CITY OF STOCKTON

REQUEST FOR SEALED BIDS
CITY HALL RELOCATION 1ST & 7TH
FLOORS TENANT IMPROVEMENTS FOR
THE CITY OF STOCKTON, CALIFORNIA
(PUR 15-033)

Stockton
All-America City
2004
1999

A MANDATORY JOB WALK WILL BE HELD ON
JULY 27, 2016 AT 9:00 A.M. PROMPTLY
IN THE LOBBY OF 400 E. MAIN, STOCKTON, CA

AN ADDITIONAL MANDATORY JOB WALK WILL BE HELD ON
AUGUST 1, 2016 AT 10:00 A.M. PROMPTLY
IN THE LOBBY OF 400 E. MAIN, STOCKTON, CA

BIDS WILL BE RECEIVED UNTIL THE HOUR OF
2:00 O'CLOCK P.M., THURSDAY, AUGUST 18, 2016,
IN THE OFFICE OF THE CITY CLERK,
FIRST FLOOR, CITY HALL, 425 NORTH EL DORADO STREET,
STOCKTON, CALIFORNIA 95202-1997

TABLE OF CONTENTS

BIDDER'S CHECKLIST 2
1.0 GENERAL INFORMATION 3
1.1 REQUEST FOR SEALED BID 3
1.2 INVITATION TO SUBMIT A BID 3
1.3 LOCAL BUSINESS PREFERENCE 3
1.5 CONSEQUENCE OF SUBMISSION OF BID 4
1.6 EXAMINATION OF BID MATERIALS 4
1.7 ADDENDA AND INTERPRETATION 4
1.8 DISQUALIFICATION 5
1.9 INFORMAL BID REJECTED 5
1.10 CONDITIONS TO BE ACCEPTED IF ANY WORK IS SUBCONTRACTED 6
1.11 LICENSING REQUIREMENTS 6
1.12 INSURANCE REQUIREMENTS 6
1.13 HOLD HARMLESS DEFENSE CLAUSE 7
1.14 APPLICABLE LAW 8
1.15 METHOD OF PAYMENT 8
1.16 NOTICE TO OUT-OF-STATE VENDOR 8
1.17 TERM 9
1.18 COMPETITIVE PRICING 9
1.19 FUNDING 9
1.20 UNCONDITIONAL TERMINATION FOR CONVENIENCE 9
1.21 AUDITING OF CHARGES & SERVICES 9
1.22 CONTRACT BONDS 9
1.23 AWARD 10
1.24 CHANGES 10
1.25 OTHER GOVERNMENTAL AGENCIES 10
1.26 LIQUIDATED DAMAGES 11
1.27 PRODUCT OWNERSHIP 11
1.28 CONFIDENTIALITY 11
1.29 MANDATORY JOB WALK 11

1.30 PREVAILING WAGES & CONTRACTOR/SUBCONTRACTOR REGISTRATION REQUIREMENTS 12
1.31 CONTRACTOR'S SAFETY RESPONSIBILITY 12
2.0 SPECIFICATIONS 14
2.1 BACKGROUND/GENERAL NATURE OF SERVICE 14
2.3 SCOPE OF SERVICES 14
BID DOCUMENTS 16
BID TO BE SUBMITTED 17
BIDDER'S AGREEMENT 18
NON-COLLUSION 19
EXHIBIT 'A' – INSURANCE REQUIREMENTS 20
EXHIBIT B - PREVAILING WAGE DETERMINATIONS 24
EXHIBIT C - FULL SPECIFICATIONS 32

NOTICE INVITING SEALED BIDS

NOTICE IS HEREBY GIVEN that sealed bids are invited by the City of Stockton, California for specifications for **CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)** in strict accordance with the specifications.

The City of Stockton has begun the process of relocating City offices to 400 E. Main St., Stockton, CA. In preparation for this move, the City is inviting bids for the construction of an interior remodel on the first and seventh floors in accordance with the plans and specifications provided for this project.

The bid specifications and forms can be obtained from the City of Stockton's website at www.stocktongov.com/bidflash and must be delivered to the Office of the City Clerk, City Hall, 425 North El Dorado Street, Stockton, California, up to but not later than **2:00 p.m., on Thursday, AUGUST 18, 2016.**

A mandatory job walk will be held on July 27, 2016 at 9:00 a.m. promptly in the lobby of 400 E. Main, Stockton, CA. Interested bidders arriving at 9:01 a.m. or later will not be admitted. Failure to attend will result in your bid being rejected.

The City reserves the right to reject any and/or all bids received.

Information on Technical Data
Corey Chatfield, Economic Development
(209) 937-8059
e-mail: Corey.Chatfield@stocktonca.gov

Information on Bid Process/Clarification
Alan Montanelli, Buyer
(209) 937-8350
e-mail: Alan.Montanelli@stocktonca.gov

DISCLAIMER: The City does not assume any liability of responsibility for errors/omissions in any document transmitted electronically.

Dated: **July 21, 2016**

//s//BONNIE PAIGE
CITY CLERK OF THE CITY OF STOCKTON

BIDDER'S CHECKLIST

CITY OF STOCKTON / PURCHASING DIVISION

Did You:

*___ Complete the following bid documents (FROM THIS PACKET ONLY SUBMIT PAGES 15 to 18, along with any other requirements):

- *___ Sign and notarize by jurat certificate the "Non-Collusion Affidavit" form. An "All-Purpose Acknowledgment" form will not be sufficient.
- *___ Complete and sign the "Bid to be Submitted" form.
- *___ Sign the "Bidder's Agreement" form. **Include (with bid) name and e-mail address for City contact, if different from signatoree**
- *___ Proof of registration of self and any subcontractors with the State of California Department of Industrial Relations
- *___ Recheck your math on each item extension and total column. Do not superimpose numerals on your bid forms. If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid.

*___ Submit one (1) ORIGINAL of all bid documents. Additionally, submit one (1) CD with an electronic version of the bid documents.

*___ Review all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

*___ Deliver sealed bid to City Hall, City Clerk's Office (1st floor), 425 North El Dorado Street, Stockton, CA 95202, before **August 18, 2016, at 2:00 p.m.** Sealed bid shall be marked "Bid" and indicate project name, number, and bid opening date.
Please note that some overnight delivery services do not deliver directly to the City Clerk's Office. This could result in the bid arriving in the City Clerk's Office after the bid opening deadline and therefore not being accepted. NOTE: The Stockton City Clerk's office is closed from 12 noon to 1 p.m. for lunch.

A) CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS
B) (PUR 15-033)
C) AUGUST 18, 2016

CONTACT INFORMATION:

Information on Technical Data	Information on Bid Process/Clarification
Corey Chatfield, Economic Development (209) 937-8059 e-mail: Corey.Chatfield@stocktonca.gov	Alan Montanelli, Buyer (209) 937-8350 e-mail: Alan.Montaneli@stocktonca.gov

*If not completed as required, your proposal may be voided.
***DISCLAIMER**: The City does not assume any liability or responsibility for errors/omissions in any document transmitted electronically.
*THIS FORM IS FOR YOUR INFORMATION ONLY AND DOES NOT NEED TO BE SUBMITTED WITH YOUR PROPOSAL.

REQUEST FOR SEALED BID
CITY HALL RELOCATION 1st & 7TH FLOOR TENANT IMPROVEMENTS FOR THE CITY OF STOCKTON
(PUR 15-033)

1.0 GENERAL INFORMATION

1.1 REQUEST FOR SEALED BID

The purpose of this sealed bid is to request bidders to present their qualifications and capabilities to provide **CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)** for the City of Stockton.

1.2 INVITATION TO SUBMIT A BID

Bids shall be submitted no later than **2:00 p.m., on Thursday, AUGUST 18, 2016**, in the office of:

CITY CLERK
CITY OF STOCKTON
425 NORTH EL DORADO STREET
STOCKTON, CA 95202-1997

The bid should be firmly sealed in an envelope which shall be clearly marked on the outside, "CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS for the City of Stockton (PUR 15-033)." Additionally, submit one (1) CD with an electronic version of the bid documents. Any bid received after the due date and time indicated will not be accepted and will be deemed rejected and returned, unopened, to the bidder.

1.3 LOCAL BUSINESS PREFERENCE

Stockton Municipal Code Section 3.68.090 reads as follows:

Preference shall be given to the purchase of supplies, materials, equipment, and contractual services from local merchants, quality and price being equal. Local merchants who have a physical business location within the boundaries of San Joaquin County, and who have applied for and paid a business license tax and registration fee pursuant to Stockton Municipal Code Title 5, Chapter 5.08, License Taxes, shall be granted two (2) percent bid preference. Local merchants who have a physical business location within the boundaries of the City of Stockton, and who have applied for and paid a business license tax and registration fee pursuant to Stockton Municipal Code Title 5, Chapter 5.08, License Taxes, shall be granted five (5) percent bid preference. This section is intended to provide preference in the award of certain City contracts in order to encourage businesses to move into and expand within the City. (Ord. 2014-03-18-1601 C.S. § 1; prior code § 3-106.1)

1.4 LOCAL EMPLOYMENT—PUBLIC WORKS CONTRACTORS

Bidders must comply with City of Stockton Municipal Code (SMC) Section 3.68.095, Ordinance No. 011-09 adopted Sept. 1, 2009, effective Oct. 1, 2009.

1.5 CONSEQUENCE OF SUBMISSION OF BID

A. The City shall not be obligated to respond to any bid submitted nor be legally bound in any manner by the submission of a bid.

B. Acceptance by the City of a bid obligates the bidder to enter into a contract with the City.

C. A contract shall not be binding or valid against the City unless or until it is executed by the City and the bidder.

D. Statistical information contained in these documents is for informational purposes only. The City shall not be responsible for the accuracy of said data. City reserves the right to increase or decrease the project scope.

1.6 EXAMINATION OF BID MATERIALS

The submission of a bid shall be deemed a representation and warranty by the bidder that it has investigated all aspects of the bid, that it is aware of the applicable facts pertaining to the bid process and its procedures and requirements, and that it has read and understands the bid. No request for modification of the provisions of the bid shall be considered after its submission on the grounds the bidder was not fully informed as to any fact or condition. Statistical information which may be contained in the bid or any addendum thereto is for informational purposes only. The City disclaims any responsibility for this information which may subsequently be determined to be incomplete or inaccurate.

1.7 ADDENDA AND INTERPRETATION

The City will not be responsible for, nor be bound by, any oral instructions, interpretations, or explanations issued by the City or its representatives. Any request for clarifications/questions/answers of a bid shall be made in writing/e-mail and deliverable to:

CITY OF STOCKTON
ATTN: COREY CHATFIELD
ECONOMIC DEVELOPMENT
425 NORTH EL DORADO STREET
STOCKTON, CA 95202-1997
Corey.Chatfield@stocktonca.gov

CITY OF STOCKTON
ATTN: ALAN MONTANELLI
PURCHASING DIVISION
425 NORTH EL DORADO STREET
STOCKTON, CA 95202-1997
Alan.Montanelli@stocktonca.gov

Such request for clarification shall be delivered to the City by AUGUST 4, 2016 at 5:00 p.m. Any City response to a request for clarifications/questions/answers will be posted on the City's website at www.stocktongov.com/bidflash by 5:00 p.m. on AUGUST 11, 2016, and will become a part of the bid. The bidder should await responses to inquires prior to submitting a bid.

1.8 DISQUALIFICATION

Any of the following may be considered cause to disqualify a bidder without further consideration:

A. Evidence of collusion among bidders;

B. Any attempt to improperly influence any member of the evaluation panel;

C. Any attempt to communicate in any manner with a City of Stockton elected official during the bid process will, and shall be, just cause for disqualification/rejection of bidder's bid submittal and considered non-responsive.

D. A bidder's default in any operation of a contract which resulted in termination of that contract; and/or

E. Existence of any lawsuit, unresolved contractual claim, or dispute between bidder and the City.

F. No person, firm, or corporation shall be allowed to make or file or be interested in more than one bid for the same supplies, services, or both; provided, however, that subcontract bids to the principal bidders are excluded from the requirements of this section: Section 3.68.120 of the Municipal Code.

