditions, all Division 01 Sections apply to all work herein.

C. Should any work or material not be included in the Drawings or Specifications but it nevertheless necessary for the proper execution of the stated scope therefore for full compliance with codes, laws, rules, and regulations, the Contractor shall understand such work and material is required, and shall perform all such work.

1.2 LICENSES, PERMITS, AND FEES

A. The Contractor shall provide, procure, and pay for all licenses, permits, fees, etc. as required to carry on and complete their work.

1.3 CODES AND STANDARDS

A. All work shall be done in code with all applicable local, state, and federal building safety codes, ordinances, and regulations. Additionally, all work shall conform to the latest editions of the following standards:

1. National Fire Protection Association.

2. California Mechanical Code.

3. California Plumbing Code.

4. Underwriters Laboratories.

5. Titles 8, 17, 19, 21, 24 of the California Code of Regulations.

6. California Electric Code.

B. When the Contract Documents call for materials or construction of a higher standard than is required by the above, the Contract Document requirements shall take precedence over the requirements of the applicable laws, ordinances, rules, or regulations. Nothing in the Contract Documents shall be interpreted as permitting work in violation of said laws, rules, and/or regulations.

C. The Contractor for this work shall furnish, without extra charge, any additional materials and/or labor as may be required for compliance with these laws, rules,

and/or regulations though such materials and/or labor are not specially set forth in the Contract Documents.

1.4 LICENSING REQUIREMENTS

A. All plumbing systems shall be installed by a C-36 Plumbing Contractor. Plumbing systems include: waste removal and connection of on-site waste disposal systems; piping, storage tanks, and venting for supply of gases and liquids for any purpose; all gas appliances, flues, and gas connections; water and gas piping from the Owner's side of utility meter to the structure or fixed works, installation of any type of equipment to heat water or fluids to a suitable temperature; and maintenance and replacement of the items described above, including health and safety devices.

B. All plumbing piping insulation shall be performed by a C-2 – Insulation and Acoustical Contractor.

1.5 SUBMITTALS

A. All fixtures, materials, and equipment equal in quality and utility to these herein mentioned will be accepted. When specific names are used in describing fixtures, materials, and equipment they are mentioned as standards only, but this implies no right on the part of the Contractor to use other fixtures, material, and equipment or methods, unless approved as equal in quality and utility by the Architect.

B. Before any fixtures, materials, or equipment are purchased, the Contractor shall submit to the Architect for approval, a complete list of materials, fixtures, and equipment, giving the manufacturer's names, model numbers, and catalog sheets.

C. The Contractor shall submit for the approval of the Architect, shop drawings of proposed material and equipment that differ from the specified materials and equipment, and of any specified materials and equipment with special conditions and/or arrangements. These drawings shall show necessary modifications of owner, plumbing, electrical, and mechanical work required by the proposed materials and equipment.

D. Submittal lists and drawings shall include identifying marks assigned by the Drawings and Specifications.

E. Review of drawings and other material submitted shall not be construed as complete check or constitute a waiver of the requirements of the Drawings and Specifications, but will indicate that the material submitted is acceptable in quality and utility. This review shall not relieve the Contractor of the responsibility to fit the proposed materials to the spaces provided, and to effect necessary rearrangements or construction of other work.

F. Coordination/Layout Shop Drawings

1. Prepare complete consolidated layout drawings for all new systems, and for existing systems that are in the same areas. Shop drawings shall be prepared using AutoCAD 2004 or newer and shall be drawn at a minimum ¼" = 1' 0" scale.

All drawings shall be fully coordinated with HVAC, Plumbing, Fire Protection, Electrical, Structural, and Architectural work.

2. Clearly identify and dimension the proposed locations of the principal items of equipment and adequate clearance for all equipment, piping, pumps, valves, and other items. Provide detailed layout of all piping systems showing the proposed routes.

3. Show the access means for all items requiring access for operations and maintenance.

4. Submit shop drawings to Architect for approval, prior to fabrication or installation of any work. Do not install equipment or piping until layout drawings have been approved. Any work installed without prior shop drawing approval shall be removed at the Contractor's expense.

1.6 COOPERATION WITH OTHER TRADES

A. Cooperate fully with other trades doing work on the project as may be necessary for the proper completion of the project. Refer to the Structural, Mechanical, and Electrical Drawings for details of the building structure and equipment installation that will tend to overlap, conflict with or require coordination with the work of this Section, and schedule this work accordingly.

B. Any work done without regard for other trades shall be moved, replaced, or redone as required, without extra charges to Owner.

1.7 AS-BUILT DRAWINGS

A. A complete set of Contract Drawings shall be maintained at the work site, and all changes in the work shall be recorded on this set, on a daily basis. The final as-built drawings shall be submitted to the Owner's Representative for approval.

1.8 DRAWINGS

A. The drawings indicate diagrammatically the general layout of the plumbing systems and other related work. Field verification of scaled dimensions taken from the Drawings is required.

B. The Contractor shall review and compare the Architectural, Structural, Plumbing, Mechanical, and Electrical Drawings and all Owner supplied equipment Drawings, and adjust their work to be in conformity with the conditions indicated thereon. Discrepancies between drawings, between drawings and actual field conditions, or between Drawings and Specifications, shall promptly be brought to the attention of the Architect for a determination of the modifications to be effected. In the event that a major modification is required, a Change Order will be prepared.

1.9 VERIFICATION OF EXISTING CONDITIONS AND DEMOLITION

A. Before installation of any new work, verify the location, size, and other conditions at all points of connection to services or other existing piping, and at all locations where new work will cross or pass near existing piping, electrical, or other facilities.

B. Patch, cap, or repair existing works affected by this demolition in concealed spaces within six (6) inches of a live main or branch.

C. Deliver removed material to the Owner as directed by the Architect. Dispose of all other removed material offsite.

D. Information shown relative to existing services is based upon available records and data during preparation of the Drawings, but shall be verified. Make reasonable deviations found necessary to conform to actual locations and conditions, without extra charge.

E. The data given herein and on the Drawings are as exact as could be reasonably secured, but absolute accuracy is not guaranteed. Exact locations, distances, elevations, etc. will be governed by shop drawings, the building itself, and actual field conditions.

1.10 DAMAGE BY LEAKS

A. Contractor shall be responsible for any damage to work of other Contractors that is caused by leaks in any temporary or permanent piping systems due to pipe rupture, disconnected pipes or fittings, or by overflow of equipment.

1.11 SEISMIC FORCE RESISTANCE: MECHANICAL, PLUMBING, FIRE PROTECTION SYSTEMS

A. All mechanical systems and plumbing piping systems shall adhere to the SMACNA “Seismic Restraint Manual: Guidelines for Mechanical Systems,” Third Edition, dated March 2008.

B. Equipment:

1. Each piece of equipment installed shall be constructed and anchored to structural supports to resist a seismic force of 150% of the equipment’s operating weight in any direction. Supports, anchors, and braces shown shall be minimum.

2. Equipment manufacturer shall design, construct, and certify that his equipment satisfies the special minimum seismic resistance requirements and shall submit calculations or test results supporting his certification.

1.12 DELIVERY, STORAGE, AND HANDLING

A. Contractor shall be responsible for delivery, storage, protection, and placing of all equipment and materials.

1. Contractor shall protect the work and materials from damage during construction. Equipment stored at the job site shall be protected from dust, water, or other

damage, and be covered if equipment is exposed to weather. Protect interiors of new equipment and piping systems against entry of foreign matter. Clean both inside and outside before painting or placing equipment in operation.

2. Any items damaged shall be repaired or replaced, at no additional cost to the Owner.

B. Cleanliness of Piping and Equipment Systems

1. Exercise care in storage and handling of equipment and piping material to be incorporated in the work. Remove debris arising from cutting, threading, and welding of piping.

2. Piping systems shall be flushed, blown, or pigged as necessary to deliver clean systems.

3. Contractor shall be fully responsible for all costs, damage, and delay arising from failure to provide clean systems.

1.13 WARRANTIES

A. Equipment warranties shall be provided for all equipment, with all necessary information filled in, except purchase date, in favor of the Owner.

B. The contractor shall guarantee that all work under this Section is free from defects in material and workmanship for a period of one year from the date of filing the Notice of Completion. Replacement of defective work and damage caused to work of other trades as a result of such defective work shall be the responsibility of the Contractor, and shall be made at no cost to the Owner.

1.14 ALTERNATIVE MATERIALS AND METHODS

A. These plans and specifications describe the general scope of the mechanical systems. These plans and specifications do not preclude the submittal of alternative methods or materials. Manufacturer’s names and catalog numbers are stated to identify the type and quality of the equipment or materials required for the project.

B. The contractor may submit shop drawings and/or technical information on alternative equipment, materials or installation details to accomplish the intent of the plans and specifications. Approval of the alternative equipment, materials or installation details shall not relieve the contractor of any responsibility for complying with the intent of the plans and specifications. Submit the manufacturers' technical information, shop drawings, and/or written description of alternative methods for each item described by manufacturer's name and catalog number and for each component, equipment, material, or installation detail required.

1.15 SITE EXAMINATION

A. Thoroughly examine the site and verify the actual work conditions. No extra compensation will be allowed for expenses due to failure to discover site conditions which affect the work.

PART 2 – PRODUCTS

2.1 GENERAL

A. Only specified material shall be utilized in the work of this Section unless substitutions have been approved in accordance with the General Conditions and Division 1 Sections of the Specifications.

B. All materials shall be new and unused, of the best quality for the intended use, and shall be listed by the ASA, AGA, and UL as meeting their requirements and bearing their label wherever standards have been established and label services are regularly furnished by them.

2.2 PIPE AND FITTINGS

A. Gas Piping

1. Above Ground - Schedule 40 black steel

a. All concealed pipe and all pipe 2-1/2” and larger shall be welded. Fittings for welded pipe shall be seamless steel with welded neck.

b. All accessible pipe 2” and smaller shall be threaded. Fittings for threaded pipe shall be 150-lb. malleable iron, screwed and banded.

2. Below Grade (Exterior) – Schedule 40 black steel

a. Schedule 40 black steel pipe conforming to ASTM A-120 with extruded plastic coating, threaded malleable iron fittings, wrapped with UPC-approved 20 mil PVC pipe wrap.

3. Below Grade (Exterior) – Polyethylene Yellow Gas Piping

a. Polyethylene PE2406 yellow gas piping with fuse-sealed connections and IAPMO listed anodless steel risers may be substituted for buried steel pipe if installed by contractors with qualification certificates.

b. Underground lines shall be Performance Pipe, “DriscoPlex 6500” PE2406 polyethylene pipe and fittings for underground gas distribution. The polyethylene plastic pipe and heat fusion fittings shall meet the requirements of ASTM D 2513.

c. The pipe and fitting manufacturer shall be ISO Certified in accordance with the current edition of ISO 9001 and a documented quality management system that defines product specifications and manufacturing and quality

assurance procedures that assure conformance with customer and applicable regulatory requirements.

d. A licensed and bonded Contractor shall perform all underground gas distribution piping construction work. The Contractor shall secure all necessary permits before commencing construction.

e. Materials used for the manufacture of polyethylene pipe and fittings shall be PE 2708 (PE2406) medium density polyethylene meeting cell classification 234373E per ASTM D 3350; and shall be Listed in Plastic Pipe Institute TR-r with standard grade HDB ratings of 1250 psi at 73°F, and 1000 psi at 140°F. All pipe and fittings materials shall be opaque yellow in color. Materials shall be stabilized against ultraviolet deterioration and suitable for outdoor storage for at least 4 years.

4. Underground Beneath Building (Interior) – Schedule 40 black steel

a. Piping shall be installed in a gastight conduit. The conduit shall be made of PVC not less than Schedule 40. The interior diameter of the conduit shall not be less than 1/2 inch larger than the outside diameter of the gas piping.

b. Conduit with one end terminating outdoors: the conduit shall extend to the outside wall of a building, and the outer end shall not be sealed. The outside end of the conduit must be screened with a minimum 1/4 inch mesh screen. The termination point must be a minimum 6 inches above grade. The inside end of the conduit must be sealed to prevent the possible entrance of a gas leakage.

c. Conduit with both ends terminating indoors: where the conduit originates and terminates within the same building, the conduit shall originate and terminate in an accessible portion of the building and shall not be sealed. Provide access panels as required.

B. Sanitary Soil, Waste, and Vent Piping:

1. Above Ground

a. Lines 2” and larger shall be standard weight, hub-less cast iron soil pipe and fittings, and shall conform to the requirements of ASTM A 888 and CISPI Standard 301. Approved manufacturers: Charlotte, Tyler, or AB&I.

b. Joints: Couplings shall conform to the requirements of ASTM C1540 and shall be heavy duty type 304 stainless steel shielded, having 4 sealing clamps for pipe sizes 1 ½” thru 4:, and 6 sealing clamps for pipe sizes 5” thru 10”. Gaskets shall comply with ASTM C-564. Anaco, Tyler, or equal.

c. Schedule 40 PVC-DWV may be substituted for above-ground vent piping only, provided that it is installed in compliance with ASTM F1866 with PVC socket fittings and solvent joints.

C. Condensate Piping

1. Type M, hard temper, copper with wrought copper or cast brass fittings. Joints shall be made up with “Stay-Safe 50” lead free solder.

2. Schedule 40 PVC-DWV may be substituted for rooftop condensate drain piping, provided that it is installed in compliance with ASTM F1866 with PVC socket fittings and solvent joints.

D. Cold and Hot Water Piping

1. All domestic cold water piping 3” and smaller shall be Type L, hard temper, copper pipe with wrought copper or cast brass solder joint fittings. All joints shall be made up with “Stay-Safe 50” lead free solder. A suitable non-corrosive flux shall be used at all joints.

2. Pipes below grade inside buildings shall be soft drawn, Type L or K copper with no joints below slabs. Pipes shall be installed in a PVC conduit not less than Schedule 40. The interior diameter of the conduit shall not be less than 1/2 inch larger than the outside diameter of the water piping.

2.3 UNIONS

A. Steel pipe unions shall be malleable iron, 150lb., ground joint, Grinnell Fig. 463.

B. Copper pipe unions shall be soldered joint, Nibco series 633 or 733, Mueller, or equal.

C. Dielectric unions shall be EPCO or equal.

2.4 VALVES, SPECIALTIES

A. Ball Valves, Nonpotable Water: Nibco T-580, bronze body, “Ring Ball,” conventional port, two piece, lever handle, 125 lb.

B. Ball Valves, Potable Water up to 2”: Nibco T-585-80-LF or T-585HP-LF, lead-free silicon bronze body, “Ring Ball,” full port, two piece, lever handle, 125 lb.

C. Ball Valves, Potable Water over 2”: Nibco T-580-80-LF, lead-free silicon bronze body, “Ring Ball,” conventional port, two piece, lever handle, 125 lb.

D. Check Valves, Nonpotable Water:

1. Nibco T-480, bronze body, inline lift type, Teflon seat, and discs, spring actuated, 125 lb.

2. Nibco T-413, Stockham B-345, bronze body, Y-pattern lift type, Class 200.

E. Check Valves, Potable Water:

1. Nibco T-480-LF, lead-free silicon bronze body, inline lift type, Teflon seat, and discs, spring actuated, 125 lb.

2. Nibco T-413-Y-LF, lead-free silicon bronze body, Y-pattern lift type, Class 200.

F. Gate Valves: 3" and smaller shall be NIBCO T134 or Stockham B-120 or B-124, bronze body, union bonnet, rising stem, solid wedge, 150 lb. with wheel handle.

G. Gas Shut-off Valves:

1. At Building Service: Homestead Fig. 601, semi-steel, lubricated plug, lever handle, 200. Lb. Install CALIFORNIA Series 300 seismic actuated shut off valve at entrance to building. Brace per manufacturer's instructions.

2. At Connection to Equipment: Jomar T-203 gas ball valves, ¼-turn, hot forged brass, 2-piece design, standard port, appliance type with side tap/drain. Provide with ADA certified stainless steel flex connection 12" max.

H. Backflow Preventers (where shown on the Drawings or required by local code):

1. Atmospheric type; Wilkins #35 series.

2. Pressure type: Wilkins #720A series.

3. Reduced pressure type:

a. ¼" to 2" – Wilkins #975-XLMS series.

b. 2 ½" to 10" – Wilkins #375 series.

I. Gas Pressure Regulators: American Regulator, Series 1813C. Regulators shall be sized for full gas capacity of equipment as scheduled on the Drawings. Inlet pressure shall be 5 psig. Outlet pressure shall be 7" water column. Regulators installed indoors shall have relief opening piped to outdoors. Size relief pipe in accordance with ANSI Z223.1 "National Fuel Gas Code."

2.5 HANGERS, SUPPORTS

A. Installation of piping shall be such that damage cannot result through loading, expansion, or contraction of piping. Anchors shall be installed to obtain uniformity of pipe movement.

B. Pipe supports shall be spaced sufficiently close to support pipes properly without formation of pockets. Supports and hangers shall be installed at ends of mains and branches and maximum intermediate spacing shall be as follows:

MAXIMUM SPACING, (FT.)		MINIMUM ROD DIAMETER	
Pipe Diameter, Inches		Pipe Dia.	Rod Dia.
1" &Less	1-1/4"& More	Inches	Inches

Steel	8	10	2 & Less	3/8
Copper	6	8	2-1/2 to 3	½
Cast Iron	5 (One min. per length & fitting)		4 & Larger	5/8

C. Pipe hangers shall be Superstrut, B-Line, or equivalent Grinnell. All hangers shall be electro-chromate finished. Hanger rods shall have electro-galvanized finish.

D. Steel pipe, cast iron soil pipe: C-711 pipe hangers.

E. Copper tubing: C-711 pipe hanger complete with C-716 isolator.

F. Insulated pipe: C-711 pipe hanger fitted to outside of insulation with C-790 galvanized shields.

G. Trapeze Hangers

1. Grouped pipes may be supported by A-1200 channel bolted to rods.

2. Copper and steel pipe shall be attached to channels with A-716 “Cush-A-Clamp.”

H. Cast iron soil pipe shall be supported with C-711 pipe hangers with rods attached to the bottom of channels.

I. Point of Support Connectors

1. Wood Construction

a. 540 side beam hanger for stationary pipes.

b. S-541 for pipes subject to movement.

2. Vertical Pipe Risers: Vertical pipes risers shall be securely supported with C-720 pipe clamps (C-720P for bare cold water pipe) anchored to construction.

J. Provide resilient mounting for domestic water piping. Thermal insulation may serve as resilient mounting for insulated piping.

K. Suspended water piping shall be anchored with steel struts installed at midpoint of each run.

L. No valve or piece of equipment shall be used to support piping.

2.6 CLEANOUTS

A. Cleanouts in membrane damp-proofed floors shall have flashing flange and membrane clamps. Plugs shall be bronze, with cast iron body ferrule for cast iron pipe.

B. Floor Cleanouts (FCO): Zurn ZN 1400-HD, “Level-trol” adjustable cleanouts, dura-coated cast iron with gas and water-tight ABS tapered thread plug, and round scoriated top, adjustable to finished floor .

C. Grade Cleanouts (GCO): Zurn Z-1474-IN or equal JR Smith. Housing to be dura-coated cast iron body with integral anchor flange and scoriated cover with lifting device. Cleanouts in un-paved areas shall be set in 18” x 18” x 4” concrete pads.

D. Wall Cleanouts (WCO):

1. Copper tubing: Nibco Figure 816 or 817, with Zurn Z-1462, 6” x 6” polished chrome-plated bronze wall plate and frame.

2. Cast iron pipe: Zurn Z-1441, dura-coated with gas and water-tight bronze, taper thread plug and round smooth stainless steel access cover with securing screw.

3. Steel pipe: Zurn Z-1468, round stainless steel wall access cover, complete with securing screw and bronze raised hex head plug for steel pipe.

2.7 SLEEVES, WALL PLATES

A. Service pipe through exterior wall, roofs: Crane Style BC wall and ceiling plates; chrome plated at finished rooms.

B. Pipes through, under footings: 18 gauge iron sleeves two diameters larger than pipe, cast in concrete, annular space filled with mastic or plastic bituminous cement.

C. Pipes through fire rated walls shall be protected with fire retardant mastic as detailed on the Drawings. Installation shall be in full accordance with the requirements of the UL system number. Hilti or approved equal.

D. Wall and ceiling plates: Crane Style BC or equal; chrome plated at finished rooms.

E. Pipes through floors, interior concrete walls, and through fire rated wall and smoke stop partitions: 18 gauge iron sleeves, two diameters large than pipe, annular space filled with 3M Brand Fire Barrier CP-25 caulk.

F. Pipes through 1-hour walls shall be protected with fire retardant mastic as detailed on the Drawings. Installation shall be in full accordance with the requirements of the UL system number. Hilti or approved equal.

2.8 ACCESS DOORS

A. Where construction is not inherently accessible, provide adequately sized and conveniently located access doors in ceiling, walls, and furring for servicing valves, equipment, and appurtenances etc.

B. Access doors shall be Karp, Milcor, or equal, prime coated steel for all surfaces except ceramic tile, 12” x12” minimum size as required. Locks shall be flush, screwdriver operated.

1. Style KDW for gypsum board surfaces.

2. Style PL for plaster surfaces.

3. Style 210 for acoustic tile surfaces.

4. Style DSC 214-M satin finish stainless steel at ceramic tile surfaces.

5. Style “Fire Rated” at rated ceilings and walls.

2.9 PIPE INSULATION

A. Insulate all hot water supply piping, all hot water return piping, all cold water supply piping in exterior walls or unconditioned spaces, and all primary roof drain piping in conditioned spaces with John Manville “Micro-Lok” 650, Fiberglass, Certainteed, or equal, rigid fiberglass one-piece pipe insulation with and all purpose jacket. Jackets shall be constructed of high density, white kraft bonded to aluminum foil with fiberglass yarn, with a pressure sensitive closure system.

B. All insulation shall have composite (insulation, jacket, and adhesive used to adhere the jacket to the insulation) Fire and Smoke Hazard ratings as tested under procedure ASTM E-84, NFPA 255 or UL 723, not exceeding: Flame Spread – 25, Smoke Developed – 50.

C. Inserts shall be installed at outside hangers. Inserts between the pipe and pipe hangers shall consist of rigid pipe insulation of thickness equal to the adjoining insulation. Inserts shall not be less than 10” long for pipe sizes through 2 ½” and not less than 12” long for pipes larger than 2 ½”.

D. Metal shields shall be applied between hangers or supports and the pipe insulation. Shields shall be formed to fit the insulation and shall extend up to the centerline of the pipe and the length specified for hanger inserts.

E. Insulation thickness shall be as follows:

1. All cold water piping: 1”

2. All hot water piping 1” and smaller: 1”

3. All hot water piping 1 ¼” and larger: 1 ½”

4. All primary roof drain piping: 1”

2.10 PIPE LABELS

A. All new domestic cold water, hot water, and hot water recirculation piping shall be clearly labelled.

B. Industrial safety solutions piping labels shall be rated for indoor and outdoor use and be attached with permanent adhesive.

C. Labels shall show the direction of flow and indicate the process media. Pipe labeling color and text size shall conform to ANSI/ASME A13.1-2007. Process piping shall be labeled a minimum of twice per room in locations designated by the Engineer.

2.11 SHOCK ABSORBERS

A. Zurn, “Shoktrol,” or equal JR Smith, stainless steel bellows. Install with gate valve shut-off and access door at all flush valves or other automatic valves. A single unit sized in accordance with the manufacturer’s recommendations may serve batteries of valves.

2.12 VALVE BOXES

A. Christy #F-08, complete with concrete cover and required extensions. Index all covers “GAS” or “WATER” as required for service use.

2.13 STRAINERS

A. For pipes 1 ½” – 2”: NIBCO T/S 221/222-A, or Wilkins S or YB series strainer, 20 mesh type 304 stainless steel screen, bronze construction 200 psi CWP or approved equal. Provide with hose bib drain.

B. For pipes 2 ½” & larger: NIBCO F-721A, or Wilkins F series, flanged, 125 lb., tapped bolted bonnet with plug and stainless steel screen.

PART 3 – EXECUTION

3.1 SURFACE CONDITIONS

A. This Contractor shall be held to have examined the site and compared it with the Contract Documents, and to adequately understand the conditions under which the work is to be performed. In the event of discrepancy, this Contractor shall notify the Architect and proceed as directed. This Contractor shall be held responsible for all existing conditions, whether or not accurately described, and no allowance shall subsequently be made on his behalf for any error, omission, or extra expense due to failure or neglect to make such examination and notification.

B. Prior to commencing the work of this Section, this Contractor shall inspect the installed work of other trades and verify that their work is sufficiently complete to permit the start of work under this Section and that the completed work will be in complete accordance with the original design. In the event of discrepancy immediately notify the Architect and proceed as directed.

3.2 ACCESSIBILITY

A. Equipment shall be placed and piping connections made in such a manner that all routine adjustments and maintenance operations may be carried out without inconvenience and so that all code requirements for clearances are maintained.