1.9 INFORMAL BID REJECTED

A bid shall be prepared and submitted in accordance with the provisions of these bid instructions and specifications. Any alteration, omission, addition, variance, or limitation of, from, or to a bid may be sufficient grounds for rejection of the bid. The City has the right to waive any defects in a bid if the City chooses to do so. The City may not accept a bid if:

A. Any of the bid forms are left blank or are materially altered;

B. Any document or item necessary for the proper evaluation of the bid is incomplete, improperly executed, indefinite, ambiguous, or missing.

1.10 CONDITIONS TO BE ACCEPTED IF ANY WORK IS SUBCONTRACTED

A. The bidder assumes full responsibility, including insurance and bonding requirements, for the quality and quantity of all work performed.

B. If bidder's supplier(s) and/or subcontractor's involvement requires the use of a licensed, patented, or proprietary process, the vendor of the process is responsible for assuring that the subcontractor, supplier, and/or operator have been properly authorized to use the process or for providing another process which is comparable to that which is required prior to submission of a bid.

1.11 LICENSING REQUIREMENTS

Any professional certifications or licenses that may be required will be the sole cost and responsibility of the successful bidder.

Bidder must possess a General Contractors License A or B to perform the work specified within these documents.

A City of Stockton Business license may be required for this project. Please contact the City of Stockton Business License Division at (209) 937-8313.

1.12 INSURANCE REQUIREMENTS

Proponent/Bidder, at Proponent's/Bidder's sole cost and expense and for the full term of the resultant contract or any extension thereof, shall obtain and maintain at least all of the insurance requirements listed in attached Exhibit A.

All coverage shall be provided by a carrier authorized to transact business in California and shall be primary. All policies, endorsements, and certificates shall be subject to approval by the Risk Manager of the City to Stockton as to form and content. These requirements are subject to amendment or waiver if so approved in writing by the Risk Manager.

Maintenance of proper insurance coverage is a material element of this contract, and failure to maintain or renew coverage or to provide evidence of renewal may be treated as a material breach of contract.

The Proponent shall assert that these insurance requirements will be met as part of their proposal response. *Failure to comply with these insurance requirements may result in a proposal being deemed unresponsive.* Proponent shall satisfy these insurance requirements concurrently with the signing of the contract prior to commencement of work. *It is strongly suggested that insurance requirements be reviewed with*

Proponent's broker to ensure any additional costs are included in the proposal pricing component.

Any questions pertaining to insurance requirements, please contact City of Stockton Risk Services at (209) 937-5037.

1.13 HOLD HARMLESS DEFENSE CLAUSE

Indemnity and Hold Harmless. With the exception that this section shall in no event be construed to require indemnification by CONTRACTOR to a greater extent than permitted under the public policy of the State of California, CONTRACTOR shall, indemnify, protect, defend with counsel approved by CITY and at CONTRACTOR'S sole cost and expense, and hold harmless CITY, its Mayor, Council, officials, representatives, agents employees and volunteers from and against any and all claims, causes of action, liabilities, judgments, awards, losses, liens, claims, stop notices, damages, expenses, and costs (including without limitation attorneys' fees, expert and contractor fees, and other expenses of litigation) of every nature, including, but not limited to, death or injury to persons, or damage to property, which arise out of or are in any way connected with the work performed, materials furnished, or services provided under this Agreement, or from any violation of any federal, state, or municipal law or ordinance, or CITY Policy, by CONTRACTOR or CONTRACTOR'S officers, agents, employees, volunteers or subcontractors. CONTRACTOR shall not be obligated to indemnify or defend CITY for claims finally determined by a court of law or arbitrator to arise from the active negligence or willful misconduct of the CITY. It is the intent of the Parties that this indemnity obligation is at least as broad as is permitted under California law. To the extent California Civil Code sections 2782, et seq., limit the defense or indemnity obligations of CONTRACTOR to CITY, the intent hereunder is to provide the maximum defense and indemnity obligations allowed by CONTRACTOR under the law. The indemnity set forth in this section shall not be limited by insurance requirements or by any other provision of this Agreement.

With the exception that this section shall in no event be construed to require indemnification, including the duty to defend, by CONTRACTOR to a greater extent than permitted under the public policy of the State of California, the parties agree that CONTRACTOR'S duty to defend CITY is immediate and arises upon the filing of any claim against the CITY for damages which arise out of or are in any way connected with the work performed, materials furnished, or services provided under this Agreement by CONTRACTOR or CONTRACTOR'S officers, agents, employees, volunteers or subcontractors. CONTRACTOR'S duties and obligations to defend the CITY shall apply regardless of whether or not the issue of the CITY'S liability, breach of this Agreement, or other obligation or fault has been determined. CONTRACTOR shall be immediately obligated to pay for CITY'S defense costs of the claim, including, but not limited to, court costs, attorney's fees and costs, expert contractor and witness fees and costs, other witness fees, document reproduction costs, arbitration fees, and, if after final judgment an appeal is pursued, all of such costs for the appeal. At the conclusion of the claim, if there is any determination or finding of sole active negligence or willful misconduct on the part of the

CITY, CITY will then reimburse CONTRACTOR for amounts paid in excess of CONTRACTOR'S proportionate share of responsibility for the damages within 30 days after CONTRACTOR provides CITY with copies of all bills and expenses incurred in the defense of the claim(s). It is agreed between the parties that this reimbursement provision assures CONTRACTOR is not obligated to defend or indemnify CITY in an amount greater than provided for under California law, including, without limitation, California Civil Code sections 2782, 2782.6, and 2782.8.

With the exception that this section shall in no event be construed to require indemnification by CONTRACTOR to a greater extent than permitted under the public policy of the State of California, and in addition to the other indemnity obligations in this Agreement, CONTRACTOR shall indemnify, defend, and hold harmless CITY its Mayor, Council, officials, representatives, agents employees and volunteers from and against all claims, losses, expenses, and costs including but not limited to attorneys' fees, arising out of any claim brought against the CITY by an employee, office, agent, or volunteer of CONTRACTOR, regardless of whether such claim may be covered by any applicable workers compensation insurance. CONTRACTOR'S indemnification obligation is not limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR under workers' compensation acts, disability acts, or other employee benefit acts.

1.14 APPLICABLE LAW

Applicable law shall be governed by the laws of the State of California. Venue shall be proper in the Superior Court of the State of California, county of San Joaquin, Stockton Branch, or, for actions brought in Federal Court, the United States District Court for the Eastern District of California, Sacramento Division.

1.15 METHOD OF PAYMENT

Payment will be made within thirty (30) days after invoices are received and accepted by the City Manager. Invoices are to be rendered monthly.

1.16 NOTICE TO OUT-OF-STATE VENDOR

The City of Stockton will pay all applicable sales/use tax directly to the State of California for this purchase.

It is the policy of the City of Stockton to pay all applicable California sales/use tax directly to the State Board of Equalization (BOE) pursuant to California Revenue and Taxation Code 7051.3. The City of Stockton will self-accrue all sales/use tax on purchases made from out-of-state vendors.

Sales and use tax on purchases made by the City of Stockton from all companies located outside California and whose products are shipped from out of state will

be remitted to the BOE directly by the City under permit number **SR KHE 28-051174 DP**. **Please do not include sales/use tax on the invoice that you submit to the City of Stockton.**

Questions regarding the City of Stockton's payment of sales/use tax can be directed to the City of Stockton's Purchasing Division at (209) 937-8357.

1.17 TERM

TO BE NEGOTIATED

1.18 COMPETITIVE PRICING

Bidder warrants and agrees that each of the charges, economic or product terms or warranties granted pursuant to this Contract are comparable to or better than the equivalent charge, economic or product term or warranty being offered to any similarly situated commercial or other government customer of bidder. If bidder enters into any arrangements with another customer of bidder to provide product under more favorable charges, economic or product terms or warranties, bidder shall immediately notify CITY of such change and this Contract shall be deemed amended to incorporate the most favorable charges, economic or product terms or warranties.

1.19 FUNDING

Any contract which results from this bid will terminate without penalty at the end of the fiscal year in the event funds are not appropriated for the next fiscal year. If funds are appropriated for a portion of the fiscal year, this contract will terminate without penalty, at the end of the term for which funds are appropriated.

1.20 UNCONDITIONAL TERMINATION FOR CONVENIENCE

The City may terminate the resultant contract for convenience by providing a sixty (60) calendar day advance notice unless otherwise stated in writing.

1.21 AUDITING OF CHARGES & SERVICES

The City reserves the right to periodically audit all charges and services made by the bidder to the City for services provided under the contract. Upon request, the bidder agrees to furnish the City with necessary information and assistance.

1.22 CONTRACT BONDS

The successful bidder will be required to furnish the City of Stockton with a Faithful Performance Bond(s) and a Labor and Materials Bond(s) at 100% of the contract and shall be furnished concurrently with the signing of the contract.

The surety which provides the bond(s) must be authorized by the Insurance Commissioner to transact business of insurance in the State of California.

Said bonds shall be executed by the surety and contractor concurrently with the signing of the contract. The form of said bonds must be approved by the appropriate City departments.

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

1.23 AWARD

Upon conclusion of the bid process, a contract may be awarded for **CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)** for the City of Stockton.

The City reserves the right to make an award on any item, quantity of any item, group of items, or in the aggregate to that/those bidder(s) whose bid(s) is/are most responsive to the needs of the City. Further, the City reserves the right to reject any and all bids, or alternate bids, or waive any informality in the bid as is in the City's best interest.

Consideration will be given in comparing bids and awarding a contract, not only to the dollar amount of the bids, but also to:

- Suitability
- Warranties
- Standardization
- Delivery time
- Any other criteria as best suits the City of Stockton
- Compatibility resulting in the lowest ultimate cost; Best value to the City

1.24 CHANGES

The City's Representative has the authority to review and recommend or reject change orders and cost proposals submitted by the bidder or as recommended by the bidder's project manager, pursuant to the adopted City of Stockton Standard Specifications.

1.25 OTHER GOVERNMENTAL AGENCIES

If mutually agreeable to all parties, the use of any resultant contract/purchase order may be extended to other political subdivisions, municipalities, or tax supported agencies.

Such participating governmental bodies shall make purchases in their own name, make payment directly to successful bidder and be liable directly to the successful bidder, holding the City of Stockton harmless.

1.26 LIQUIDATED DAMAGES

Liquidated damages in the amount of $2,000.00 dollars per day per the specifications for this project.

1.27 PRODUCT OWNERSHIP

Any documents, products or systems resulting from the contract will be the property of the City of Stockton.

1.28 CONFIDENTIALITY

If bidder believes that portions of a bid constitute trade secrets or confidential commercial, financial, geological, or geophysical data, then the bidder must so specify by, at a minimum, stamping in bold red letters the term **"CONFIDENTIAL"** on that part of the bid which the bidder believes to be protected from disclosure. The bidder must submit in writing specific detailed reasons, including any relevant legal authority, stating why the bidder believes the material to be confidential or a trade secret. Vague and general claims as to confidentiality will not be accepted. The City will be the sole judge as to whether a claim is general and/or vague in nature. All offers and parts of offers that are not marked as confidential may be automatically considered public information after the contract is awarded. **The bidder is hereby put on notice that the City may consider all or parts of the offer public information under applicable law even though marked confidential.**

1.29 MANDATORY JOB WALK

A mandatory job walk will be held on JULY 27, 2016 at ~~10:00 a.m~~. 9:00 a.m. promptly in the lobby at 400 E Main Stockton, CA. Interested bidders arriving at ~~10:01 a.m~~. 9:01 a.m. or later will not be admitted. Failure to attend will result in your bid being rejected.

An additional mandatory job walk will be held on AUGUST 1, 2016 at 10:00 a.m. promptly in the lobby at 400 E Main Stockton, CA. Interested bidders arriving at 10:01 a.m. or later will not be admitted. Failure to attend will result in your bid being rejected.

1.30 PREVAILING WAGES & CONTRACTOR/SUBCONTRACTOR REGISTRATION REQUIREMENTS

Prevailing wage rates are required for this project according to State and Federal Labor laws. Prevailing wage rates can be found by logging on to http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm.

Pursuant to Labor Code Section 1771.1(a): 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 Labor Code 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.

No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

Department of Industrial Relations- Contractor Registration information and web link: http://www.dir.ca.gov/Public-Works/PublicWorks.html

In compliance with Senate Bill 854 and the California Labor Code, all Bidders shall include with their Bid proof of registration from the Department of Industrial Relations (DIR) that includes the contractor's Legal Name, Registration Number, License Type/Number, Registration Date and Expiration Date, for every contractor and subcontractor, regardless of tier.

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

1.31 CONTRACTOR'S SAFETY RESPONSIBILITY

The scope of work for this project has been reviewed for special risks or hidden

dangers that may be present to employees of the bidder or any subcontractor. The bidder is required to identify, notify employees, and implement special precautions to prevent injuries to employees. Additionally, the bidder is required to identify its skill, experience, and equipment in dealing with the types of risk to employees.

.

2.0 SPECIFICATIONS

2.1 BACKGROUND/GENERAL NATURE OF SERVICE

The City of Stockton has begun the process of relocating City offices to 400 E. Main St., Stockton, CA. In preparation for this move, the City is inviting bids for the construction of an interior remodel on the 1st and 7th floors in accordance with the plans and specifications provided for this project.

2.2 PREVAILING WAGE

As stated in section 1.31, prevailing wages will be required for this project. Please see Exhibit B for additional details. Also, prevailing wage determinations can be found on Bidflash under the "Plans, Attachments and Agendas" section.

2.3 SCOPE OF SERVICES

Full details and specifications for this project can be found in Exhibit C, including general Information, project index, and individual project specifications.

2.4 CITY RESPONSIBILITIES

1. City will provide access to City maps, conceptual drawings, records, studies, plans and other documents relating to the project.

2. City will provide the code building inspection and any special inspection required.

2.5 ADDITIONAL MISCELLANEOUS INFORMATION FOR THIS PROJECT

1. A freight elevator, with a 5,000lbs rating will be available. Availability and scheduling of this elevator will need to be coordinated with CBRE.

2. Staging will be allowed in the suite where work is taking place or in the suites on the first floor that the City is leasing. No staging will be allowed in the parking structure.

3. All data drops will need to be cored.

4. The time allotted for the job will be calculated by calendar days.

5. All miscellaneous furniture, fixtures and other equipment will be moved by the City of Stockton

6. The building hours are 6:30AM – 10:00PM Monday through Friday. These can be flexible with reasonable advance notice, say 24 hours.

7. Plans for the 1st and 7th floor can be found at www.stocktongov.com/bidflash under the Economic Development tab.

BID DOCUMENTS

A) BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS

B) PUR 15-033

C) AUGUST 18, 2016

COMPANY NAME: _____

CONTACT NAME: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

EMAIL: _____

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
		$_____/ea.	$_____
		$_____/ea.	$_____
		Subtotal	$_____
		Sales Tax (9%)	$_____
		GRAND TOTAL	$_____

The bidder warranties this equipment for a minimum period of _____ years.

Complete delivery will be made within _____ calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

_____ _____

FIRM ADDRESS

_____ _____

SIGNED BY TITLE OR AGENCY

_____ (____) _____

DATE TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) **CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

_____ _____

FIRM ADDRESS

_____ _____

SIGNED BY TITLE OR AGENCY

_____

E-MAIL ADDRESS

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA,_____)ss.

County of _____)

(insert)

_____being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____

(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA,_____)ss.

County of _____)

(insert)

_____being first duly sworn, deposes and says: That they are the_____ of _____ a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____

(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA,_____)ss.

County of _____)

(insert)

_____,

each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____who is the party making the foregoing bid; that the other partner, or partners, are _____that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____

(Signature)

_____

(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

1. **The City of Stockton, its Mayor, Council, officers, representatives, agents, employees and volunteers are to be covered as additional insureds** on the CGL and AL policy with respect to liability arising out of with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (**at least as broad as** ISO Form CG 20 10 11 85 or both CG 20 10 and CG 20 37 forms if later revisions used).

2. For any claims related to this project, the **Contractor's insurance coverage shall be primary** insurance as respects the City of Stockton, its Mayor, Council, officers, representatives, agents, employees and volunteers. Any insurance or self-insurance maintained by the City of Stockton, its Mayor, Council, officers, representatives, agents, employees and volunteers shall be excess of the Contractor's insurance and shall not contribute with it. The City of Stockton does not accept primary endorsements limiting the Contractor's insurance coverage to sole negligence.

3. Each insurance policy required by this clause shall provide that coverage shall not be canceled, except with notice to the City of Stockton.

Claims Made Policies

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

1. The retroactive date must be shown, and this date must be before the execution date of the contract or the beginning of contract work.

2. Insurance must be maintained and evidence of insurance must be provided for at least three (3) years after completion of contract work.

3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor must purchase extended reporting period coverage for a minimum of three (3) years after completion of contract work.

4. A copy of the claims reporting requirements must be submitted to the City of Stockton for review.

5. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best rating of no less than A: VII if admitted to do business in the State of California; If not admitted to do business in the State of California, insurance is to be placed with insurers with a current A.M. Best rating of no less than A+:X.

Waiver of Subrogation

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

Verification of Coverage

Contractor shall furnish the City of Stockton with original certificates and amendatory endorsements. If necessary, copies of the applicable insurance language, effecting coverage required by this contract may be included. All certificates and endorsements are to be received and approved by the City of Stockton Risk Services before work commences. Failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The City of Stockton reserves the right to require complete, certified copies of all required insurance policies, required by these specifications, at any time, for any reason or no reason.

Contractor shall, prior to the commencement of work under this Agreement, provide the City of Stockton with a copy of its Declarations Page and Endorsement Page for each of the required policies.

Certificate holder address

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

- City of Stockton
- Attention: Risk Services
- 425 N. El Dorado Street
- Stockton, CA 95202

City of Stockton Risk Services Phone: 209-937-5037
City of Stockton Risk Services Fax: 209-937-8558

Maintenance of Insurance

If at any time during the life of the Contract or any extension, the Contractor fails to maintain the required insurance in full force and effect, all work under the Contract

shall be discontinued immediately. Any failure to maintain the required insurance shall be sufficient cause for the CITY to terminate this Contract.

Subcontractors

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

Surety Bonds

Contractor shall provide the following Surety Bonds:

1. Performance bond
2. Labor and Materials bond
3. Maintenance bond

The Performance Bond shall be in a sum equal to 100% of the contract price. The Maintenance Bond shall be equal to 20% of the contract price. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.

Special Risks or Circumstances

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

EXHIBIT B - PREVAILING WAGE DETERMINATIONS

(CARPENTER, LABORER, ELECTRICIAN)

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #CARPENTER AND RELATED TRADES

DETERMINATION: NC-23-31-1-2015-1
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.
LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare	Pension	Vacation/ Holiday[d]	Training	Other Payments[e]	Straight – Time: Hours	Total Hourly Rate	Daily: 1 1/2X[f]	Daily: 2X	Overtime Hourly Rate[c] Saturday[g]: 1 1/2X	Saturday[g]: 2X	Sunday and Holiday[j]
[b]Area 1													
Carpenter	$42.40	$11.05	$9.35	$4.26	$0.78	$2.54	8	$70.38	$91.58	$112.78	$91.58	$112.78	$112.78
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$42.55	$11.05	$9.35	$4.26	$0.78	$2.54	8	$70.53	$91.81	$113.08	$91.81	$113.08	$113.08
[b]Area 2													
Carpenter	$36.52	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.50	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$36.67	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.65	$82.99	$101.32	$82.99	$101.32	$101.32
[b]Area 3[i]													
Carpenter	$36.52	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.50	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$36.67	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.65	$82.99	$101.32	$82.99	$101.32	$101.32
[b]Area 4[i]													
Carpenter	$35.17	$11.05	$9.35	$4.26	$0.78	$2.54	8	$63.15	$80.74	$98.32	$80.74	$98.32	$98.32
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$35.32	$11.05	$9.35	$4.26	$0.78	$2.54	8	$63.30	$80.96	$98.62	$80.96	$98.62	$98.62

DETERMINATION: NC-23-31-1-2015-1A
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.
LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[c]	Pension	Vacation/ Holiday[d]	Training	Other Payments[e]	Straight – Time: Hours	Total Hourly Rate	Daily: 1 1/2X[f]	Daily: 2X	Overtime Hourly Rate[c] Saturday[g]: 1 1/2X	Saturday[g]: 2X	Sunday and Holiday[j]
Bridge Builder/Highway Carpenter	$42.40	$11.05	$9.35	$4.26	$0.78	$2.54	8.0	$70.38	$91.58	$112.78	$91.58	$112.78	$112.78
Bridge Builder/Highway Carpenter (Special Single Shift)	$47.70	$11.05	$9.35	$4.26	$0.78	$2.54	8.0	$75.68	$91.58	$112.78	$91.58	$112.78	$112.78

Footnote and Millwright listed on page 34A

(Recognized Holidays and Subsistence Payment footnotes also listed on page 34A)

EXHIBIT B - PREVAILING WAGE DETERMINATIONS

(CARPENTER, LABORER, ELECTRICIAN)

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #CARPENTER AND RELATED TRADES

DETERMINATION: NC-23-31-1-2015-1
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.
LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare	Pension	Vacation/ Holiday[d]	Training	Other Payments[e]	Straight – Time: Hours	Total Hourly Rate	Daily: 1 1/2X[f]	Daily: 2X	Overtime Hourly Rate[c] Saturday[g]: 1 1/2X	Saturday: 2X	Sunday and Holiday[j]
[b] Area 1													
Carpenter	$42.40	$11.05	$9.35	$4.26	$0.78	$2.54	8	$70.38	$91.58	$112.78	$91.58	$112.78	$112.78
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$42.55	$11.05	$9.35	$4.26	$0.78	$2.54	8	$70.53	$91.81	$113.08	$91.81	$113.08	$113.08
[b] Area 2													
Carpenter	$36.52	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.50	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$36.67	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.65	$82.99	$101.32	$82.99	$101.32	$101.32
[b] Area 3[i]													
Carpenter	$36.52	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.50	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$36.67	$11.05	$9.35	$4.26	$0.78	$2.54	8	$64.65	$82.99	$101.32	$82.99	$101.32	$101.32
[b] Area 4[i]													
Carpenter	$35.17	$11.05	$9.35	$4.26	$0.78	$2.54	8	$63.15	$80.74	$98.32	$80.74	$98.32	$98.32
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$35.32	$11.05	$9.35	$4.26	$0.78	$2.54	8	$63.30	$80.96	$98.62	$80.96	$98.62	$98.62

DETERMINATION: NC-23-31-1-2015-1A
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.
LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[c]	Pension	Vacation/ Holiday[d]	Training	Other Payments[e]	Straight – Time: Hours	Total Hourly Rate	Daily: 1 1/2X[f]	Daily: 2X	Overtime Hourly Rate[c] Saturday[g]: 1 1/2X	Saturday: 2X	Sunday and Holiday[j]
Bridge Builder/Highway Carpenter	$42.40	$11.05	$9.35	$4.26	$0.78	$2.54	8.0	$70.38	$91.58	$112.78	$91.58	$112.78	$112.78
Bridge Builder/Highway Carpenter (Special Single Shift)	$47.70	$11.05	$9.35	$4.26	$0.78	$2.54	8.0	$75.68	$91.58	$112.78	$91.58	$112.78	$112.78

Footnote and Millwright listed on page 34A

(Recognized Holidays and Subsistence Payment footnotes also listed on page 34A)

DETERMINATION: NC-23-31-1-2015-1B
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.
LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[e]	Pension	Vacation/ Holiday[d]	Training	Other Payments[b]	Straight Time: Hours	Total Hourly Rate	Overtime Hourly Rate[c]: Daily 1 1/2X[f]	Daily 2X	Saturday[a] 1 1/2X[g]	Saturday[a] 2X	Sunday and Holiday[i]
[h] Area 1 Millwright	$42.50	$11.05	$9.35	$4.35	$0.78	$4.05	8	$72.08	$93.33	$114.58	$93.33	$114.58	$114.58
[h] Area 2 Millwright	$39.02	$11.05	$9.35	$4.35	$0.78	$4.05	8	$68.60	$88.11	$107.62	$88.11	$107.62	$107.62
[h] Area 3[j] Millwright	$39.02	$11.05	$9.35	$4.35	$0.78	$4.05	8	$68.60	$88.11	$107.62	$88.11	$107.62	$107.62
[h] Area 4[j] Millwright	$37.67	$11.05	$9.35	$4.35	$0.78	$4.05	8	$67.25	$86.09	$104.92	$86.09	$104.92	$104.92

DETERMINATION: NC-23-31-1-2015-1, NC-23-31-1-2015-1A and NC-23-31-1-2015-1B

# Indicates an apprenticeable craft. The current apprentice wage rates are available on the Internet at http://www.dir.ca.gov/OPRL/PWAppWage/PWAppWageStart.asp. To obtain any apprentice wage rates as of July 1, 2008 and prior to September 27, 2012, please contact the Division of Apprenticeship Standards or refer to the Division of Apprenticeship Standards' website at http://www.dir.ca.gov/das/das.html.