3.3 VIBRATION AND SOUND CONTROL

A. Make all necessary provisions to prevent the transmission of vibration to the building structure, including flexible pipe connections to motor driven equipment, resilient mounting for piping, and sealing off pipe and duct penetrations of walls and roof.

3.4 INSULATION

A. Insulation shall be applied in complete accordance with the manufacturer's published installation instructions. All insulation shall be applied on clean, dry surfaces and shall be continuous through wall and ceiling opening and sleeves. All joints shall be firmly butted together and longitudinal jacket laps and butt strips shall be smoothly secured. Specified adhesives, mastics, and coatings shall be applied at the manufacturer's recommended minimum coverage per gallon.

3.5 PIPING INSTALLATION – GENERAL

A. Rough in shall proceed as rapidly as general construction will permit. All rough-in shall be complete, at locations verified by Architect and Owner, and tested and inspected prior to installation of concrete, lath, plaster, gypsum wallboard, or other finishes.

B. All piping shall be concealed in finished rooms, installed in furred walls and partitions. Where furred or suspended ceilings occur, piping shall be installed in the concealed space at points adjacent to beams and/or other structural members, and coordinated with ductwork and equipment. Where exposed piping occurs, it shall be installed parallel to or at right angles to building walls, unless specifically shown otherwise on the Drawings.

C. Installation of piping shall be such that damage cannot result, through thermal expansion or contraction, to piping, building, or pipe hangers and supports. Anchors shall be installed at midpoints of all runs in main piping for the purpose of localizing pipe expansion or prevention of creepage.

D. All pipe lines shall be installed free from traps and air pockets, true to line and grade, with suitable supports properly space. All piping shall be installed without undue stresses and with provision for expansion and contraction.

E. All piping shall be new and free from foreign substances. American standard pipe threads shall be used for IPS threaded work. Joints in threaded piping shall be made up with Teflon tape applied to the male threads only. No screwed pipe joints shall be caulked or packed with rope or other packing materials. Pipe shall be free from tool marks, threads cut accurately with not more than two (2) threads showing beyond fitting. Friction wrenches shall not be used with plated, polished, or soft metal piping. All changes in pipe size shall be made with reducing fitting. Bushings will not be permitted.

F. Protect unattended openings in piping during construction.

G. Weld all pipe 2.5 inches and larger. Use the following procedure. All welders must be AWS certified. AWS B2.1 SMAW 6G Pipe Welding Procedure Specifications.

Welding process: SMAW	Grove Angle: 60 degrees
Position: 6G Fixed position	Material/Spec: A 106
Weld Progression: Up	Thickness (pipe/tube): Groove (in.) .280
Backing: No	Notes: Sch. 40 Pipe
Current/Polarity: DCEP	Filler Metal Class: E6010Rt/E7018F1
Root Opening: 1/16 to 1/8	Other Filler Metal Class: Rt. 1/8, 3/32 filler

H. Welded joints shall be beveled and butt-welded. Reductions of pipe shall be made with forged steel welding fittings. Branch reductions of two or more pipe sizes smaller than the main, may be Bonney “Weld-O-Let” fittings, or equal. Job fabricated reductions and branches shall not be used. All pipe burrs shall be reamed out. Welding rods shall be as follows, or approved equal:

Pipe Size	**Arc Welding**	**Gas Welding**
2” and larger	Fleetweld #5	Oxweld #1 or Page Hi-Test M
1 ½” and larger	None	Oxweld #1 or Page Hi-Test M

I. No water or drainage piping shall pass over electrical equipment unless adequate protection is provided to prevent damage by leaks or condensation.

J. All copper tubing shall be formed in a workmanlike manner, in accordance with the Pipe and Tube Bending Handbook of the Copper and Brass Research Association. A tube bender giving support to the periphery of the tube shall be used. The tubing shall be protected against flatting or other injury.

K. All copper connections and joints shall be made in accordance with the Copper Tube Handbook, Copper and Brass Research Association. No swaged connections will be permitted. All valves, pumps, and similar equipment shall be connected to copper piping through union or flange adapter fittings.

L. Valves, cocks, etc., shall be installed to allow convenient accessibility and operation.

M. Unions and flanges shall be installed to allow convenient replacement of all equipment and clearing tubes.

N. A union connection shall be installed downstream from all valves, at equipment connections and at other locations as required or directed.

O. Shut off valves shall be provided in all main services, and where required to permit proper servicing of equipment. Valves of one type shall be of one manufacturer.

P. All valves shall be of the same size as the pipelines in which they are installed, unless specifically sized on the Drawings. All hand controlled line valves shall be ball valves, except where throttling control or frequent operation is required, in which

case globe or angle valves shall be used. Globe valves in horizontal lines shall be installed with stem in horizontal to permit line draining. All globe and angle valves shall be installed to close against pressure. Disc valves shall have discs suitable for the services for which they are to be used.

Q. All valves shall be accessible and shall not be installed with the stems below the horizontal plane. Provide access panels at walls, ceilings, or floors.

R. Provide prime coated escutcheon plates at all points where exposed piping penetrates finished wall ceilings or floors.

S. Cutting or boring of joists or other structural members shall be done only when alternative routing is impossible and only upon written approval of the Architect or Owner.

3.6 INSTALLATION, PIPING

A. Natural Gas Piping

1. Natural gas piping shall slope back to meter, where possible.

2. Bottom of vertical natural gas lines shall be fitted with 6” long capped drip legs.

3. In addition to the main shut-off valve, a natural gas stopcock shall be installed at each piece of gas-fired equipment.

B. Condensate Piping

1. Indirect waste piping shall be installed to a uniform minimum grade of ¼” per foot unless otherwise noted.

2. Changes in direction of indirect waste piping shall be accomplished by the use of appropriate drainage fittings.

3. Drilling and tapping of indirect waste pipes and the use of saddle hubs and bands are prohibited.

C. Flashing

1. All roof and wall penetrations shall be flashed and counterflashed water tight with 26 gauge sheet metal, except as noted.

2. Vents through roof shall be flashed with Semco #1100-4 lead flashing assemblies. Flashing shall extend over top of pipe and shall be turned down inside top of pipe.

D. Soil, Waste, Vent, Drain Piping

1. Soil, waste, and vent piping occurring within the building shall be installed to a uniform minimum grade of ¼" per foot unless otherwise noted. Vent piping shall be graded so that all condensation shall flow directly to a soil or waste line.

2. Changes in direction of drainage piping shall be accomplished by the use of appropriate drainage and sanitary fittings.

3. Protection against breakage of piping passing under or through walls shall be provided using specified sleeves and caulking.

4. Adapters shall be installed between threaded iron and soil pipe.

5. Test tees shall be installed at the foot of all soil, waste, and storm water stacks.

6. Cleanouts shall be located where indicated on the Drawings; at all horizontal offsets; at ends of waste or sewer branches more the 5' in length; at intervals of 100' in straight runs of piping, or at closer intervals if directed or required by local code. Location of cleanouts in finished spaces shall be approved by the Architect prior to installation.

E. Hot and Cold Water Systems

1. Di-electric unions shall be installed where copper pipe is connected to galvanized steel piping or stub outs.

2. Connections from copper pipe to fixture supply fittings shall be made with copper or brass nipples.

3. All domestic water piping shall be kept clear of the building structure. Where it is within 1" of the building structure, it shall be wrapped with felt (3/16" minimum thickness).

4. To the greatest extent possible, domestic cold water piping shall be kept separated from hot piping and where there is a choice shall be run in the coolest portion of the available space.

F. Storm Drainage Piping

1. Roof drains shall be installed where indicated on the Drawings, in conjunction with work specified in "Membrane Waterproofing" Section. This Contractor shall be responsible for a watertight installation.

2. Rain water leaders connected to roof drains and gutter systems shall be standard weight galvanized steel pipe and fittings, except where otherwise noted, and shall be continuous from drain to connection with underground storm water drainage facilities. Provide a cleanout at the base of all vertical to horizontal transitions.

3. Sheet metal downspouts are furnished and installed by others.

4. Downspouts inside building, if shown, shall be continuous from drain to curb or connection with underground storm water drainage facilities. Provide a cleanout at the base of all vertical to horizontal transitions.

5. Insulate storm drain piping where it is located above a ceiling or within a concealed space. Overflow piping is not required to be insulated.

3.7 INSTALLATION, HANGERS & SUPPORTS

A. Installation of piping shall be such that damage cannot result through loading, expansion, or contraction of piping. Anchors shall be installed to obtain uniformity of pipe movement.

B. Hanger rod sizes shall be no smaller than 3/8-inch for pipe and tube sizes ½ to 4 inches and ½ inch for sizes 5-8 inches.

C. Pipe supports shall be spaced sufficiently close to support pipes properly without formation of pockets. Hangers shall be installed at ends of mains and branches. Maximum horizontal support spacing shall be as follows:

1. Steel Pipe for Water or DWV: 10 feet for pipe sizes ¾ inch and smaller and 12 feet for sizes 1 inch and larger.

2. Steel and Tinned Copper Pipe for Gas: 6 feet for ½ inch pipe; 8 feet for sizes ¾ to 1 inch, and 10 feet for sizes 1 ¼ inch and larger.

3. Copper Tube and Pipe, soldered or brazed: 6 feet for pipe sizes 1 ½ inches and smaller and 10 feet for sizes 2 inches and larger.

4. Hubless Cast-Iron shall be supported at every other joint, unless over 4 feet, then support each joint. Support adjacent to joint, not to exceed 18 inches, brace at not more than 40 foot intervals to prevent horizontal movement. Support at each horizontal branch connection. Hangers shall not be placed on the coupling.

D. Provide resilient mounting for domestic water piping. Thermal insulation may serve as resilient mounting for insulated piping.

E. Suspended water piping shall be anchored with steel struts installed at midpoint of each run.

F. No valve or piece of equipment shall be used to support piping.

G. Pipes through studs or joists shall be isolated from structure with properly sized Hubbard “Hole-Rite” suspension clamps.

3.8 TESTING, INSPECTIONS

A. General

1. This Contractor shall not allow or cause any work of this Section to be covered or enclosed until it has been inspected, tested, and approved by the Architect and the authorities having jurisdictions over the work. Should any of this work by enclosed or covered up before such inspection, testing, and approval, this Contractor shall uncover the work, have the necessary inspections, tests, and approvals made and, at no expense to the Owner, make all repairs necessary to restore both his work and that of other contractors that may have been damaged, to be in conformity with the Contract Documents.

B. Tests

1. This Contractor shall make all tests required by all local, state, and federal laws, codes, ordinances, and regulations having jurisdiction over this work.

2. Furnish all necessary labor, materials, and equipment for conducting tests, and pay all expenses in connection therewith. Should leaks develop while testing, repairs shall be made, and tests shall be repeated until a satisfactory test is obtained.

3. Water Piping shall be hydrostatically tested for 6 hours at 150 psi. All equipment shall be tested water tight at utility pressure.

4. Drainage and Vent Piping shall be tested for 1 hour by plugging all outlets and filling the pipes with water to the top of vertical sections of pipes. No loss of water shall be permitted.

5. For pressures above 14 inches water column, contractor shall test all new gas piping with air at a minimum pressure of 60 psi for a duration of four hours with no discernible reduction in pressure. Shutoff valves may not be used for isolation of piping during testing, unless the valve and valve-closing mechanism are rated for the test pressure.

6. For pressures below 14 inches water column, contractor shall test all new gas piping with air at a minimum pressure of 15 psi for a duration of four hours with no discernible reduction in pressure. Shutoff valves may not be used for isolation of piping during testing, unless the valve and valve-closing mechanism are rated for the test pressure.

7. Upon completion of the installation, the gas utility provider shall test entire piping system, including both new and existing piping, to ensure that the system is safe to be placed in service. Contractor shall be responsible for being familiar with gas utility provider testing requirements and assisting with gas utility provider test procedures. Any leaks or deficiencies shall be repaired at no additional cost to the owner.

3.9 DOMESTIC WATER SYSTEM STERILIZATION

A. Upon completion of this work, the domestic water system shall be thoroughly flushed, sterilized, and reflushed. Sterilization and reflushing shall be performed using the following procedure.

1. All work shall be performed in the presence of the inspector.

2. Introduce chlorine or a solution of sodium hypochlorite, filling the lines slowly and supplying the sterilization agent at a rate of 50 parts of chlorine per million, as determined by residual chlorine tests at the ends of all branches. Open and close all valves while the system is being chlorinated to insure uniform distribution.

3. After the sterilizing agent has been applied for 24 hours, test for residual chlorine at the ends of the branches. If less than 5 ppm is indicated, repeat the sterilization procedure.

4. When tests show at least 5 ppm of residual chlorine, flush out the system until all traces of the chemical are removed.

B. After a period of 48 hours minimum, bacteriological tests, using samples from at least 3 representative points shall be made by recognized testing agency, who shall certify to the Architect that the system is bacteriologically safe and at least equal in safety to that of the principal water supply. The laboratory report and certification shall be transmitted to the Architect and Owner.

3.10 ADJUSTING

A. Properly adjust all stops, and controls, and demonstrate safe and satisfactory operation of all equipment.

3.11 CLEANING

A. Flush all water piping systems. Remove, clean, and replace all strainer baskets prior to final inspection.

B. Blow out all compressible fluid piping with compressed air before connecting with regulators or equipment.

3.12 CLEANUP

A. Upon completion of the work of this Section, remove all surplus material, debris, and equipment associated with or used in the performance of this work.

END OF SECTION

HVAC

SECTION 23 00 00

PART 1 – GENERAL

1.1 INCLUDED

A. This section covers mechanical work, complete. Work includes furnishing, installing, calibrating, adjusting, testing, documenting, and starting up equipment in accordance with these Specifications, the accompanying Plans, and the directions of the Engineer.

1.2 LICENSES, PERMITS, AND FEES

A. The Contractor shall provide, procure, and pay for all licenses, permits, fees, etc. as required to carry on and complete their work.

1.3 CODES AND STANDARDS

A. All work shall be done in code with all applicable local, state, and federal building safety codes, ordinances, and regulations. Additionally, all work shall conform to the latest editions of the following standards:

1. National Fire Protection Association.
2. California Mechanical Code.
3. California Plumbing Code.
4. Underwriters Laboratories.
5. Titles 8, 17, 19, 21, 24 of the California Code of Regulations.
6. California Electric Code.
7. SMACNA Standards.
8. ASHRAE Standards 55 and 62.1.

B. When the Contract Documents call for materials or construction of a higher standard than is required by the above, the Contract Document requirements shall take precedence over the requirements of the applicable laws, ordinances, rules, or regulations. Nothing in the Contract Documents shall be interpreted as permitting work in violation of said laws, rules, and/or regulations.

C. The Contractor for this work shall furnish, without extra charge, any additional materials and/or labor as may be required for compliance with these laws, rules, and/or regulations though such materials and/or labor are not specially set forth in the Contract Documents.

1.4 LICENSING REQUIREMENTS

A. All work of Division 22 and 23 shall be performed by an appropriately licensed contractor. The licenses shall be current, valid through the term of the contract and in the name of the contractor.

1. All HVAC work, which includes warm air heating systems and water heating pumps, ventilating systems, air conditioning systems, and ductwork, registers, flues, humidity, and thermostatic controls in connection with these systems, shall be performed by a C-20 – Warm-Air Heating, Ventilating and Air-Conditioning Contractor.

2. All hydronic piping systems shall be performed by a C-4 – Boiler, Hot Water Heating and Steam Fitting Contractor.

3. All hydronic piping insulation shall be performed by a C-2 – Insulation and Acoustical Contractor.

1.5 SUBMITTALS

A. General Requirements

1. Submittal lists and drawings shall include identifying marks assigned by the Drawings and Specifications.

2. Review of drawings and other material submitted shall not be construed as complete check or constitute a waiver of the requirements of the Drawings and Specifications, but will indicate that the material submitted is acceptable in quality and utility. This review shall not relieve the Contractor of the responsibility to fit the proposed materials to the spaces provided, and to effect necessary rearrangements or construction of other work.

3. All fixtures, materials, and equipment equal in quality and utility to these herein mentioned will be accepted. When specific names are used in describing fixtures, materials, and equipment they are mentioned as standards only, but this implies no right on the part of the Contractor to use other fixtures, material, and equipment or methods, unless approved as equal in quality and utility by the Architect.

4. Before any fixtures, materials, or equipment are purchased, the Contractor shall submit to the Architect for approval, a complete list of materials, fixtures, and equipment, giving the manufacturer’s names, catalog number, capacity, size, power requirements, etc.

5. The Contractor shall submit for the approval of the Architect, shop drawings of proposed material and equipment that differ from the specified materials and

equipment, and of any specified materials and equipment with special conditions and/or arrangements. These drawings shall show necessary modifications of owner, plumbing, electrical, and mechanical work required by the proposed materials and equipment.

B. Submittal – Product Data

1. Submit manufacturer's product data for all HVAC equipment, in compliance with specifications.

C. Coordination/Layout Shop Drawings

1. Prepare complete consolidated layout drawings for all new systems, and for existing systems that are in the same areas. Shop drawings shall be prepared using AutoCAD 2004 or newer and shall be drawn at a minimum ¼" = 1' 0" scale. All drawings shall be fully coordinated with HVAC, Plumbing, Fire Protection, Electrical, Structural, and Architectural work.

2. Clearly identify and dimension the proposed locations of the principal items of equipment and adequate clearance for all equipment, piping, pumps, valves, and other items. Provide detailed layout of all piping systems showing the proposed routes.

3. Show the access means for all items requiring access for operations and maintenance.

4. Submit shop drawings to Architect for approval, prior to fabrication or installation of any work. Do not install equipment or piping until layout drawings have been approved. Any work installed without prior shop drawing approval shall be removed at the Contractor's expense.

1.6 COOPERATION WITH OTHER TRADES

A. Cooperate fully with other trades doing work on the project as may be necessary for the proper completion of the project. Refer to the Structural, Plumbing, and Electrical Drawings for details of the building structure and equipment installation that will tend to overlap, conflict with or require coordination with the work of this Section, and schedule this work accordingly.

B. Any work done without regard for other trades shall be moved, replaced, or redone as required, without extra charges to Owner.

1.7 DIVISION OF WORK BETWEEN DIVISIONS 23 AND 26

A. Close coordination between the electrical and mechanical trades is a part of the work that is required by this contract. No allowance will be made for omissions based on incorrectly assuming another trade will be performing your work. Confirm your scope of work with the general contractor.

B. The division of responsibilities between trades supplying equipment in other Divisions may be different. For instance, Division 26 contractor may be required to

supply disconnect switches and starters for non-HVAC mechanical equipment supplied under other Divisions.

C. Division 23 Responsibilities

1. Assume responsibility for the proper functioning of the HVAC systems in their entirety.

2. Furnish and install all conductors and conduit required for control of HVAC equipment.

3. Make all terminations with the exception of power conductors.

4. Furnish and install all control panels and devices to provide a complete and functional controls system, including all controls transformers.

5. Furnish and install motor starters for all equipment specified in Division 23.

6. Install duct smoke detectors furnished by fire alarm contractor in buildings with fire alarm systems.

7. Furnish and install duct smoke detectors in buildings without fire alarm systems.

8. Furnish and install all control conductors and conduit connecting duct smoke detectors to smoke dampers and fan start controls.

9. All electrical work performed under Division 23 shall conform to the requirements of Division 26.

D. Division 26 Responsibilities

1. Furnish and install all raceways, conduit, disconnect switches, and conductors necessary for electrical power supply.

2. Make all power supply terminations to motors, starters, disconnect switches, control transformers, and other mechanical devices.

3. Fire alarm contractor to furnish duct smoke detectors in buildings with fire alarm systems.

4. Provide power to all duct smoke detectors and smoke dampers.

5. Coordinate all work with mechanical contractors.

1.8 AS-BUILT DRAWINGS

A. A complete set of Contract Drawings shall be maintained at the work site, and all changes in the work shall be recorded on this set, on a daily basis. The final as-built drawings shall be submitted to the Architect for approval.

1.9 DESIGN DRAWINGS

A. The drawings indicate diagrammatically the general layout of the mechanical systems and other related work. Field verification of scaled dimensions taken from the Drawings is required.

B. The Contractor shall review and compare the Architectural, Structural, Plumbing, Mechanical, and Electrical Drawings and all Owner supplied equipment Drawings, and adjust their work to be in conformity with the conditions indicated thereon. Discrepancies between drawings, between drawings and actual field conditions, or between Drawings and Specifications, shall promptly be brought to the attention of the Architect for a determination of the modifications to be effected. In the event that a major modification is required, a Change Order will be prepared.

1.10 VERIFICATION OF EXISTING CONDITIONS AND DEMOLITION

A. Before installation of any new work, verify the location, size, and other conditions at all points of connection to services or other existing piping, and at all locations where new work will cross or pass near existing piping, electrical, or other facilities.

B. Remove ductwork, piping, controls, fixtures, and equipment that is not to remain in service as shown on the Drawings or as required. This included the removal of associated appurtenances and supports.

C. Patch, cap, or repair existing works affected by this demolition in concealed spaces within six (6) inches of a live main or branch.

D. Deliver removed material to the Owner as directed by the Architect. Dispose of all other removed material offsite.

E. Information shown relative to existing services is based upon available records and data during preparation of the Drawings, but shall be verified. Make reasonable deviations found necessary to conform to actual locations and conditions, without extra charge.

1.11 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Furnish three sets of typewritten instructions covering maintenance, adjustment, and operation of each piece of apparatus, bound in a hard cover loose-leaf binder. Neatly obscure or cross out inapplicable data from manufacturer’s literature. Submit data to the Architect.

B. Operating instructions shall show sequence of operations, lubrication, care, and maintenance requirements of all equipment. Final acceptance of the work will not be made until a satisfactory submission of this material is received and approved by the Architect.

C. The Owner’s authorized representative shall be instructed in the operation and servicing of all HVAC & plumbing systems.

1.12 ACCURACY OF DATA

A. The data given herein and on the Drawings are as exact as could be reasonably secured, but absolute accuracy is not guaranteed. Exact locations, distances, elevations, etc. will be governed by shop drawings, the building itself, and actual field conditions.

1.13 DAMAGE BY LEAKS

A. Contractor shall be responsible for any damage to work of other Contractors that is caused by leaks in any temporary or permanent piping systems due to pipe rupture, disconnected pipes or fittings, or by overflow of equipment.

1.14 SEISMIC FORCE RESISTANCE: MECHANICAL, PLUMBING, FIRE PROTECTION SYSTEMS

A. All mechanical systems and plumbing piping systems shall adhere to the SMACNA “Seismic Restraint Manual: Guidelines for Mechanical Systems,” Third Edition dated March 2008.

1.15 DELIVERY, STORAGE, AND HANDLING

A. Contractor shall be responsible for delivery, storage, protection, and placing of all equipment and materials.

1. Contractor shall protect the work and materials from damage during construction. Equipment stored at the job site shall be protected from dust, water, or other damage, and be covered if equipment is exposed to weather. Protect interiors of new equipment and piping systems against entry of foreign matter. Clean both inside and outside before painting or placing equipment in operation.

2. Any items damaged shall be repaired or replaced, at no additional cost to the Owner.

B. Cleanliness of Piping and Equipment Systems

1. Exercise care in storage and handling of equipment and piping material to be incorporated in the work. Remove debris arising from cutting, threading, and welding of piping.

2. Piping systems shall be flushed, blown, or pigged as necessary to deliver clean systems.

3. Contractor shall be fully responsible for all costs, damage, and delay arising from failure to provide clean systems.

1.16 WARRANTIES

A. Equipment warranties shall be provided for all equipment, with all necessary information filled in, except purchase date, in favor of the Owner.

B. The contractor shall guarantee that all work under this Section is free from defects in material and workmanship for a period of one year from the date of filing the Notice of Completion. Replacement of defective work and damage caused to work of other trades as a result of such defective work shall be the responsibility of the Contractor, and shall be made at no cost to the Owner.

1.17 ALTERNATIVE MATERIALS AND METHODS

A. These plans and specifications describe the general scope of the mechanical systems. These plans and specifications do not preclude the submittal of alternative methods or materials. Manufacturer’s names and catalog numbers are stated to identify the type and quality of the equipment or materials required for the project.

B. The contractor may submit shop drawings and/or technical information on alternative equipment, materials or installation details to accomplish the intent of the plans and specifications. Approval of the alternative equipment, materials or installation details shall not relieve the contractor of any responsibility for complying with the intent of the plans and specifications. Submit the manufacturers' technical information, shop drawings, and/or written description of alternative methods for each item described by manufacturer's name and catalog number and for each component, equipment, material, or installation detail required.

1.18 SITE EXAMINATION

A. Thoroughly examine the site and verify the actual work conditions. No extra compensation will be allowed for expenses due to failure to discover site conditions which affect the work.

PART 2 – PRODUCTS

2.1 GENERAL

A. All materials, appliances, and equipment shall be new and best of their respective kinds, free from defects, and of the make, brand, or quality specified or as accepted by the Architect.

B. When two or more units of materials or equipment of the same type or class are required, these units shall be products of one manufacturer.

C. Apply and install all items in accordance with manufacturer’s written instructions. Refer conflicts between manufacturer’s instructions and the contract drawings and specifications to the Architect for resolution.