* In the event that work cannot be performed Monday through Friday because of inclement weather or major mechanical breakdown, employees may voluntarily make up such day on Saturday and shall be paid at the applicable straight time rates.

[h] **AREA 1** - Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.
AREA 2 - Monterey, San Benito, and Santa Cruz Counties.
AREA 3 - El Dorado, Placer, Sacramento, San Joaquin and Yolo Counties.
AREA 4 - Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Mariposa, Mendocino, Merced, Modoc, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, and Yuba Counties.

[c] The overtime rates for shift work are based on the non-shift overtime rates.

[d] Includes an amount per hour worked for Work Fees. The Vacation amount is $2.45 per hour worked for Carpenter; $2.35 per hour worked for Millwright.

[e] Includes Annuity Trust Fund, Industry Promotion, Carpenters International Training Fund, Work Preservation, and Carpenter Employers Contract Administration.

[f] For building construction, rate applies to the first 4 hours daily overtime. For all heavy, highway and engineering construction overtime worked, Monday through Friday, rate applies to the first 4 hours daily overtime.

[g] Rate applies to the first 8 hours for building construction and for the first 10 hours worked on heavy, highway and engineering construction.

[b] Millwright Annuity Trust Fund, Industry Promotion, Work Preservation, and Carpenters International Training Fund.

[i] Time and one-half shall be paid for the first eight (8) hours worked on the four (4) days of each year selected by the Union as designated off/holidays listed in the Holiday Provision.

[j] Area 3 includes the portion of Placer County west of and including Highway 49 and the portion of El Dorado County west of and including Highway 49 and the territory inside the city limits of Placerville. Area 4 includes the portions of Placer and El Dorado Counties not covered in Area 3.

RECOGNIZED HOLIDAYS: Holidays upon which the general prevailing hourly wage rate for Holiday work shall be paid, shall be all holidays in the collective bargaining agreement, applicable to the particular craft, classification, or type of worker employed on the project, which is on file with the Director of Industrial Relations. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code. You may obtain the holiday provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Holiday provisions for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

TRAVEL AND/OR SUBSISTENCE PAYMENT: In accordance with Labor Code Sections 1773.1 and 1773.9, contractors shall make travel and/or subsistence payments to each worker to execute the work. You may obtain the travel and/or subsistence provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Travel and/or subsistence requirements for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #CARPENTER AND RELATED TRADES (SECOND SHIFT)*

DETERMINATION: NC-23-31-1-2015-1
ISSUE DATE: August 22, 2015

EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.

LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[d]	Pension	Vacation/ Holiday[e]	Training	Other Payments[f]	Straight – Time: Hours[a]	Total Hourly Rate	Overtime Hourly Rate[a]: Daily 1 1/2X[b]	Daily 2X	Saturday[b] 1 1/2X[c]	Saturday[b] 2X	Sunday and Holiday[b]
[1] Area 1													
Carpenter	$45.23	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$73.21	$91.58	$112.78	$91.58	$112.78	$112.78
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$45.39	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$73.37	$91.81	$113.08	$91.81	$113.08	$113.08
[1] Area 2													
Carpenter	$38.95	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$66.93	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$39.11	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$67.09	$82.99	$101.32	$82.99	$101.32	$101.32
[1] Area 3[2]													
Carpenter	$38.95	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$66.93	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$39.11	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$67.09	$82.99	$101.32	$82.99	$101.32	$101.32
[1] Area 4[2]													
Carpenter	$37.51	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$65.49	$80.74	$98.32	$80.74	$98.32	$98.32
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$37.67	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$65.65	$80.96	$98.62	$80.96	$98.62	$98.62

DETERMINATION: NC-23-31-1-2015-1A
ISSUE DATE: August 22, 2015

EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.

LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[d]	Pension	Vacation/ Holiday[e]	Training	Other Payments[f]	Straight – Time: Hours[a]	Total Hourly Rate	Overtime Hourly Rate[a]: Daily 1 1/2X[b]	Daily 2X	Saturday[b] 1 1/2X[c]	Saturday[b] 2X	Sunday and Holiday[b]
Bridge Builder/Highway Carpenter	$45.23	$11.05	$9.35	$4.26	$0.78	$2.54	7.5	$73.21	$91.58	$112.78	$91.58	$112.78	$112.78

Continued on page 34C

(Recognized Holidays and Subsistence Payment footnotes also listed on page 34C)

DETERMINATION: NC-23-31-1-2015-1B
ISSUE DATE: August 22, 2015

EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.

LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[d]	Pension	Vacation/ Holiday[g]	Training	Other Payments[j]	Straight – Time: Hours[e]	Total Hourly Rate	Overtime Hourly Rate[a]: Daily 1 1/2X[h]	Daily 2X	Saturday[b] 1 1/2X[i]	Saturday[b] 2X	Sunday and Holiday[k]
[c] Area 1 Millwright	$45.33	$11.05	$9.35	$4.35	$0.78	$4.05	7.5	$74.91	$93.33	$114.58	$93.33	$114.58	$114.58
[c] Area 2 Millwright	$41.62	$11.05	$9.35	$4.35	$0.78	$4.05	7.5	$71.20	$88.11	$107.62	$88.11	$107.62	$107.62
[c] Area 3[d] Millwright	$41.62	$11.05	$9.35	$4.35	$0.78	$4.05	7.5	$71.20	$88.11	$107.62	$88.11	$107.62	$107.62
[c] Area 4[d] Millwright	$40.18	$11.05	$9.35	$4.35	$0.78	$4.05	7.5	$69.76	$86.09	$104.92	$86.09	$104.92	$104.92

DETERMINATION: NC-23-31-1-2015-1, NC-23-31-1-2015-1A and NC-23-31-1-2015-1B (FOR SECOND AND THIRD SHIFTS)

# Indicates an apprenticeable craft. The current apprentice wage rates are available on the Internet at http://www.dir.ca.gov/OPRL/PWAppWage/PWAppWageStart.asp. To obtain any apprentice wage rates as of July 1, 2008 and prior to September 27, 2012, please contact the Division of Apprenticeship Standards or refer to the Division of Apprenticeship Standards' website at http://www.dir.ca.gov/das/das.html.

* Does not apply to tenant improvement or renovation projects in occupied buildings with a total contract value of $5 million or less.

[a] The overtime rates for shift work are based on the non-shift overtime rates on page 34.

[b] In the event that work cannot be performed Monday through Friday because of inclement weather or major mechanical breakdown, employees may voluntarily make up such day on Saturday and shall be paid at the applicable straight time rates.

[c] AREA 1 - Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.
AREA 2 - Monterey, San Benito, and Santa Cruz Counties.
AREA 3 - El Dorado, Placer, Sacramento, San Joaquin and Yolo Counties.
AREA 4 - Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Mariposa, Mendocino, Merced, Modoc, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, and Yuba Counties.

[d] Area 3 includes the portion of Placer County west of and including Highway 49 and the portion of El Dorado County west of and including Highway 49 and the territory inside the city limits of Placerville. Area 4 includes the portions of Placer and El Dorado Counties not covered in Area 3.

[e] Includes an amount per hour worked for Work Fees. The Vacation amount is $2.45 per hour worked for Carpenter; $2.35 per hour worked for Millwright.

[f] Annuity Trust Fund, Industry Promotion, Carpenters International Training Fund, and Carpenter Employers Contract Administration.

[g] Daily overtime applies after 7 ½ hours worked at the straight-time rate for second shift and after 7 hours worked at the straight-time rate for third shift.

[h] For building construction, rate applies to the first 2 hours prior to the start of the regular or approved day, or the first 4 hours after the end of the approved or regular work day, not to exceed a total of 4 hours in any 1 work day. For heavy, highway and engineering construction rate applies to the first 4 hours prior to the start of the regular or approved day, or the first 4 hours after the end of the approved or regular work day, not to exceed a total of 4 hours in any 1 work day

[i] Rate applies to the first 8 hours for building construction and for the first 10 hours worked on heavy, highway and engineering construction.

[j] Millwright Annuity Trust Fund, Industry Promotion, Carpenters International Training Fund, and Work Preservation.

[k] Time and one-half shall be paid for the first eight (8) hours worked on the four (4) days of each year selected by the Union as designated off/holidays listed in the Holiday Provision.

RECOGNIZED HOLIDAYS: Holidays upon which the general prevailing hourly wage rate for Holiday work shall be paid, shall be all holidays in the collective bargaining agreement, applicable to the particular craft, classification, or type of worker employed on the project, which is on file with the Director of Industrial Relations. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code. You may obtain the holiday provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Holiday provisions for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

TRAVEL AND/OR SUBSISTENCE PAYMENT: In accordance with Labor Code Sections 1773.1 and 1773.9, contractors shall make travel and/or subsistence payments to each worker to execute the work. You may obtain the travel and/or subsistence provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Travel and/or subsistence requirements for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #CARPENTER AND RELATED TRADES (THIRD SHIFT)*

DETERMINATION: NC-23-31-1-2015-1
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: *June 30, 2016*** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.
LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[e]	Pension	Vacation/ Holiday[f]	Training	Other Payments[f]	Straight – Time: Hours[g]	Total Hourly Rate	Overtime Hourly Rate[h]: Daily 1 1/2X[h]	Daily 2X	Saturday[h] 1 1/2X[i]	Saturday[h] 2X	Sunday and Holiday[h]
***Area 1**													
Carpenter	$48.46	$11.05	$9.35	$4.26	$0.78	$2.54	7	$76.44	$91.58	$112.78	$91.58	$112.78	$112.78
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$48.63	$11.05	$9.35	$4.26	$0.78	$2.54	7	$76.61	$91.81	$113.08	$91.81	$113.08	$113.08
***Area 2**													
Carpenter	$41.74	$11.05	$9.35	$4.26	$0.78	$2.54	7	$69.72	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$41.91	$11.05	$9.35	$4.26	$0.78	$2.54	7	$69.89	$82.99	$101.32	$82.99	$101.32	$101.32
***Area 3[j]**													
Carpenter	$41.74	$11.05	$9.35	$4.26	$0.78	$2.54	7	$69.72	$82.76	$101.02	$82.76	$101.02	$101.02
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$41.91	$11.05	$9.35	$4.26	$0.78	$2.54	7	$69.89	$82.99	$101.32	$82.99	$101.32	$101.32
***Area 4[j]**													
Carpenter	$40.19	$11.05	$9.35	$4.26	$0.78	$2.54	7	$68.17	$80.74	$98.32	$80.74	$98.32	$98.32
Hardwood Floorlayer, Power Saw Operator, Saw Filer, Shingler, Steel Scaffold and Steel Shoring Erector	$40.37	$11.05	$9.35	$4.26	$0.78	$2.54	7	$68.35	$80.96	$98.62	$80.96	$98.62	$98.62

Footnotes listed on page 34C

(Recognized Holidays and Subsistence Payment footnotes also listed on page 34C)

DETERMINATION: NC-23-31-1-2015-1A

ISSUE DATE: August 22, 2015

EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.

LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare[c]	Pension	Vacation/ Holiday[a]	Training	Other Payments[f]	Straight – Time: Hours[g]	Total Hourly Rate	Overtime Hourly Rate[h]: Daily 1 1/2X[b]	Daily 2X	Saturday[b] 1 1/2X[i]	Saturday[b] 2X	Sunday and Holiday[b]
Bridge Builder/Highway Carpenter	$48.46	$11.05	$9.35	$4.26	$0.78	$2.54	7	$76.44	$91.58	$112.78	$91.58	$112.78	$112.78

DETERMINATION: NC-23-31-1-2015-1B

ISSUE DATE: August 22, 2015

EXPIRATION DATE OF DETERMINATION: June 30, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director - Research Unit for specific rates at (415) 703-4774.

LOCALITY: All Localities within Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties.

CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Employer Payments: Health and Welfare	Pension	Vacation/ Holiday[a]	Training	Other Payments[f]	Straight – Time: Hours[g]	Total Hourly Rate	Overtime Hourly Rate[h]: Daily 1 1/2X[b]	Daily 2X	Saturday[b] 1 1/2X[i]	Saturday[b] 2X	Sunday and Holiday[b]
[e] Area 1 Millwright	$48.57	$11.05	$9.35	$4.35	$0.78	$4.05	7	$78.15	$93.33	$114.58	$93.33	$114.58	$114.58
[e] Area 2 Millwright	$44.59	$11.05	$9.35	$4.35	$0.78	$4.05	7	$74.17	$88.11	$107.62	$88.11	$107.62	$107.62
[e] Area 3[d] Millwright	$44.59	$11.05	$9.35	$4.35	$0.78	$4.05	7	$74.17	$88.11	$107.62	$88.11	$107.62	$107.62
[e] Area 4[d] Millwright	$43.05	$11.05	$9.35	$4.35	$0.78	$4.05	7	$72.63	$86.09	$104.92	$86.09	$104.92	$104.92

Footnotes listed on page 34C

(Recognized Holidays and Subsistence Payment footnotes also listed on page 34C)

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1

FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #LABORER AND RELATED CLASSIFICATIONS

DETERMINATION: NC-23-102-1-2015-2
ISSUE DATE: August 22, 2015
EXPIRATION DATE OF DETERMINATION: JUNE 26, 2016** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director – Research Unit for specific rates at (415) 703-4774.

LOCALITY: ALL LOCALITIES WITHIN ALAMEDA, ALPINE, AMADOR, BUTTE, CALAVERAS, COLUSA, CONTRA COSTA, DEL NORTE, EL DORADO, FRESNO, GLENN, HUMBOLDT, KINGS, LAKE, LASSEN, MADERA, MARIPOSA, MARIN, MENDOCINO, MERCED, MODOC, MONTEREY, NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, SHASTA, SIERRA, SISKIYOU, SOLANO, SONOMA, STANISLAUS, SUTTER, TEHAMA, TRINITY, TULARE, TUOLUMNE, YOLO, AND YUBA COUNTIES.

Classification# (Journeyperson)	Basic Hourly Rate[2]	Employer Payments: Health and Welfare	Pension	Vacation and Holiday	Training	Other Payments	Straight-Time Hours[f]	Total Hourly Rate	Overtime Hourly Rate: Daily 1 1/2X	Saturday[b] 1 1/2X	Sunday/ Holiday 2X
AREA 1[c]											
Construction Specialist	29.49	7.54	10.38	2.63	0.43	0.22	8	50.69	65.435	65.435	80.18
Group 1; Group 1(B)[e]	28.79	7.54	10.38	2.63	0.43	0.22	8	49.99	64.385	64.385	78.78
Group 1 (A)	29.01	7.54	10.38	2.63	0.43	0.22	8	50.21	64.715	64.715	79.22
Group 1 (C)	28.84	7.54	10.38	2.63	0.43	0.22	8	50.04	64.46	64.46	78.88
Group 1 (E)	29.34	7.54	10.38	2.63	0.43	0.22	8	50.54	65.21	65.21	79.88
Group 1 (F-1)	29.37	7.54	10.38	2.63	0.43	0.22	8	50.57	65.255	65.255	79.94
Group 1 (F-2)	28.39	7.54	10.38	2.63	0.43	0.22	8	49.59	63.785	63.785	77.98
Group 1 (G)	28.99	7.54	10.38	2.63	0.43	0.22	8	50.19	64.685	64.685	79.18
Group 2	28.64	7.54	10.38	2.63	0.43	0.22	8	49.84	64.16	64.16	78.48
Group 3; Group 3(A)	28.54	7.54	10.38	2.63	0.43	0.22	8	49.74	64.01	64.01	78.28
Group 4; Group 6(B)	22.23	7.54	10.38	2.63	0.43	0.22	8	43.43	54.545[d]	54.545[d]	65.66[d]
Group 6	29.75	7.54	10.38	2.63	0.43	0.22	8	50.95	65.825	65.825	80.70
Group 6 (A)	29.25	7.54	10.38	2.63	0.43	0.22	8	50.45	65.075	65.075	79.70
Group 6 (C)	28.66	7.54	10.38	2.63	0.43	0.22	8	49.86	64.19	64.19	78.52
Group 7 – Stage 1 (1st 6 months)	19.98	7.54	10.38	2.63	0.43	0.22	8	41.18	51.17	51.17	61.16
Stage 2 (2nd 6 months)	22.83	7.54	10.38	2.63	0.43	0.22	8	44.03	55.445	55.445	66.86
Stage 3 (3rd 6 months)	25.69	7.54	10.38	2.63	0.43	0.22	8	46.89	59.735	59.735	72.58
AREA 2[c]											
Construction Specialist	28.49	7.54	10.38	2.63	0.43	0.22	8	49.69	63.935	63.935	78.18
Group 1; Group 1(B)[e]	27.79	7.54	10.38	2.63	0.43	0.22	8	48.99	62.885	62.885	76.78
Group 1 (A)	28.01	7.54	10.38	2.63	0.43	0.22	8	49.21	63.215	63.215	77.22
Group 1 (C)	27.84	7.54	10.38	2.63	0.43	0.22	8	49.04	62.96	62.96	76.88
Group 1 (E)	28.34	7.54	10.38	2.63	0.43	0.22	8	49.54	63.71	63.71	77.88
Group 1 (F-1)	28.37	7.54	10.38	2.63	0.43	0.22	8	49.57	63.755	63.755	77.94
Group 1 (F-2)	27.39	7.54	10.38	2.63	0.43	0.22	8	48.59	62.285	62.285	75.98
Group 2	27.64	7.54	10.38	2.63	0.43	0.22	8	48.84	62.66	62.66	76.48
Group 3; Group 3(A)	27.54	7.54	10.38	2.63	0.43	0.22	8	48.74	62.51	62.51	76.28
Group 4; Group 6(B)	21.23	7.54	10.38	2.63	0.43	0.22	8	42.43	53.045[d]	53.045[d]	63.66[d]
Group 6	28.75	7.54	10.38	2.63	0.43	0.22	8	49.95	64.325	64.325	78.70
Group 6 (A)	28.25	7.54	10.38	2.63	0.43	0.22	8	49.45	63.575	63.575	77.70
Group 6 (C)	27.66	7.54	10.38	2.63	0.43	0.22	8	48.86	62.69	62.69	76.52
Group 7 – Stage 1 (1st 6 months)	19.28	7.54	10.38	2.63	0.43	0.22	8	40.48	50.12	50.12	59.76
Stage 2 (2nd 6 months)	22.03	7.54	10.38	2.63	0.43	0.22	8	43.23	54.245	54.245	65.26
Stage 3 (3rd 6 months)	24.79	7.54	10.38	2.63	0.43	0.22	8	45.99	58.385	58.385	70.78

PLEASE GO TO PAGE 50 FOR CLASSIFICATIONS WITHIN EACH GROUP

# INDICATES AN APPRENTICEABLE CRAFT. THE CURRENT APPRENTICE WAGE RATES ARE AVAILABLE ON THE INTERNET AT HTTP://WWW.DIR.CA.GOV/OPRL/PWAPPWAGE/PWAPPWAGESTART.ASP. TO OBTAIN ANY APPRENTICE WAGE RATES AS OF JULY 1, 2008 AND PRIOR TO SEPTEMBER 27, 2012, PLEASE CONTACT THE DIVISION OF APPRENTICESHIP STANDARDS OR REFER TO THE DIVISION OF APPRENTICESHIP STANDARDS' WEBSITE AT HTTP://WWW.DIR.CA.GOV/DAS/DAS.HTML.

a GROUP 1(D) - MAINTENANCE OR REPAIR TRACKMEN AND ROAD BEDS AND ALL EMPLOYEES PERFORMING WORK COVERED BY THIS CLASSIFICATION SHALL RECEIVE $0.25 PER PER HOUR ABOVE THEIR REGULAR RATE FOR ALL WORK PERFORMED ON UNDERGROUND STRUCTURES NOT SPECIFICALLY COVERED HEREIN. THIS SHALL NOT APPLY TO WORK BELOW GROUND LEVEL IN OPEN CUT. THIS SHALL APPLY TO CUT AND COVER WORK OF SUBWAY CONSTRUCTION AFTER TEMPORARY COVER HAS BEEN PLACED.
GROUP 1(H) - ALL LABORERS WORKING OFF OR WITH OR FROM BOS'N CHAIRS, SWINGING SCAFFOLDS, BELTS RECEIVE $0.25 PER HOUR ABOVE THEIR APPLICABLE WAGE RATE. THIS SHALL NOT APPLY TO LABORERS ENTITLED TO RECEIVE THE WAGE RATE SET PORTH IN GROUP 1(A).

b SATURDAYS IN THE SAME WORK WEEK MAY BE WORKED AT STRAIGHT-TIME IF JOB IS SHUT DOWN DURING THE NORMAL WORK WEEK DUE TO INCLEMENT WEATHER, MAJOR MECHANICAL BREAKDOWN OR LACK OF MATERIALS BEYOND THE CONTROL OF THE EMPLOYER.

c **AREA 1** - ALAMEDA, CONTRA COSTA, MARIN, SAN FRANCISCO, SAN MATEO, AND SANTA CLARA COUNTIES.
AREA 2 - ALPINE, AMADOR, BUTTE, CALAVERAS, COLUSA, DEL NORTE, EL DORADO, FRESNO, GLENN, HUMBOLDT, KINGS, LAKE, LASSEN, MADERA, MARIPOSA, MENDOCINO, MERCED, MODOC, MONTEREY, NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, SHASTA, SIERRA, SISKIYOU, SOLANO, SONOMA, STANISLAUS, SUTTER, TEHAMA, TRINITY, TULARE, TUOLUMNE, YOLO AND YUBA COUNTIES.

d SERVICE LANDSCAPE LABORER ON NEW CONSTRUCTION MAY WORK ANY FIVE (5) DAYS WITHIN A WEEK.

e GROUP 1(B) RECEIVES AN ADDITIONAL AMOUNT EACH DAY. SEE PAGE 50 FOR DETAILS.

f WHEN THREE SHIFTS ARE EMPLOYED FOR FIVE (5) OR MORE CONSECUTIVE DAYS, SEVEN AND ONE-HALF (7 ½) CONSECUTIVE HOURS (EXCLUSIVE OF MEAL PERIOD), SHALL CONSTITUTE A DAY OF WORK, FOR WHICH EIGHT (8) TIMES THE STRAIGHT TIME HOURLY RATE SHALL BE PAID AT THE NON-SHIFT WAGE RATE FOR THE SECOND SHIFT. THE THIRD SHIFT SHALL BE SEVEN (7) HOURS OF WORK FOR EIGHT (8) HOURS PAY AT THE NON-SHIFT WAGE RATE.

g ZONE PAY AT THREE DOLLARS ($3.00) PER HOUR, FACTORED AT THE APPLICABLE OVERTIME MULTIPLE, WILL BE ADDED TO THE BASE RATE FOR WORK PERFORMED OUTSIDE THE FREE ZONE DESCRIBED BY THE BOUNDARIES ALONG TOWNSHIP AND RANGE LINES. PLEASE SEE TRAVEL AND SUBSISTENCE PROVISION FOR MAP DESCRIPTION AND EXCEPTIONS.

RECOGNIZED HOLIDAYS: HOLIDAYS UPON WHICH THE GENERAL PREVAILING HOURLY WAGE RATE FOR HOLIDAY WORK SHALL BE PAID, SHALL BE ALL HOLIDAYS IN THE COLLECTIVE BARGAINING AGREEMENT, APPLICABLE TO THE PARTICULAR CRAFT, CLASSIFICATION, OR TYPE OF WORKER EMPLOYED ON THE PROJECT, WHICH IS ON FILE WITH THE DIRECTOR OF INDUSTRIAL RELATIONS. IF THE PREVAILING RATE IS NOT BASED ON A COLLECTIVELY BARGAINED RATE, THE HOLIDAYS UPON WHICH THE PREVAILING RATE SHALL BE PAID SHALL BE AS PROVIDED IN SECTION 6700 OF THE GOVERNMENT CODE. YOU MAY OBTAIN THE HOLIDAY PROVISIONS FOR THE CURRENT DETERMINATIONS ON THE INTERNET AT HTTP://WWW.DIR.CA.GOV/OPRL/PWD. HOLIDAY PROVISIONS FOR CURRENT OR SUPERSEDED DETERMINATIONS MAY BE OBTAINED BY CONTACTING THE OFFICE OF THE DIRECTOR – RESEARCH UNIT AT (415) 703-4774.

TRAVEL AND/OR SUBSISTENCE PAYMENT: IN ACCORDANCE WITH LABOR CODE SECTIONS 1773.1 AND 1773.9, CONTRACTORS SHALL MAKE TRAVEL AND/OR SUBSISTENCE PAYMENTS TO EACH WORKER TO EXECUTE THE WORK. YOU MAY OBTAIN THE TRAVEL AND/OR SUBSISTENCE PROVISIONS FOR THE CURRENT DETERMINATIONS ON THE INTERNET AT HTTP://WWW.DIR.CA.GOV/OPRL/PWD. TRAVEL AND/OR SUBSISTENCE REQUIREMENTS FOR CURRENT OR SUPERSEDED DETERMINATIONS MAY BE OBTAINED BY CONTACTING THE OFFICE OF THE DIRECTOR – RESEARCH UNIT AT (415) 703-4774.

GENERAL PREVAILING WAGE DETERMINATIONS MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

LOCALITY: SAN JOAQUIN COUNTY
DETERMINATION: SJO-2016-1

	CRAFT (JOURNEY LEVEL)	ISSUE DATE	EXPIRATION DATE	EMPLOYER PAYMENTS: BASIC HOURLY RATE	HEALTH AND WELFARE	PENSION	VACATION/ HOLIDAY	TRAINING	OTHER PAYMENTS	STRAIGHT-TIME: HOURS	TOTAL HOURLY RATE	OVERTIME HOURLY RATE: DAILY	SATURDAY	SUNDAY AND HOLIDAY
#	BRICKLAYER, BLOCKLAYER:													
	BRICKLAYER, BLOCKLAYER STONEMASON, POINTER, CLEANER, CAULKER, WATERPROOFER	2/22/2016	04/30/2016**	A 34.810	9.790	9.140	B 2.500	0.800	C 1.210	D 8.0	58.250	E 76.900	E 76.900	95.560
		8/22/2015	06/30/2016**	A 38.830	9.790	8.990	F -	1.390	0.400	D 8.0	59.400	78.820	G 78.820	98.230
#	BRICK TENDER	8/22/2015	06/30/2016**	H 32.270	7.540	10.180	F -	0.410	0.300	D 8.0	50.700	E 66.830	E 66.830	82.970
#	CARPET, LINOLEUM, RESILIENT TILE LAYER	2/22/2016	12/31/2016**	A 32.960	9.950	8.960	-	0.600	0.110	8.0	52.380	J 68.810	J 68.810	K 85.240
#	ELECTRICIAN:													
	COMM & SYSTEM INSTALLER	2/22/2016	11/30/2016**	29.980	10.050	L 5.150	-	1.100	M 0.210	8.0	47.540	N 63.050	N 63.050	78.570
	COMM & SYSTEM TECH	2/22/2016	11/30/2016**	34.140	10.050	L 5.150	-	1.100	M 0.210	8.0	51.840	N 69.510	N 69.510	87.180
	FIRE/ WIREMAN, TECHNICIAN	8/22/2015	05/31/2016**	34.750	14.040	L 8.700	-	1.560	O 0.380	8.0	61.000	P 79.160	P 79.160	97.320
	CABLE SPLICER, WELDER	8/22/2015	05/31/2016**	39.090	14.040	L 8.700	-	1.560	O 0.380	8.0	65.540	P 85.970	P 85.970	106.400
#	FIELD SURVEYOR:													
Q	CHIEF OF PARTY	2/22/2016	02/28/2017**	38.750	13.380	R 11.280	S 3.690	0.820	0.160	8.0	68.080	T 87.460	U 87.460	106.830
Q	INSTRUMENTMAN	2/22/2016	02/28/2017**	35.860	13.380	R 11.280	S 3.690	0.820	0.160	8.0	64.990	T 82.820	U 82.820	100.650
Q	CHAINMAN/FLAGMAN	2/22/2016	02/28/2017**	32.780	13.380	R 11.280	S 3.690	0.820	0.160	8.0	62.110	T 78.500	U 78.500	94.890
#	GLAZIER	2/22/2016	12/31/2016**	A 34.520	9.950	V 14.010	-	0.590	W 0.360	8.0	59.450	X 76.710	93.970	93.970
# Y	MARBLE FINISHER	8/22/2015	07/31/2016**	Z 30.220	9.790	3.930	-	0.450	0.550	8.0	44.940	AA 60.050	75.160	75.160
# Y	MARBLE MASON	8/22/2015	07/31/2016**	Z 40.410	9.790	14.390	-	0.800	0.770	8.0	66.160	AA 86.360	106.570	106.570
#	PAINTER:													
	BRUSH, SPRAY, PAPERHANGER	2/22/2016	12/31/2016**	AB 31.780	9.950	6.890	-	0.390	0.360	D 8.0	49.370	65.260	AC 65.260	81.150
	SANDBLASTER, STEAM CLEANER, WATERBLASTER	2/22/2016	12/31/2016**	AB 32.380	9.950	6.890	-	0.390	0.360	D 8.0	49.970	66.160	AC 66.160	82.350
	EXOTIC MATERIALS	2/22/2016	12/31/2016**	AB 32.780	9.950	6.890	-	0.390	0.360	D 8.0	50.370	66.760	AC 66.760	83.150
	LINER	2/22/2016	06/30/2016**	AB 38.660	9.950	11.100	-	0.460	0.500	8.0	60.670	80.000	AC 80.000	AC 99.330
AE	TAPER, CLEAN-UP	2/22/2016	06/30/2016*	AF 15.430	9.950	-	-	-	-	8.0	25.380	33.100	AC 33.100	AC 40.810
#	PLASTERER	8/22/2015	06/30/2016**	AG 31.060	13.030	8.930	3.000	1.080	1.100	8.0	58.200	72.860	AH 72.860	87.520
#	PLASTER TENDER	8/22/2015	06/30/2016**	30.020	7.540	9.730	2.630	0.430	AI 1.030	8.0	51.380	J 66.390	J 66.390	81.400
#	PLUMBER:													
	PLUMBER, STEAMFITTER, REFRIGERATION FITTER (HVAC)	2/22/2016	06/30/2016**	39.250	11.530	14.310	F -	1.300	1.920	8.0	68.310	E 87.930	E 87.930	107.560
	PIPE TRADESMAN	2/22/2016	06/30/2016*	13.000	9.340	1.000	F -	-	0.710	8.0	24.050	E 30.550	E 30.550	37.050
	UNDERGROUND UTILITY PIPEFITTER	8/22/2015	06/30/2016**	26.600	6.600	AJ 3.000	2.000	0.450	0.600	D 8.0	39.250	52.550	52.550	65.850
	LANDSCAPE PIPEFITTER	8/22/2015	06/30/2016**	26.600	6.600	AJ 3.000	2.000	0.450	0.600	D 8.0	39.250	52.550	52.550	65.850
AK	UNDERGROUND UTILITY ASSISTANT JOURNEYMAN	8/22/2015	06/30/2016**	15.600	6.600	AJ 3.000	2.000	0.450	0.600	D 8.0	28.250	36.050	36.050	43.850
AK	LANDSCAPE ASSISTANT JOURNEYMAN	8/22/2015	06/30/2016**	15.600	6.600	AJ 3.000	2.000	0.450	0.600	D 8.0	28.250	36.050	36.050	43.850
AL	UNDERGROUND UTILITY TRADESMAN	8/22/2015	06/30/2016**	10.900	6.600	AJ 3.000	2.000	0.450	0.600	D 8.0	23.550	29.000	29.000	34.450
AM	LANDSCAPE TRADESMAN	8/22/2015	06/30/2016**	10.550	6.600	AJ -	2.000	0.450	0.600	D 8.0	20.200	25.490	25.490	30.750
AM	LANDSCAPE TRADESMAN	8/22/2015	06/30/2016**	10.900	6.600	AJ 3.000	2.000	0.450	0.600	D 8.0	23.550	29.000	29.000	34.450
	FIRE SPRINKLER FITTER (PROTECTION AND CONTROL SYSTEMS OVERHEAD AND UNDERGROUND)	2/22/2016	03/31/2016*	34.310	8.770	AN 11.030	-	0.450	0.250	8.0	54.810	71.970	71.970	89.120