2.2 HIGH EFFICIENCY GAS HEAT/ELECTRIC COOLING PACKAGED ROOFTOP

A. Decentralized Unitary HVAC Equipment Schedule:

1. Rooftop unit (RTU) schedule:

a. Schedule is per the project specification requirements.

B. HVAC Equipment Insulation (Decentralized, Rooftop Units):

1. Evaporator fan compartment:

a. Interior cabinet surfaces shall be insulated with a minimum 1/2 in. thick, minimum 1-1/2 lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
b. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

2. Gas Heat Compartment:
a. Aluminum foil-faced fiberglass insulation shall be used.
b. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

C. Instrumentation and Control Devices for HVAC (Sensors and Transmitters):

1. Thermostats must:

a. energize both “W” and “G” when calling for heat.
b. have capability to energize 2 stages of cooling, and 2 different stages of heating.
c. include capability for occupancy scheduling.

D. Electric and Electronic Control System for HVAC (Decentralized Rooftop Units):

1. General:

a. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75VA capability.
b. Shall utilize color-coded wiring.
c. Shall include a Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, gas controller, economizer, thermostat, DDC control options, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.
d. The heat exchanger shall be controlled by an integrated gas controller (IGC) microprocessor. See heat exchanger section of this specification.
e. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

2. Safeties:

a. Compressor over-temperature, over-current. High internal pressure differential.

b. Low pressure switch.

1) Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

c. High pressure switch.

1) High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

d. Automatic reset, motor thermal overload protector.
e. Heating section shall be provided with the following minimum protections:

1) High temperature limit switches.
2) Induced draft motor speed sensor.
3) Flame rollout switch.
4) Flame proving controls.

E. Sequence of Operations for HVAC Controls (Decentralized Rooftop Units):

1. INSERT SEQUENCE OF OPERATION

F. Panel Air Filters (Decentralized Rooftop Units):

1. Standard filter section

a. Shall consist of factory installed, low velocity, disposable 2 in. thick fiberglass filters of commercially available sizes.
b. Unit shall use only one filter size. Multiple sizes are not acceptable.
c. Filters shall be accessible through an access panel with “no-tool” removal as described in the unit cabinet section of this specification (23 81 19.13.G).

G. Small-Capacity Self-Contained Air Conditioners:

1. General:

a. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a fully hermetic scroll compressor(s) for cooling duty and gas combustion for heating duty.
b. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
c. Unit shall use Puron® (R-410A) refrigerant.
d. Unit shall be installed in accordance with the manufacturer’s instructions.
e. Unit must be selected and installed in compliance with local, state, and federal codes.

2. Quality Assurance:

a. Unit meets and exceeds ASHRAE 90.1 minimum efficiency requirements.
b. Unit shall be rated in accordance with AHRI Standards 210/240.
c. Unit shall be designed to conform to ASHRAE 15.
d. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
e. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
f. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
g. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001:2015.
h. Roof curb shall be designed to conform to NRCA Standards.
i. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
j. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
k. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
l. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.

3. Delivery, Storage, and Handling:

a. Unit shall be stored and handled per manufacturer’s recommendations.
b. Lifted by crane requires either shipping top panel or spreader bars.
c. Unit shall only be stored or positioned in the upright position.

4. Project Conditions:

a. As specified in the contract.

5. Operating Characteristics:

a. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 at ±10% voltage.
b. Compressor with standard controls shall be capable of operation down to 35°F (2°C), ambient outdoor temperatures. Accessory winter start kit is necessary if mechanically cooling at ambient temperatures down to 25°F (–4°C).
c. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
d. Unit shall be factory configured for vertical supply and return configurations.
e. Unit shall be field convertible from vertical to horizontal airflow on all models. No special kit required.
f. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.

6. Electrical Requirements:

    a. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

7. Unit Cabinet:

    a. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a prepainted baked enamel finish on all externally exposed surfaces.
    b. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 in. minimum, gloss (per ASTM D523, 60°F/16°C): 60, Hardness: H-2H Pencil hardness.
    c. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2 in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the gas heat compartment.
    d. Base of unit shall have a minimum of 4 locations for thru-the-base gas and electrical connections (factory-installed or field-installed), standard.
    e. Base Rail:

        1) Unit shall have base rails on a minimum of 2 sides.
        2) Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
        3) Holes shall be provided in the base rail for moving the rooftop by fork truck.
        4) Base rail shall be a minimum of 16 gauge thickness.

    f. Condensate pan and connections:

        1) Shall be a sloped condensate drain pan made of a corrosion resistant material.
        2) Shall comply with ASHRAE Standard 62.
        3) Shall use a 3/4 in. 14 NPT drain connection, possible either through the bottom or side of the drain pan. Connection shall be made per manufacturer’s recommendations.

    g. Top panel:

        1) Shall be a single piece top panel on all sizes.

    h. Gas Connections:

        1) All gas piping connecting to unit gas valve shall enter the unit cabinet at a single location on side of unit (horizontal plane).

    i. Electrical Connections:

        1) All unit power wiring shall enter unit cabinet at a single, factory prepared, knockout location.

j. Component access panels (standard):

1) Cabinet panels shall be easily removable for servicing.
2) Unit shall have one factory installed, tool-less, removable, filter access panel.
3) Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
4) Handles shall be UV modified, composite. They shall be permanently attached, and recessed into the panel.
5) Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
6) Collars shall be removable and easily replaceable using manufacturer recommended parts.

8. Gas Heat:

a. General:

1) Heat exchanger shall be an induced draft design. Positive pressure heat exchanger designs shall not be allowed.
2) Shall incorporate a direct-spark ignition system and redundant main gas valve.
3) Gas supply pressure at the inlet to the rooftop unit gas valve must match that required by the manufacturer.

b. The heat exchanger shall be controlled by an integrated gas controller (IGC) microprocessor.

1) IGC board shall notify users of fault using an LED (light-emitting diode).
2) The LED shall be visible without removing the control box access panel.
3) IGC board shall contain algorithms that modify evaporator fan operation to prevent future cycling on high temperature limit switch.
4) Unit shall be equipped with anti-cycle protection with one short cycle on unit flame rollout switch or 4 continuous short cycles on the high temperature limit switch. Fault indication shall be made using an LED.

c. Standard Heat Exchanger construction

1) Heat exchanger shall be of the tubular-section type constructed of a minimum of 20-gauge steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance.
2) Burners shall be of the in-shot type constructed of aluminum-coated steel.
3) Burners shall incorporate orifices for rated heat output up to 2000 ft (610 m) elevation. Additional accessory kits may be required for applications above 2000 ft (610 m) elevation, depending on local gas supply conditions.
4) Each heat exchanger tube shall contain multiple dimples for increased heating effective-ness.

d. Induced draft combustion motor and blower:

1) Shall be a direct-drive, single inlet, forward-curved centrifugal type.
2) Shall be made from steel with a corrosion resistant finish.
3) Shall have permanently lubricated sealed bearings.
4) Shall have inherent thermal overload protection.
5) Shall have an automatic reset feature.

9. Coils:

a. Standard Aluminum Fin-Copper Tube Coils:

1) Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
2) Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
3) Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.

10. Refrigerant Components:

a. Refrigerant circuit shall include the following control, safety, and maintenance features:

1) TXV metering system on all models shall include a multiple feed distribution system that optimizes coil performance.
2) Refrigerant filter drier — Solid core design.
3) Service gauge connections on suction and discharge lines.
4) Pressure gauge access through a specially designed access port in the top panel of the unit.

b. There shall be gauge line access port in the skin of the rooftop, covered by a black, removable plug.

1) The plug shall be easy to remove and replace.
2) When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.
3) This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
4) The plug shall be made of a leak proof, UV-resistant, composite material.

c. Compressors:

1) Unit shall use fully hermetic, 2-stage scroll compressor on a single refrigeration circuit.
2) Compressor motors shall be cooled by refrigerant gas passing through motor windings.

3) Compressors shall be internally protected from high discharge temperature conditions.
4) Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
5) Compressor shall be factory mounted on rubber grommets.
6) Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
7) Crankcase heaters shall not be required for normal operating range, unless required by compressor manufacturer due to refrigerant charge limits.

11. Filter Section:

a. Filters access is specified in the unit cabinet section of this specification.
b. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
c. Shall consist of factory installed, low velocity, throw-away 2 in. thick fiberglass filters.
d. Filters shall be standard, commercially available sizes.
e. Only one size filter per unit is allowed.

12. Evaporator Fan and Motor with EcoBlue™ Technology:

a. Direct Drive Evaporator fan motor:

1) Shall be a ECM motor design.
2) Shall have permanently lubricated bearings.
3) Shall have inherent automatic-reset thermal overload protection.
4) Shall have slow ramp up to speed capabilities.
5) Shall require no fan/motor belts for operation, adjustments and or initial fan speed set up.
6) Fan DC voltage set up on Unit Control Board can eliminate the need of removal of blower access door, required on conventional belt drive systems.
7) Shall be internally protected from electrical phase reversal and loss.

b. Evaporator Fan:

1) Shall be easily set with selection switch and adjustment pot on unit control board or through SystemVu™ controller.
2) On all sizes 04-06 which have 2-stage cooling capacity control, the indoor fan speed is automatically controlled to meet the AHRI performance requirement with 75% low fan speed and 100% at full fan speed operation
3) Blower fan shall be a Vane Axial fan design with 75% less moving parts than a conventional belt drive system.
4) Shall be constructed of a cast aluminum stator and high impact composite material on rotor and air inlet casing.
5) Shall be a patented / pending design with a corrosion resistant material and dynamically balanced.

6) Shall have slow ramp up to speed capabilities to help reduce sound and comfort issues typically associated with single speed belt drive systems.
7) Shall be a slide out design with 2 screw removal.

c. Shall include an easily accessible Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, gas controller, economizer, thermostat, DDC control options, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.

13. Condenser Fans and Motors:

a. Condenser fan motors:

1) Shall be a totally enclosed motor.
2) Shall use permanently lubricated bearings.
3) Shall have inherent thermal overload protection with an automatic reset feature.
4) Shall use a shaft-down design on all sizes.

b. Condenser Fans:

1) Shall be a direct-driven propeller type fan constructed of high impact composite mate-rial.
2) Shall have high impact composite blades completely formed into one piece without blade fasteners or connectors and shall be dynamically balanced.

14. Special Features Options and Accessories:

a. Manual damper (field-installed only):

1) Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 25% or 50% outdoor air for year round ventilation.

b. Hinged Access Panels:

1) Shall provide easy access through integrated quarter turn latches.
2) Shall be on major panels of: filter, control box, fan motor, and compressor.

2.3 THERMOSTATS

A. Electric, solid-state, microcomputer-based room thermostat with the following features.

1. Automatic switching from heating to cooling.

2. Preferential rate control to minimize overshoot and deviation from set point.

3. Set up for four separate temperatures per day.

4. Instant override of set point for continuous or timed period from 1 hour to 31 days.

5. Short-cycle protection.

6. Programming based on every day of week.

7. Selection features include degree F or degree C display, 12- or 24-hour clock, keyboard disable, remote sensor, and fan on-auto.

8. Battery replacement without program loss.

9. Thermostat display features include the following:

   a. Time of day.
   b. Actual room temperature.
   c. Programmed temperature.
   d. Programmed time.
   e. Duration of timed override.
   f. Day of week.
   g. System mode indications include "heating," "off," "fan auto," and "fan on."

B. Thermostat Cover Construction: Heavy-duty, locking thermostat guard, of solid metal tamperproof construction.

C. Accuracy: Plus or minus 0.5 deg. F at calibration point.

D. Wire: Twisted, shielded-pair cable.

E. Contractor shall field verify dimensions prior to ordering fan and curb adaptor.

2.4 DUCTWORK

A. Sheet Metal Ductwork – Rectangular

1. Ducts and plenums shall be fabricated and installed in conformance with the latest editions of: NFPA Pamphlet No. 90A; California Building Code; California Mechanical Code and the SMACNA HVAC Duct Construction Standards (Metal and Flexible). Ducts and plenums shall be constructed of hot dipped galvanized mild steel and shall have airtight Class “B” seals at all transverse joints and longitudinal seams. Tables and figures hereinafter referenced are from the 2005 edition of the SMACNA HVAC Duct Construction Standards (Metal and Flexible).

2. Rectangular duct construction shall conform to Table 2-3. All transverse joints shall be flanged per Table 2-32, with corner closures or “Duct Mate” flanged connections with corner closures per Figure 2-17. Elbows shall be standard

radius (Type RE 1) or square throat with vanes (Type RE 2) per Figure 4-2, with double thickness turning vanes per Figures 4-3 and 4-4. Offsets and transitions shall be per Figure 4-7. Supply, return, and exhaust branch connections shall be per Figure 4-5 or 4-6. Splitters shall not be used.