GENERAL PREVAILING WAGE DETERMINATIONS MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

LOCALITY: SAN JOAQUIN COUNTY
DETERMINATION: SJO-2016-1

	CRAFT (JOURNEY LEVEL)	ISSUE DATE	EXPIRATION DATE	EMPLOYER PAYMENTS: BASIC HOURLY RATE	HEALTH AND WELFARE	PENSION	VACATION/ HOLIDAY	TRAINING	OTHER PAYMENTS	STRAIGHT-TIME: HOURS	TOTAL HOURLY RATE	OVERTIME HOURLY RATE: DAILY	SATURDAY	SUNDAY AND HOLIDAY
#	ROOFER	8/22/2015	07/31/2016**	29.440	8.420	6.050	4.560	0.330	-	AQ 8.0	48.800	J 63.520	J 63.520	78.240
	BITUMASTIC, ENAMELER, COAL TAR PITCH AND MASTIC WORKER	8/22/2015	07/31/2016**	32.190	8.420	6.050	4.560	0.330	-	AQ 8.0	51.550	J 67.640	J 67.640	83.740
#	SHEET METAL WORKER	8/22/2015	06/29/2016*	A 38.950	12.650	AP 17.450	F -	AQ 0.820	AR 0.700	8.0	68.470	P 87.700	P 87.700	106.930
	METAL DECK & SIDING	8/22/2014	12/31/2014*	H 33.860	13.530	18.000	F -	AQ 0.300	-	8.0	65.690	P 82.620	P 82.620	99.550
# AS	TERRAZZO FINISHER	2/22/2016	06/30/2016**	AT 33.780	9.790	5.140	F -	0.800	0.830	8.0	50.340	P 65.120	P 65.120	79.900
# AS	TERRAZZO WORKER	2/22/2016	06/30/2016**	AT 41.010	9.790	14.940	F -	0.800	1.010	8.0	67.550	P 85.370	P 85.370	103.190
#	TILE FINISHER	8/22/2015	03/31/2016*	AU 22.610	8.830	3.640	0.700	0.400	1.130	8.0	37.310	48.620	D 48.620	59.920
	RED CIRCLED FINISHER	8/22/2015	03/31/2016*	AU 27.290	8.830	3.940	1.300	0.360	1.130	8.0	42.840	56.490	D 56.490	70.130
#	TILE SETTER	8/22/2015	03/31/2016*	AU 35.360	8.830	4.690	2.360	0.640	1.690	8.0	53.560	71.240	D 71.240	88.920
	WATER WELL DRILLER													
	DRILLER, PUMP REPAIRMAN	8/22/2007	01/31/2008*	20.170	8.120	3.690	AW 0.800	-	-	8.0	32.780	AW 42.870	AW 42.870	AW 42.870
	PUMP INSTALLER	8/22/2007	01/31/2008*	17.860	8.120	3.690	AX 0.720	-	-	8.0	30.390	AW 39.320	AW 39.320	AW 39.320
	HELPER	8/22/2007	01/31/2008*	12.470	8.120	3.690	AY 0.530	-	-	8.0	24.810	AW 31.040	AW 31.040	AW 31.040

FOOTNOTES

EXHIBIT C - FULL SPECIFICATIONS

PROJECT MANUAL INDEX

PROJECT MANUAL

FOR

CITY OF STOCKTON

City Hall Relocation – Phase 2

City Manager, City Attorney, and Clerk's Office

1ST & 7TH Floors

400 E. MAIN STREET

STOCKTON, CALIFORNIA

GENERAL CONDITIONS

Refer to City of Stockton General Conditions

SPECIFICATIONS

DIVISION 1: GENERAL REQUIREMENTS

Section 01 00 00	Construction Sequencing and Constraints
Section 01 00 10	Definitions
Section 01 00 50	Working Conditions
Section 01 01 00	Summary of Work
Beginning of Work, Time, Completion, & Liquidated Damages	
Section 01 02 50	Cost Reporting & Payment
Section 01 10 00	Special Conditions
Section 01 20 00	Project Meetings & Schedules
Section 01 25 00	Contract Modification Procedures
Section 01 32 00	Construction Progress Documentation
Section 01 33 00	Submittal Procedures
Section 01 40 00	Procedures & Quality Control
Section 01 45 00	Product Handling
Section 01 50 00	Temporary Facilities and Controls
Section 01 60 00	Materials & Equipment
Section 01 70 00	Project Closeout
Section 01 73 10	Cutting and Patching
Section 01 73 20	Selective Demolition

Section 01 78 10 Project Record Documents
Section 01 80 00 Maintenance

DIVISION 5: METALS
Section 05 40 00 Cold Formed Metal Framing

DIVISION 6: CARPENTRY
Section 06 40 00 Architectural Woodwork

DIVISION 7: THERMAL & MOISTURE PROTECTION
Section 07 21 00 Building Insulation
Section 07 92 00 Joint Sealants

DIVISION 8: DOORS AND WINDOWS
Section 08 12 50 Interior Aluminum Frames
Section 08 21 10 Flush Wood Doors
Aluminum Framed Entrances and Storefronts
Section 08 71 00 Door Hardware
Section 08 80 00 Glazing

DIVISION 9: FINISHES
Section 09 26 00 Gypsum Board Assemblies
Section 09 51 10 Acoustical Panel Ceilings
Section 09 60 00 Carpet Tile
Section 09 65 10 Resilient Floor Tile
Section 09 65 30 Resilient Wall Base and Accessories
Section 09 66 10 Static Control Resilient Floor Coverings
Section 09 91 20 Painting

DIVISION 10: SPECIALTIES
Section 10 43 40 Panel Signage
Section 10 52 20 Fire Protection Cabinets
Section 10 52 30 Fire Extinguishers

DIVISION 22: PLUMBING
Section 22 00 50 Basic Plumbing Materials and Methods
Section 22 10 00 Plumbing Piping Systems
Section 22 40 00 Plumbing Fixtures

DIVISION 23: HEATING, VENTILATION AND AIR CONDITIONING (HVAC)
Section 23 0050 Basic HVAC Materials and Methods

Section 23 05 93 Testing, Adjusting, and Balancing for HVAC
Section 23 80 00 Heating, Ventilating, and Air Conditioning

DIVISION 26: ELECTRICAL
Section 26 05 00 Common Work Results for Electrical
Grounding and Bonding for Electrical Systems
Section 26 05 33 Raceways and Boxes
Section 26 09 23 Lighting Control Devices
Section 26 27 26 Wiring Devices
Section 26 28 11 Overcurrent Protection Devices
Safety Switches and Individual Mounted Circuit Breakers
Section 26 50 00 Lighting

DIVISION 27: COMMUNICATIONS
Grounding for Bonding for Communications
Section 27 05 28 Pathways for Communication Systems
Section 27 11 16 Data Racks and Enclosures
Copper Telecommunications/Data Cabling and Devices

END OF INDEX

SECTION 01 00 10 - DEFINITIONS

PART 1 - GENERAL

1.1 Architect

A Architect shall mean LDA Partners, LLP

1.2 CONSTRUCTION MANAGER

A. Construction Manager shall mean the designated Construction Manager by the City of Stockton.

1.3 CITY

A. City shall mean The City of Stockton, California.

PART 2 – PRODUCTS (NOT USED)

PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 00 50 - WORKING CONDITIONS

PART 1 - GENERAL

1.1 Description

A. Attention is directed to Section 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," of the City of Stockton Standard Specifications and these Special Provisions.

B. The Contractor shall not shut down any part of the existing services without prior authorization from the City or its' Agents. After the completion of specific work, all electric, water, gas, or telephone services temporarily disconnected shall be immediately restored.

C. The Construction Manager shall assign to the Contractor at the pre-construction meeting allowable areas for the storage of construction materials and for the use by workmen and the limits of the work assigned to him.

D. The Contractor shall be responsible for obtaining City, County, State or Federal permits, licenses, certificates, approvals prior to and for the completion of the work. All applicable provisions of OSHA regarding Occupational Safety and Health Administration Code shall be adhered to.

E. All work under this contract will be under the control and inspection of the City, or his appointed representatives. Any and all construction comments by other forces shall be referred to the Architect.

F. City intends to occupy the 3rd and 4th floors during working hours (7am-6pm). All work in or near occupied areas must be coordinated in advance.

PART 2 – PRODUCTS (NOT USED)

PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 01 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 The work herein to be performed by the Contractor consists of constructing and completing the "Project," as defined in the General Conditions and Requirements, in accordance with the Drawings and Specifications and all applicable provisions of the Contract Documents and the City of Stockton Standard Specifications. It is intended that these plans and the City of Stockton Standard Specifications and these Special Provisions require all labor and materials necessary for the work contemplated. The Contractor shall notify the City immediately regarding any discrepancies or ambiguities which may exist in the Plans, Specifications and Special Provisions. The City's interpretation or correction thereof shall be conclusive.

1.2 The "Project" shall generally consist of construction of an interior office remodel as described in the Plans and Specifications entitled CITY OF STOCKTON CITY HALL RELOCATION, CITY MANAGER, CITY ATTORNEY, AND CITY CLERK'S OFFICE, 1st and 7th FLOORS, 400 E. Main St., Stockton, CA.

A. The "Work" as described in these specifications shall generally consist of all work specified, indicated, shown or contemplated in the contract to construct the improvements.

B. The "Work" includes but is not limited to the following general item description: Relocation of the City Manager, City Attorney, and City Clerk departmental offices. The Contractor shall patch back all roofing and area of demolition at 400 E. Main St as part of this project. Trades utilized on this project include but are not limited to: Plumbing, HVAC, Electrical, Power, Lighting, Fire Suppression, Fire Alarm, Telephone, Data, Communication/TV and Computer Network. At no time shall operations at the 4th floor IT center be compromised.

C. Order and furnish all labor, materials, supplies, tools, and transportation and perform all operations in connection with and reasonably incidental to complete the installation of the project.

D. Owner will be occupying building during construction. Access limitations include: Working hours between 7AM to 5PM Monday through Friday. ***Work done above and below the 1st and 7th floors shall be done between 6PM to 10PM with 48 hours advance notice.*** Power shutdowns must be given 72hours notice and must be approved by the City of Stockton and building landlord (CBRE).

PART 2 – PRODUCTS (NOT USED) PART

3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 02 00 - BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

PART 1 - GENERAL

1.1 Attention is directed to the provisions of Section 8-1.3, "Beginning of Work," Section 8-1.06 "time of Completion," and Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these Special Provisions.

1.2 Modifications to General Conditions:
Working days: Contractor shall diligently pursue and complete contract work within ***240 calendar days*** of Notice to Proceed. Work shall commence within 10 days of Notice to Proceed and shall be diligently pursued to completion.

Following the receipt of an approved project schedule, a notice to proceed will be issued shortly thereafter but not before a preconstruction meeting has been held. The contract shall then be diligently prosecuted to completion before the expiration ***of 240 calendar days*** from the date of the Notice to Proceed.

1.3 The Contractor shall pay to the City of Stockton the sum of Two Thousand Dollars ($2000.00) per day for each and every calendar day delay in finishing the work in excess of the number of calendar days prescribed above. Calendar days shall commence from the date of the notice to proceed, unless otherwise approved by the City.

1.4 Should the Contractor choose to work after normal business hours or on a Saturday, Sunday, or on a holiday recognized by the labor unions, the Contractor shall reimburse the City of Stockton the actual cost of engineering, inspection, supervision, and other overhead expenses which are directly chargeable to the contract. Should work be undertaken at the request of the City, reimbursement will not be required.

PART 2 – PRODUCTS (NOT USED)

PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 02 50 - COST REPORTING AND PAYMENT

PART 1 - GENERAL

1.1 Schedule of Values: A schedule of values to show breakdown of Contract corresponding with payment request breakdown and progress schedule line items is required for this project. The Items of Work Schedule shall be the basis of the schedule of values. The Contractor shall expand and/or modify this schedule as directed by the Construction Manager. The line item breakdown of the schedule of values shall be subject to approval by the City representative. Schedule of values shall be submitted within ten (10) days of the Notice to Proceed. The Items of Work Schedule is shown in Appendix A.

1.2 Payment Requests: Submit request for payment as outlined in the contract or as below:

A. Prior to initial payment request, submit:
Submit 3 copies and electronic content to format: Utilize Schedule of values for listing items
Submit updated Progress schedule monthly Payroll records
DAS-140 forms
The Contractor shall also furnish periodic itemized estimates of work done for the purpose of making payments thereon. The estimates shall list the items and percentage of completion of each line item in the approved schedule of values. Progress photographs, digital to print.

B. Contractor may submit final payment request, provided the following have been completed:

Submit warranties and similar documentation
Signed Mechanics' Lien release, or other proof of final payment, from each subcontractor
1. Submit maintenance manuals and provide instruction of City's operational/maintenance personnel.

2. Complete final punch list and cleaning of the work. Attend post construction meeting. Issuance of a Certificate of Occupancy

C. The contract lump sum price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in each of the items, as shown on the plans, as specified in the City of Stockton Standard Specifications and these special provisions, and the Project Manual, and as directed by the Construction Manager and Architect. Items not specifically listed but necessary for a full and complete installation of the work (e.g. mobilization, construction staking, erosion and sediment control, etc.) shall be considered incidental to the items listed and no separate payment for such items shall be made. The Construction Manager's determination of what items are to be included in the category of "necessary for a full and complete installation of the work" shall be final.