3. Lined ducts shall be fabricated such that the net inside dimensions equals the duct sizes shown on the Drawings.

B. Sheet Metal Ductwork – Spiral

1. Round ducts shall be spiral, United McGill or equal. All transverse joints and longitudinal seams shall have Class “B” seals. All branches in round duct systems shall be made with factory fabricated reducing wye branches. Duct turns shall be made with standard, factory fabricated, three-piece elbows.

C. Flexible Ductwork

1. Flexible ducts shall be Flexmaster “8M” or approved equal. Flexible ducts shall be used only where shown on the Drawings, and maximum length of any given flexible duct shall not exceed 5 ft. Galvanized sheet metal elbows shall be used for turns greater the 45° on flexible ducts 10” and larger. Connections to rectangular ducts shall be made with “spin-in” fittings with air scoops. The installation of flexible ducts shall conform to Figure 3-10, with the exceptions noted herein.

D. Supports

1. Supports for horizontal ducts and plenums shall be fabricated per Figures 5-5 and 5-6 and Tables 5-1, 5-2, and 5-3. The maximum distance between hangers shall be eight feet for rectangular ducts and twelve feet for round ducts. Attachments to the structure shall be made with adequately sized lag bolts for straphangers and adequately sized machine bolts and side beam brackets for rod hangers. Supports for vertical ducts shall be band iron strap or angle bracket type per Figure 5-8 and 5-9.

E. Specialties:

1. Duct Access Doors: Including those for removing filters, duct access doors shall be as detailed in Figure 7-2 with sash locks, piano hinges, and gaskets. Access doors shall have an unobstructed full swing.

2.5 DUCTWORK ACCESSORIES

A. Flexible Duct Connections

1. Duro-Dyne “Metal-Fab” with Duroion, Ventfabrics “Ventglass,” or approved equal.

2. Install at each point where a blower unit is connected to a duct. A minimum clearance of three inches between the duct and the source of vibration shall be maintained. Install per Figure 2-17.

B. Screens

1. Install removable bird screens at all outside intakes and exhaust air discharges. Screens shall be fabricated from ½" x 14 gauge mesh secured in full frames. Screens and frames shall be constructed of the same material as the duct, hood, or equipment to which attached.

C. Joints

1. Tape all joints airtight using Hardcast type "DT" pressureless tape and "HD-20" adhesive, per manufacturer's directions.

D. Dampers

1. Provide butterfly or multi-blade dampers where indicated on the Drawings or as required for balancing air quantities to values shown without generating excessive noise. Provide Duro-Dyne "KS-385," or approved equal, locking quadrants on each manual damper. Locate dampers in furred ceilings near access panels where possible.

    a. Butterfly dampers shall be constructed as per Figure 7-4, Figure A, B, and C in the duct manual.
    b. Multi-blade dampers shall conform to Figure 7-5.
    c. Back-draft dampers shall be Air Balance "Air Dynamic" model DY-1002-V, or equal.

2.6 INSULATION

A. Exterior of Ductwork:

1. Unless specified to be lined, all sheet metal supply and return ducts in indirectly conditioned spaces shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-6 installed.

2. Unless specified to be lined, all sheet metal supply and return ducts in unconditioned spaces shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-8 installed.

3. All outside air ductwork between building outside air inlet and HVAC unit or heat/energy recovery ventilator shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-4 installed.

4. Exhaust ductwork within 10 feet of termination point and between any heat/energy recovery ventilator and exhaust termination shall be insulated on the outside with Johns Manville “Microlite XG” flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-4 installed.

B. Interior of Ductwork:

1. Duct lining shall be installed in supply and return ducts and plenums where noted on the Drawings. Lining shall be Johns Manville “PermacoteLinacoustic R” rigid fiberglass board for plenums and “PermacoteLinacoustic HP” fiberglass duct liner for ducts, 1” thick, unless otherwise noted, with fire resistant coating. Duct liner shall meet ASTM C 1071, with air surface coated with acrylic coating treated with EPA registered anti-microbial agent prove to resist microbial growth as determined by ASTM G 21 and G 22. Insulation with torn or broken coating shall be removed and replaced. Loose corners, edges, and butt joints will not be accepted.

2. All exposed exterior supply and return ductwork shall have minimum 2” interior insulation, as specified in this section.

3. Maximum velocity: 5,000 ft/min.

4. Fasteners: duct liner galvanized steel pins, welded or mechanically fastened.

5. Developed smoke density shall not exceed 50. Flame spread rating shall not exceed 25.

2.7 REGISTERS, GRILLES, AND DIFFUSERS

A. Air terminals shall be Titus, equivalent Nailor, or approved equal, as scheduled on the Drawings.

B. All terminals shall be steel and shall be factory painted “off-white,” unless otherwise noted. Air terminals for installation in gypsum board shall have a 1” border for surface mounting.

2.8 ACCESS PANELS

A. Where construction is not inherently accessible, provide adequately sized and conveniently located access doors in ceilings, walls, and furring for servicing valves, equipment, etc. Doors shall be delivered to the General Contractor for installation.

B. Fire Rated: Inryco/Milcor, U.L. listed, “B” label, 1 ½ hour rating. Minimum size shall be 12” x 12”. Provide larger sizes where required. Locks shall be flush screwdriver operated.

C. Drywalled Surfaces: Inryco/Milcor, Style DW, prime coated steel. Minimum size shall be 12” x 12”. Provide larger sizes where required. Locks shall be flush screwdriver operated.

D. Concrete and Tiled Surfaces: Inryco/Milcor, Style M, prime coated steel, except access panels installed in tiled surfaces shall be stain finish stainless steel. Minimum size shall be 12” x 12”. Provide larger sizes where required. Locks shall be flush screwdriver operated.

E. Plastered Surfaces: Inryco/Milcor, Style K, prime coated steel. Minimum size shall be 12” x 12”. Provide larger sizes where required. Locks shall be flush screwdriver operated.

2.9 FIRE/SMOKE DAMPERS

A. All fire/smoke dampers shall be Ruskin FSD60 series combination fire smoke dampers or approved equal. Rated for 1-1/2 hour fire resistance in accordance with UL555, Leakage Class I Smoke Damper in accordance with UL555S.

B. Frame: 5 inches x minimum 16 gage (127 x minimum 1.6 mm) roll formed, galvanized steel hat-shaped channel, reinforced at corners.

C. Blades: True airfoil-shaped, single piece, double skin. Material: Minimum 14 gage (2.0 mm) equivalent thickness, galvanized steel.

D. Blade Seals: Inflatable silicone fiberglass material to maintain smoke leakage rating to a minimum of 450°F (232°C) and galvanized steel for flame seal to 1,900°F (1,038°C). Mechanically attached to blade edge (glue-on or grip type seals are not acceptable).

E. Jamb Seals: Stainless steel, flexible metal compression type.

F. Axles: Minimum ½ inch (13) diameter plated steel, hex-shaped, mechanically attached to blade.

G. Provide TS 150EZ Fire Stat, UL classified dual temperature device that allows the damper to be re-opened after initial closure from heat.

H. Where a total coverage fire alarm system is not provided in the building, provide factory duct smoke detector kit, Ruskin DSDF, with “single-point” electrical connections.

I. Minimum 20 gauge factory sleeve.

J. Factory mounting angles with pre-punched screw holes.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Provide all necessary cutting in connection with the work of the Section. No cutting shall be done without the approval of the Architect. Comply with requirements specified in Cutting and Patching Section.

B. No structural members shall be drilled, bored, or notched in a manner that will impair their structural capacity.

C. All penetrations of concrete or masonry shall be made with core drills.

3.2 EQUIPMENT STARTUP

A. Notify the Owner's representative a minimum of two weeks prior to equipment startup date to allow for Owner's personnel to be present during startup.

B. Manufacturer must provide a service technician to supervise rigging of the units to ensure proper fit.

C. Unit must be checked out, tested and placed into operation by the installing contractor under the supervision of an authorized representative of the factory.

D. Controls contractor must be present during startup to ensure that factory-installed controls have been adequately installed, wired, and integrated into the building managements system.

E. Provide minimum eight (8) hours of training time with Owner's maintenance personnel to thoroughly review new equipment, maintenance requirements, and equipment controls.

F. During startup, the full functionality of the equipment shall be demonstrated to the satisfaction of the Owner's representative, including heating, mechanical cooling, economizer cooling, zone modulation, and all emergency shutdown features.

3.3 EQUIPMENT, GENERAL REQUIREMENTS

A. Equipment shall operate quietly and without objectionable vibration. Such problems, other than from equipment operating at optimum conditions, shall be the Contractor's responsibility and shall be eliminated at the direction of the Architect.

B. Install equipment to provide good appearance, easy access, and adequate space to allow replacement and maintenance. Provide bases, supports, anchor bolts, and other items required to achieve this. Installation shall be level, above moisture level, and adequately braced.

C. Thoroughly lubricate equipment before operating. Repair of damage resulting from failure to comply with this requirement shall be the Contractor's responsibility.

D. Connections to piping shall be secured and properly aligned and all utility and control connections shall be properly isolated from the building structure by means of vibration isolators and flexible connections. Any equipment not meeting this requirement will be modified and reinstalled at no expense to the Owner.

E. Move equipment into building through available openings. Dismantle equipment where necessary to accomplish this. After reassembly, test equipment to verify its satisfactory operating condition.

3.4 DUCTWORK

A. All ductwork shall be installed within spaces provided where possible. Ducts shall be installed true to line and grade, fully secured to structural faming with specified hangers and supports, insulated, and vibration isolated, where required.

B. Each section of supply air ductwork shall be cleaned at the shop, dust and oil free, using a degreasing agent and detergent and sealed airtight at both ends with visqueen and tape. Supply ducts shall be additionally cleaned with a disinfecting solution. Ends of all supply and internally insulated exhaust dusts shall be kept sealed until the time they are jointed. When duct sections are joined, wipe down all interior surfaces with a clean tack cloth. If tack cloth shows any dust, then re-clean duct as described above. The intent is that no foreign matter be allowed to enter the ductwork at any time after factory cleaning and during construction.

3.5 CONTROLS

A. This Contractor shall provide all required control components, including but not limited to thermostats, temperature sensors, static pressure sensors, humidity sensors, damper actuators, valve actuators, unitary controllers, relays, and low-voltage wiring, such that the Owner is provided with a fully functional control system.

B. Where work is performed in an existing building, this Contractor shall integrate all control modifications into the existing building control system, if applicable. Specific requirements shall be coordinated with Owner and approved by Architect prior to installation.

C. Installation of the system shall be made under the supervision of the manufacturer of the equipment, or his factory authorized representative.

D. In addition to the submittals required above, and those set forth in “Submittals,” the following items shall be furnished.

1. In an existing building, this Contractor shall furnish a document that describes the proposed materials methods for integration into the existing building management system, if applicable.

2. Prior to final inspection, the system contractor shall furnish a letter stating that the entire control system and all interlock wiring is installed and operating in a satisfactory manner.

3.6 THERMOSTAT

A. Room thermostats shall be installed in the locations indicated on the Contract Drawings. Final locations shall be coordinated with Owner’s maintenance personnel and shall be installed in locations which shall provide representative temperatures for the adjacent areas.

B. Low voltage control wiring and conduit shall be installed in accordance with requirements of Division 26.

3.7 INSULATION

A. Exterior Ductwork:

1. The insulation shall be cut longer than the perimeter of the duct to provide 2” staple lap and minimum compression at the corners. All joints shall be lapped 2’ and stapled with outward clinching staples 2” on center. The insulation shall be mechanically fastened to the underside of all ducts 24” wide or more using cup-head pins, weld pins, or stick pins with speed clips 18” on center. All joints and penetrations of the vapor barrier jacket shall be sealed with a minimum 3” wide matching pressure sensitive tape. Pressure-sensitive tape shall be firmly rubbed in place immediately after application using a “squeegee” type tool.

2. When a vapor seal is required, two coats of vapor retarder mastic reinforced with one layer of 4” wide, open weave glass fabric may be used in lieu of pressure-sensitive tape. Mastic shall be brushed onto joint and glass fabric until the fabric is filled. Mastics shall be applied in accordance with application instructions on the container.

B. Interior Duct Liner

1. Apply to the inside face of ducts, coated side facing air stream, fasten using fire retardant adhesive meeting ASTM C 9169, and secure with mechanical liner fasteners at 24” maximum o.c., both directions. Pin length should be such as to limit compression of liner.

2. Exposed edges must be factory or field coated. For systems operating at 4000 fpm or higher, a metal nosing must be installed on all liner leading edges. Insulation with torn or broken coatings shall be removed or replaced. Loose corners, edges, and butt joints will not be accepted.

3.8 FIRE / SMOKE DAMPERS

A. Inspect areas to receive dampers. Notify the Engineer of conditions that would adversely affect the installation or subsequent utilization of the dampers. Do not proceed with installation until unsatisfactory conditions are corrected.

B. Install dampers at locations indicated on the drawings and in accordance with the manufacturer’s UL approved installation instructions. Install dampers square and free from racking with blades running horizontally. Do not compress or stretch damper frame into duct or opening. Handle damper using sleeve or frame. Do not lift damper using blades, actuator, or jackshaft.

C. Install bracing for multiple section assemblies to support assembly weight and to hold against system pressure. Install bracing as needed.

3.9 SUPPORTS AND HANGERS

A. All hangers, supports, and attachments to the structure must be capable of withstanding three times the anticipated load.

3.10 TEST, INSPECTIONS

A. Make all necessary control adjustments and balancing of air and water flows. Operate the entire system for a period of time not less than three (3) working days for the purpose of proving satisfactory performance. During this period, instruct such persons as the Owner and/or Architect may designate in the proper operation of the systems. Should further adjustment prove necessary, operating tests shall be repeated until a satisfactory test is obtained.

B. This Contractor shall not allow or cause any work of this Section to be covered or enclosed until it has been inspected, tested, and approved by the Architect and the authorities having jurisdiction over the work. Should any of this work be enclosed or covered up before such inspection, testing, and approval, this Contractor shall uncover the work, have the necessary inspections, tests, and approvals made and, at no expense to the Owner, make all repairs necessary to restore both his work and that of other contractors which may have been damaged to be in conformity with the Contract Documents.

3.11 CLEANUP

A. Upon completion of the work of this Section, remove all material, debris, and equipment associated with or used in the performance of this work.

END OF SECTION

TESTING, ADJUSTING, BALANCING

SECTION 23 05 93

PART 1 GENERAL

1.1 SCOPE

A. Provide all supervision, personnel, instruments, calibration, equipment, and all other materials necessary to perform balancing and testing, and compile test data including calculations and services necessary for the heating, ventilating, and air conditioning systems for this project, all in accordance with the project Drawings and Specifications and as specified herein.

1.2 GENERAL

A. Mechanical Contractor will employ a Testing, Adjusting, and Balancing (TAB) Agency that is certified by Associated Air Balancing Council (AABC), National Environmental Balancing Bureau (NEBB), or Testing, Adjusting, and Balancing Bureau (TABB).

B. The TAB Agency shall be responsible for inspecting, balancing, adjusting, testing, and logging the data of the performance of fans, all dampers in the duct systems, all air distribution devices, and the flows of water through all coils.

C. Existing equipment, unless specifically mentioned otherwise, shall not in the scope of the TAB work.

D. A completely operable system shall be placed into operation each day during testing and balancing.

E. The TAB Agency shall utilize instrumentation which meets the requirements of ASHRAE 111, Section 5, “Instrumentation”.

F. The Mechanical Contractor shall be responsible for certifying in writing that the system, as scheduled for balancing, is operational and complete. Completeness shall include not only the physical installation, but the Mechanical Contractor’s certification that the prime movers are installed in good working order, and that full load performance has been preliminary tested under the certification of the Mechanical Contractor. Before any testing and balancing is started, a complete report shall be sent to the TAB Agency by the Mechanical Contractor.

G. The Mechanical Contractor shall be responsible for making all modifications to recertify discrepancies reported by the TAB Contractor as indicating non-compliance with the Contract Documents. By completing the work on time, the Mechanical Contractor shall provide sufficient time before the completion date so that balancing can be accomplished.

H. If construction deficiencies are encountered which preclude obtaining optimum conditions, the deficiencies will be recorded and given to the Owner's representative. The TAB Agency is advised that deficiencies in the HVAC construction are often encountered during final TAB services, and should include in the bid an amount deemed advisable to compensate for time in identifying the deficiencies.

1.3 SERVICES

A. The TAB Agency will balance, test, and adjust the systemic components to obtain optimum conditions in each conditioned space in the building. If construction deficiencies are encountered which preclude obtaining optimum conditions, the deficiencies will be recorded and given to the Owner's representative. The TAB Agency is advised that deficiencies in the HVAC construction are often encountered during final TAB services, and should include in the bid an amount deemed advisable to compensate for time in identifying the deficiencies.

B. The report shall be complete with logs, data, and records as required herein and all logs, data, and records shall be typed, produced, on white bond paper, and bound. Transmit four copies directly to the Owner's Representative to be distributed to the Mechanical Contractor, Controls Contractor, Engineer, and record file.

C. The report shall contain the following general data in a format selected by the TAB Agency for clarity and ease of reference.

1. Project Title.

2. Project Location.

3. Project Architect (Firm name and address).

4. Project Mechanical Engineer (Name).

5. TAB Field Test Engineer (Name).

6. TAB Agency (Firm name and address).

7. Inclusive dates tests were performed and date of report.

8. Calibration Certificates of each instrument used along with specific ID numbers (i.e., serial numbers).

1.4 SUBMITTALS

A. Submittal No. 15950 (1) – TAB Agenda

1. The TAB Contractor shall submit a complete agenda, which shall outline in full the testing methods and locations for each HVAC system and/or device that is within the scope of the TAB work. The agenda shall represent the total system balance report, less field test data. Areas of intended field test inputs shall be represented by fully labeled blank spaces.

2. The TAB Agenda shall also indicate the proposed test methods, instrumentation devices and all applicable calibration certificates.

B. Submittal No 15950 (2) – TAB Report

1. Provide Test and Balance Report as indicated herein.

1.5 AIR SYSTEMS REQUIREMENTS

A. In addition to the above data in its appropriate format, the Test and Balance Report shall include the following data:

1. Packaged Rooftop Units

a. Manufacturer and model.
b. Size.
c. Motor hp, voltage, phase, cycles, full load amps.
d. Location and local identification data.
e. Identification tag listed in schedules on drawings and specifications.
f. Supply airflow (cfm) and exhaust airflow (cfm), where applicable.
g. Fan RPM.
h. Motor current readings at each fan.
i. Inlet and outlet static pressure from supply fan and exhaust fan (if applicable). These readings shall be related to the fan curve.
j. Static pressure differential across each coil and filter section.
k. Entering air and leaving air temperatures (DB/WB) in 100% cooling mode.
l. Entering air and leaving air temperatures (DB) in 100% heating mode.
m. Outdoor air percentage setting.
n. Outdoor airflow in economizer mode (if applicable).
o. Outdoor airflow in demand control ventilation mode (if applicable).

2. Roof Exhaust Fans

a. Manufacturer and model.
b. Size.
c. Motor hp, voltage, phase, cycles, full load amps.
d. Location and local identification data.
e. Identification tag listed in schedules on drawings and specifications.
f. Exhaust airflow (cfm).
g. Fan RPM.
h. Motor current readings at each fan.

PART 2 – PRODUCTS (not used)

PART 3 – EXECUTION

3.1 GENERAL PROCEDURES

A. During the balancing, the temperature regulation shall be adjusted for proper relationship between controlling instruments and calibrated. The correctness of the final setting shall be proved by taking hourly readings for a period of one successive

8-hour day, in a typical room on each separately controlled zone, after tenant moves in. The total variation shall not exceed 2 degrees from the preset medium temperature during the temperature survey period. (This will be done only on systems that are totally operational).

3.2 AIR SYSTEMS PROCEDURES

A. The TAB Agency shall perform the following tests and balance the air systems in accordance with the following requirements:

1. Test and adjust blower and motor rpm to design requirements.

2. Test and record motor full load amperes and corresponding voltage.

3. Make pitot tube traverse of main supply ducts and obtain design cfm at fans.

4. Test and record system static pressures, suction and discharge.

5. Test and adjust system for design cfm of outside air.

6. Test and record entering and leaving air dry bulb temperatures of all heating and cooling coils.

7. Test and record entering and leaving wet bulb temperatures of all cooling coils.

8. Adjust all main supply and return air ducts to proper design cfm. System supply airflow, system return airflow, and system outdoor airflow shall be balanced to within 5% of the design requirement.

9. Adjust all zones to proper design cfm, supply and return.

10. Test and adjust each diffuser, grille, and register to within 10% of design requirement.

11. Each grille, diffuser, and register shall be identified as to location and area.

12. Size, type, and manufacturer of diffusers, grilles, registers, and all tested equipment shall be identified and listed. Manufacturer’s ratings on all equipment shall be used to make required calculations.

13. Readings and test of diffusers, grilles, and registers shall include required fpm velocity and test resultant velocity, required cfm and test resultant cfm after adjustments.

14. TAB Agency shall check all controls to ensure they are operating as specified. Provide the control contractor with specific set points.

3.3 TEMPERATURE CONTROL SYSTEM

A. In the progress of performing the TAB work, the TAB Agency shall:

1. Work with the Controls Contractor to ensure the most effective total system operation within the design limitations, and to obtain mutual understanding of intended control performance.

2. Verify that all control devices are properly connected.

3. Verify that all dampers, valves, and other controlled devices are operated by the intended controller.

4. Verify that all dampers and valves are in the position indicated by the controller (open, closed, or modulating).

5. Verify that the integrity of valves and dampers in terms of tightness of close-off and full-open position. This includes dampers in multi-zone units.

6. Check that all valves are properly installed in the piping system in relation to direction of flow and location.

7. Verify the calibration of all controllers.

8. Verify the proper application of all normally open and normally closed valves.

9. Check the locations of all thermostats and humidistats for potential erratic operation from outside influences such as sunlight, drafts, or cold walls.

10. Check the locations of all sensors to determine whether their position will allow them to sense only the intended temperatures or pressures of the media. Controls Contractor will relocate as deemed necessary by the TAB Agency.

11. Check the sequence of operation for any control mode is in accordance with approved shop drawings. Verify that only minimum simultaneous heating and cooling occurs. Observe that heating cannot take place until the cooling zone of valve is completely closed.

12. Verify that all controller set points meet the design intent.

13. Check all dampers for free travel.

14. Verify the operation of all interlock systems.

15. Perform all system verification to assure the safety of the system and its components.

B. A systematic check of the above requirements shall be included in the final TAB report.

3.4 DUCT LEAKAGE TEST

A. All supply, return, exhaust, and outside air ductwork shall be tested for leaks, using necessary instruments before insulating any ductwork.

B. Ductwork shall be leak-tested in accordance with SMACNA HVAC Air Duct Leakage Test Manual. Representative sections totaling not less than 10 percent of the total installed duct area shall be tested. Where the tested 10 percent fails to comply with the requirements of this section, then 40 percent of the total installed duct area shall be tested. Where the tested 40 percent fails to comply with the requirements of this section, then 100 percent of the total installed duct area shall be tested.

C. The maximum permitted leakage shall be determined in accordance with CMC 603.10.1.

D. The test and balance report shall include the results of the duct leakage test for the engineer's review.

3.5 TEST AND BALANCE REPORT

A. The report shall contain the following data:

1. A listing of the measured air quantities at each outlet corresponding to the temperature tabulation specified above.

2. Air quantities at each return and exhaust air handling device (only if ducted return systems).

3. Static pressure readings entering and leaving each supply, return and exhaust fan, filter, and coil of the system. These readings shall be related to fan curves in terms of cfm handled.

4. Motor current readings at each fan. The voltages at the time of the readings shall be listed.

3.6 FINAL ACCEPTANCE

A. At the time of final inspection, the Balancing Agency shall recheck, in the presence of the Owner's Representative, specific and random selections of data, i.e., water and air quantities, recorded in the Certified Report.

B. Points and areas for recheck shall be selected by the Owner's Representative.

C. Measurement and test procedures shall be the same as approved for work forming basis of Certified Report.

D. Selections for recheck, specific plus random, will not normally exceed 25% of the total number tabulated in the report, except that special air systems may require a complete recheck for safety reasons.

E. If random tests elicit a measured flow deviation of 10% or more from that recorded in the Certified Report on 10% or more of the selected recheck stations, the report shall be automatically rejected. In the event the report is rejected, all systems shall be readjusted and tested, new data recorded, new Certified Report submitted, and new inspection tests made, all at no additional cost to the Owner.

F. Following final acceptance of the Certified Report by the Owner's Representative, the settings of all splitter, dampers, and other adjustment devices shall be permanently marked by the TAB Agency, so that adjustment can be restored if disturbed at any time. Devices shall not be marked until after final acceptance.

END OF SECTION

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

SECTION 26 05 19

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Copper building wire rated 600 V or less.

2. Metal-clad cable, Type MC, rated 600 V or less.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.

B. Standards:

1. Listed and labeled as defined in CEC, by a qualified testing agency, and marked for intended location and use.

2. RoHS compliant.

3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Conductors: Copper, complying with ASTM B 3 for bare annealed copper and with ASTM B 8 for stranded conductors.

D. Conductor Insulation: Type THHN and Type THWN-2: Comply with UL 83.

2.2 METAL-CLAD CABLE, TYPE MC

A. Description: A factory assembly of one or more current-carrying insulated conductors in an overall metallic sheath.

B. Standards:

1. Listed and labeled as defined in CEC, by a qualified testing agency, and marked for intended location and use.

2. Comply with UL 1569.

3. RoHS compliant.

4. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Circuits: Single circuit with color-coded conductors.

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

E. Ground Conductor: Insulated

F. Conductor Insulation: Type THHN/THWN-2: Comply with UL 83.

G. Armor: Aluminum, interlocked.

H. Jacket: PVC applied over armor for use in wet locations.

2.3 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in CEC, by a qualified testing agency, and marked for intended location and use.

B. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

PART 3 – EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.

3.3 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque- tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

3.4 IDENTIFICATION

A. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.

END OF SECTION

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

SECTION 26 05 26

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes grounding and bonding systems and equipment.

1.2 BONDING AND EQUIPMENT GROUNDING

A. Description of System: In general, all electrical equipment (metallic conduit, motor frames, panelboards, etc.) shall be bonded together with a green insulated copper system grounding conductor in accordance with specific rules of Article 250 of the CEC Equipment grounding conductors through the raceway system shall be continuous from main switch ground bus to panel ground bar of each panelboard, and from panel grounding bar of each panelboard to branch circuit equipment and devices.

B. Equipment Grounding Conductors: All raceways shall have an insulated copper system ground conductor run throughout the entire length of the circuit installed within conduit in strict accordance with CEC. Grounding conductor shall be included in total conduit fill when determining conduit sizes, even though not included or shown on drawings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in CEC, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.

2.3 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Cable-to-Cable Connectors: Compression type, copper or copper alloy.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by CEC:

1. Feeders and branch circuits.

2. Lighting circuits.

3. Receptacle circuits.

4. Three-phase motor and appliance branch circuits.

5. Flexible raceway runs.

6. Armored and metal-clad cable runs.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

END OF SECTION

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

SECTION 26 05 29

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel slotted support systems.

2. Conduit and cable support devices.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any parts when subjected to the seismic forces specified."

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch- diameter holes at a maximum of 8 inches o.c. in at least one surface.

1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.

2. Material for Channel, Fittings, and Accessories: Stainless steel, Type 304 Stainless steel.

3. Channel Width: Selected for applicable load criteria.

4. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA- 4.

6. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Conduit and Cable Support Devices: Galvanized Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

PART 3 EXECUTION

3.1 APPLICATION

A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:

1. NECA 1 (Good Workmanship Standards).

2. NECA 101 (Metallic Raceway Standards).

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT as required by CEC. Minimum rod size shall be 1/4 inch in diameter.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT and RMC may be supported by openings through structure members, according to CEC.

C. Strength of Support Assemblies: Where indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts with minimum 3” embedment.

2. To Existing Concrete: Expansion anchor fasteners.

3. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.

4. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69.

5. To Light Steel: Sheet metal screws.

6. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that comply with seismic-restraint strength and anchorage requirements.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Touchup: Comply with requirements in Specification Division 09 and Architectural plan sheets for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780

END OF SECTION

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

SECTION 26 05 33

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes: Metal conduits and fittings.

1.3 ACTION SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. Metal Conduit:

1. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. EMT: Comply with ANSI C80.3 and UL 797.

3. FMC: Comply with UL 1; zinc-coated steel.

4. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

B. Metal Fittings:

1. Comply with NEMA FB 1 and UL 514B.

2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

3. Fittings, General: Listed and labeled for type of conduit, location, and use.

4. Fittings for EMT:

a. Material: Steel.
b. Type: Setscrew.

5. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

2.2 BOXES, ENCLOSURES, AND CABINETS

A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

C. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

D. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

E. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.

F. Gangable boxes are allowed.

G. Cabinets:

1. NEMA 250, Type 1 galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.

2. Hinged door in front cover with flush latch and concealed hinge.

3. Key latch to match panelboards.

4. Metal barriers to separate wiring of different systems and voltage.

5. Accessory feet where required for freestanding equipment.

6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

2. Boxes and Enclosures, Aboveground: NEMA 250, Type 4.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.

2. Concealed in Ceilings and Interior Walls and Partitions: EMT.

3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.

4. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.

C. Minimum Raceway Size: 1/2-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.

2. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

E. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

F. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F.

3.2 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

E. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.

F. Conceal conduit within finished walls, ceilings, and floors unless otherwise

indicated. Install conduits parallel or perpendicular to building lines.

G. Support conduit within 12 inches of enclosures to which attached.

H. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.

2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.

3. Arrange raceways to keep a minimum of 1 inch of concrete cover in all directions.

4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.

I. Stub-ups to Above Recessed Ceilings:

1. Use EMT, IMC, or RMC for raceways.

2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

J. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

K. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.

L. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

M. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

N. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

O. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

P. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line

with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

Q. Surface Raceways:

1. Install surface raceway with a minimum 2-inch radius control at bend points.

2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.

R. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

S. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.

2. Where an underground service raceway enters a building or structure.

3. Conduit extending from interior to exterior of building.

4. Conduit extending into pressurized duct and equipment.

5. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.

6. Where otherwise required by NFPA 70.

T. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

U. Expansion-Joint Fittings:

1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has a straight-run length that exceeds 100 feet.

2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:

a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
d. Attics: 135 deg F temperature change.

3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.

4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.

5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

6. Provide expansion/deflection fitting per NEC 300.4 (H) where raceway crosses structural joint intended for expansion/contraction/deflection to accommodate horizontal and vertical movement.

V. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 36 inches of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.

2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

AA. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center or top or bottom of box unless otherwise indicated.

BB. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a rain-tight connection between box and cover plate or supported equipment and box.

CC. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

DD. Locate boxes so that cover or plate will not span different building finishes.

EE. Support boxes of three gangs or more from more than one side by spanning two

framing members or mounting on brackets specifically designed for the purpose.

FF. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

GG. Set metal floor boxes level and flush with finished floor surface.

HH. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

END OF SECTION

WIRING DEVICES

SECTION 26 27 26

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: GFCI receptacles, 125 V, 20 A.

1.2 DEFINITIONS

A. GFCI: Ground-fault circuit interrupter.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: List of legends and description of materials and process used for pre-marking wall plates.

PART 2 - PRODUCTS

2.1 GENERAL WIRING-DEVICE REQUIREMENTS

A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Comply with NFPA 70.

C. RoHS compliant.

D. Comply with NEMA WD 1.

E. Device Color: White unless otherwise indicated.

F. Wall Plate Color: For plastic covers, match device color.

G. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GFCI RECEPTACLES, 125 V, 20 A

A. Tamper- and Weather-Resistant, GFCI Duplex Receptacles, 125 V, 20 A:

1. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator

light. Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.

2. Configuration: NEMA WD 6, Configuration 5-15R.

3. Type: Feed through.

4. Standards: Comply with UL 498 and UL 943 Class A.

5. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" and "Receptacles in Damp or Wet Locations" articles.

2.3 WALL PLATES

A. Single Source: Obtain wall plates from same manufacturer of wiring devices.

B. Single and combination types shall match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.

2. Material for Damp Locations: Thermoplastic with spring-loaded lift cover and listed and labeled for use in wet and damp locations.

C. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant thermoplastic with lockable cover.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Conductors:

1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.

2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.

3. The length of free conductors at outlets for devices shall comply with NFPA 70, Article 300, without pigtails.

4. Existing Conductors:

a. Cut back and pigtail, or replace all damaged conductors.
b. Straighten conductors that remain and remove corrosion and foreign matter.

c. Pig-tailing existing conductors is permitted, provided the outlet box is large enough.

C. Device Installation:

1. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.

2. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.

3. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.

4. Tighten unused terminal screws on the device.

5. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

3.2 GFCI RECEPTACLES

A. Install non-feed-through GFCI receptacles where protection of downstream receptacles is not required.

END OF SECTION

ENCLOSED SWITCHES AND CIRCUIT BREAKERS

SECTION 26 28 16

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, Owner's General Conditions of the Contract, and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Non-fusible switches.

2. Molded-case circuit breakers (MCCBs).

1.3 DEFINITIONS

A. NC: Normally closed.

B. NO: Normally open.

C. SPDT: Single pole, double throw.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.

1. Enclosure types and details for types other than NEMA 250, Type 1.

2. Current and voltage ratings.

3. Short-circuit current ratings (interrupting and withstand, as appropriate).

4. Include evidence of a nationally recognized testing laboratory (NRTL) listing for series rating of installed devices.

5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

D. Comply with NFPA 70.

2.2 NON-FUSIBLE SWITCHES

A. Type HD, Heavy Duty, Three Pole, Single Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

B. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.

2. Hook stick Handle: Allows use of a hook stick to operate the handle.

3. Lugs: Mechanical type, suitable for number, size, and conductor material.

2.3 MOLDED-CASE CIRCUIT BREAKERS

A. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip-free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.

B. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker.

C. MCCBs shall be equipped with a device for locking in the isolated position.

D. Lugs shall be suitable for 140 deg F rated wire on 125-A circuit breakers and below.

E. Standard: Comply with UL 489 with interrupting capacity to comply with available fault currents.

F. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits.

G. Features and Accessories:

1. Standard frame sizes, trip ratings, and number of poles.

2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.

3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.

C. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."

D. Temporary Lifting Provisions: Remove temporary lifting of eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

E. Install fuses in fusible devices.

F. Comply with NFPA 70 and NECA 1.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.

B. Label each enclosure with engraved metal or laminated-plastic nameplate.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Hot-mix asphalt paving.

1.2 REFERENCES

A. City of Redding Construction Standards 2013 Edition.

B. Standard Specifications for Public Works Construction (2009 Greenbook).

C. The State of California, Department of Transportation (Caltrans) Standard Specifications 2010 Edition.

1.3 DEFINITIONS

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

   1. Job-Mix Designs: For each job mix proposed for the Work.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each paving material, from manufacturer.

B. Material Test Reports: For each paving material.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Perform work in accordance with City of Redding Construction Standards.

B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the Geotechnical Investigation Report prepared by CGI Technical Services, Inc. dated August 23, 2013, City of Redding Construction

Standards and Standard Specifications for Public Works Construction (Greenbook).

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Comply with City of Redding Construction Standards.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations in accordance with City of Redding Construction Standards.

B. Coarse Aggregate: In accordance with City of Redding Construction Standards.

C. Fine Aggregate: In accordance with City of Redding Construction Standards.

2.2 ASPHALT MATERIALS

A. Asphalt Concrete: ½ inch maximum, Type “A” in accordance with City of Redding Construction Standards.

B. Prime Coat: In accordance with City of Redding Construction Standards.

C. Tack Coat: In accordance with City of Redding Construction Standards.

D. Fog Seal: In accordance with City of Redding Construction Standards.

E. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

B. Sand: In accordance with City of Redding Construction Standards.

2.4 MIXES

A. Hot-Mix Asphalt: In accordance with City of Redding Construction Standards.

B. Emulsified-Asphalt Slurry: In accordance with City of Redding Construction Standards.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction.
2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Owner, and replace with compacted backfill or fill as directed.

C. Proceed with paving only after unsatisfactory conditions have been corrected.

D. Verify that utilities, traffic loop detectors, and other items requiring a cut and installation beneath the asphalt surface have been completed and that asphalt surface has been repaired flush with adjacent asphalt prior to beginning installation of imprinted asphalt.

3.2 PATCHING

A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Apply in accordance with City of Redding Construction Standards.

C. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.3 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of ¼ inch.

1. Clean cracks and joints in existing hot-mix asphalt pavement.
2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.4 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Prime Coat: Apply in accordance with City of Redding Construction Standards. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

D. Tack Coat: Apply in accordance with City of Redding Construction Standards.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.5 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in lifts and thicknesses not exceeding 3 inches.
2. Spread mix at minimum temperature of 250 deg F.
3. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.6 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.

3.7 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 200 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: Not less than 95 percent relative compaction.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.8 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:

1. Base Course: Plus or minus ½ inch.
2. Surface Course: Plus ¼ inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.
2. Surface Course: 1/8 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.9 SURFACE TREATMENTS

A. Fog Seals: Apply in accordance with City of Redding Construction Standards to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.11 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

END OF SECTION