PART 2 – PRODUCTS (NOT USED) PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 10 00 - SPECIAL CONDITIONS

PART 1 – GENERAL

1.1 Description

A. This work shall be done in accordance with the City of Stockton, Department of Public Works, Standard Specifications and Plans insofar as the same may apply and in accordance with the following Special Provisions. To the extent the Department of Transportation Standard Specifications implement the STATE CONTRACT ACT they shall not be applicable since the City of Stockton is not subject to said ACT.

B. In case of conflict between the Standard specifications and these Special Provisions, the Special Provisions shall take precedence over and be used in lieu of such conflicting portions.

C. In the event of conflict between latest City adopted editions of the governing codes (California Building Code, California Electric Code, California Fire Code, California Plumbing Code and California Mechanical Code) and others as applicable, and the Standard Specifications and the Special Provisions, the governing code requirements shall take precedence.

D. Existing Facilities: Attention is directed to Section 15 of the City of Stockton Standard Specifications. The Contractor shall protect all existing facilities from damage. It shall be the responsibilities of the Contractor to ascertain their exact location and to protect them from damage. Any existing utilities damaged due to the Contractor's operation shall be repaired to the satisfaction of the Construction Manager at no additional cost to the City of Stockton.

E. The Contractor shall notify the Construction Manager forty-eight (48) hours in advance of any construction.

F. The building at 400 E. Main has existing building systems infrastructure in which new tenant improvements must tie into. Those systems are:

Building System	Vender
Fire Alarm	Simplex
Access Control	Emerge
HVAC DDC Control	Delta Controls
Electrical Panels & Breakers	GE

PART 2 – PRODUCTS (NOT USED) PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 20 00 - PROJECT MEETINGS AND SCHEDULES

PART 1 - GENERAL

1.1 Pre-construction Meeting: The Contractor shall contact the Construction Manager, 72 hours prior to starting the project to arrange for a pre-construction meeting.

1.2 Periodic Meetings: Weekly job site meetings will be held by the Construction Manager and Architect to review modifications or conflicts in the Work. The Contractor shall attend such meetings and shall require subcontractors to attend as necessary and/or as requested.

1.3 Project Schedule:

A. Within 10 days of awarding the contract, and at the time of the pre-construction meeting, the Contractor shall prepare and submit to the Construction Manager six (6) copies of the revised construction schedule. The schedule shall be in a form acceptable to the Construction Manager showing the proposed date of commencement and completion of each of the various subdivisions or units of work required under this Contract. Items on the schedule shall be arranged in the order and sequence in which they will be performed. The schedule shall conform to the working time and time of completion established under the terms of the Contract and shall be subject to modification by and approval by the Construction Manager. When, in the opinion of the Construction Manager it becomes necessary to accelerate the work, the Contractor, when so ordered, shall modify the schedule to conform to such requirements.

1.05 Post Construction Meeting

A. The Contractor may be required to attend a post construction meeting that will be arranged by the City representative after completion of work and prior to acceptance and final payment. The project Architect and the project inspector shall attend this meeting. The purpose of the meeting will be to discuss the project and any related issues that can help improve future construction projects.

PART 2 – PRODUCTS (NOT USED) PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 25 00 - CONTRACT MODIFICATION PROCEDURES

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions." Contractor overhead & profit percentages shall be limited to 10% for all Change Orders. This shall include deductive amounts.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

b) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

c) Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times,

and activity relationship. Use available total float before requesting an extension of the Contract Time.

C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.5 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place.

1. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
2. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
3. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 21 days after such authorization.

1.6 CHANGE ORDER PROCEDURES

A. City of Stockton Standard Specs 4-1.03.

1.7 FIELD ORDER

A. Field Order: Construction Manager may issue a Field Order. Field Order instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. Field Order contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Field Order.
1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2. - PRODUCTS (Not Used) PART 3. - EXECUTION (Not Used) END OF SECTION

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
3. Submittals Schedule.
4. Field condition reports.
5. Special reports.

B. Related Sections include the following:
1. Division 1 Section 01330 "Submittal Procedures" for submitting schedules and reports.

1.3 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article and in-house scheduling personnel to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Preliminary Construction Schedule: Submit five printed copies.

C. Contractor's Construction Schedule: Submit five printed copies of initial schedule, large enough to show entire schedule for entire construction period.

D. CPM Reports: Concurrent with CPM schedule, submit five printed copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.

E. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

F. Special Reports: Submit two copies at time of unusual event.

1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2. - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section 01330 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include not less than 14 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. CPM Schedule: Prepare Contractor's Construction Schedule using a CPM network analysis diagram.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.
2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Use "one workday" as the unit of time.

B. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

a) Preparation and processing of submittals.
b) Delivery.
c) Fabrication.
d) Installation.

2. Processing: Process data to produce output data or a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
3. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

a) Subnetworks on separate sheets are permissible for activities clearly off the critical path.

C. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

2.3 REPORTS

A. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information on CSI Form 13.2A. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

A. General: Submit special reports directly to Construction Manager within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3. - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule two days before each regularly scheduled progress meeting.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

END OF SECTION

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's and Construction Manager's responsive action.

B. Informational Submittals: Written information that does not require Architect's and Construction Manager's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Architectural electronic copies of CAD drawings of the contract drawings will be provided by the Architect for the Contractor's use in preparing submittals, shop drawings and record drawings. Engineering CAD drawings will not be provided to the Contractor for any use including for the creation of submittals, shop drawings, and record drawings. The Contractor will prepare any necessary drawings for their related discipline to confirm the proposed building systems do not conflict with existing conditions and other trades.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
a) Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Construction Manager's receipt of submittal.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Construction Manager will advise Contractor when a submittal being processed must be delayed for coordination.
2. If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Allow 15 days for processing each resubmittal.
4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Include the following information on label for processing and recording action taken:
a) Project name.
b) Date.
c) Name and address of Contractor.
d) Name and address of subcontractor.
e) Name and address of supplier.
f) Name of manufacturer.
g) Unique identifier, including revision number.
h) Number and title of appropriate Specification Section.
i) Drawing number and detail references, as appropriate.
j) Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect or Construction Manager observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Construction Manager.
2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect and Construction Manager will return submittals, without review, received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and Construction Manager on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.

2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating action taken by Architect and Construction Manager in connection with construction.

PART 2. - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit six copies of each submittal, unless otherwise indicated. Architect, through Construction Manager, will return four copies. Mark up and retain one returned copy as a Project Record Document.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Include the following information, as applicable:
a) Manufacturer's written recommendations.
b) Manufacturer's product specifications.
c) Manufacturer's installation instructions.
d) Color charts.
e) Manufacturer's catalog cuts.
f) Wiring diagrams showing factory-installed wiring.
g) Printed performance curves.
h) Operational range diagrams.
i) Mill reports.
j) Standard product operating and maintenance manuals.
k) Compliance with recognized trade association standards.
l) Compliance with recognized testing agency standards.
m) Application of testing agency labels and seals.
n) Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
a) Dimensions.
b) Identification of products.
c) Fabrication and installation drawings.
d) Roughing-in and setting diagrams.
e) Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f) Shop work manufacturing instructions.
g) Templates and patterns.
h) Schedules.
i) Design calculations.
j) Compliance with specified standards.
k) Notation of coordination requirements.
l) Notation of dimensions established by field measurement.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 24 by 36 inches (750 by 1000 mm).

3. Number of Copies: Submit six blue- or black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit six prints where prints are required for operation and maintenance manuals. Architect and Construction Manager will retain three prints; remainder will be returned. Mark up and retain one returned print as a Project Record Drawing.

D. Samples: Prepare physical units of materials or products, including the following:

1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

2. Disposition: Maintain sets of approved Samples at Project site, available for quality- control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a) Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit six copies of each submittal, unless otherwise indicated. Architect and Construction Manager will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."

B. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

D. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

E. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures Operation and Maintenance Data."

F. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

PART 3. - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S AND CONSTRUCTION MANAGER'S ACTION

A. General: Architect and Construction Manager will not review submittals that do not bear Contractor's approval stamp and will return them without action.

1. Action Submittals: Architect and Construction Manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect and Construction Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

B. Submittals not required by the Contract Documents will not be reviewed and may be discarded. END OF SECTION

SECTION 01 40 00 - PROCEDURES AND QUALITY CONTROL

PART 1 - GENERAL

1.1 Progress Schedule

A. Progress schedule shall be required for this project and shall conform to the provisions in Section 8-1.04 of the City of Stockton "Standard Specifications and Plans" published by the Public Works Department.

1.2 Installation

A. General: Comply with manufacturer's instructions and recommendations. Clean and protect to ensure that products, materials and equipment will be free from damage and deterioration at time of acceptance.

B. Installer Cooperation: Require installer of each major unit of work to inspect substrate and conditions for installation, and to report (in writing) unsatisfactory conditions. Correct unsatisfactory conditions before proceeding. Inspect each product immediately before installation, and do not install damaged or defective products, materials or equipment.

C. Refer to contract drawings for all special inspections required.

1.3 Cleaning and Protection:

A. General: Clean each element of work at time of installation. Provide sufficient maintenance and protection during construction to ensure freedom from damage and deterioration at time of substantial completion.

PART 2 – PRODUCTS (NOT USED) PART 3- EXECUTION (NOT USED)

END OF SECTION

SECTION 01 45 00 - PRODUCT HANDLING

PART 1 - GENERAL

1.1 Work included: Protect products schedule for use in the work by means including, but not necessarily limited to, those described in this Section. Quality Assurance: Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.2 Manufacturer's Recommendations: Except as otherwise approved by the Construction Manager or Architect, determine and comply with manufacturers' recommendation on product handling, storage, and protection.

1.3 Packaging

A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.

1. Maintain packaged materials with seals unbroken and labels intact until time of use.
2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the City.

B. The Architect may reject as non-complying such material and products that do not bear identification satisfactory to the Construction Manager as to manufacturer, grade, quality, and other pertinent information.

1.4 Repairs and Replacements

A. In event of damage, promptly make replacements and repairs to the approval of the Construction Manager and at no additional cost to the City.

B. Additional time required to secure replacements and to make repairs will not be considered by the Construction Manager to justify an extension in the Contract Time of Completion.

PART 2 – PRODUCTS (NOT USED) PART 3- EXECUTION (NOT USED)

END OF SECTION

PRODUCT HANDLING ***01 45 00-1***

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

B. Temporary utilities include, but are not limited to, the following:
1. Water service and distribution.
2. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
3. Electric power service.
4. Lighting.
5. Telephone service.

C. Support facilities include, but are not limited to, the following:
1. Temporary roads and paving.
2. Dewatering facilities and drains.
3. Project identification and temporary signs.
4. Waste disposal facilities.
5. Field offices.
6. Storage and fabrication sheds.
7. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities include, but are not limited to, the following:
1. Environmental protection.
2. Stormwater control.
3. Tree and plant protection.
4. Site enclosure fence.
5. Security enclosure and lockup.
6. Barricades, warning signs, and lights.
7. Fire protection.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
1. Owner's construction forces.
2. Occupants of Project.
3. Architect.
4. Testing agencies.
5. Personnel of authorities having jurisdiction.

1.4 QUALITY ASSURANCE

A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.

1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
1. Keep temporary services and facilities clean and neat.
2. Relocate temporary services and facilities as required by progress of the Work. PART 2. -

PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.

B. Portable Chain-Link Fencing: Minimum 2-inch (50-mm) 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8- inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8- inch- (42-mm-) OD top and bottom rails. Provide galvanized steel bases for supporting posts.

C. Water: Potable.

2.2 EQUIPMENT

A. General: Provide equipment suitable for use intended.

B. Field Offices: Contractor will be able to use 2 un-used offices on the 3rd floor for construction offices. Provide the field office with a table and chairs for 8 people. Provide phone and fax for use by inspector, architect, and construction manager.

C. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

D. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. The Contractor may use restroom facilities on the 3rd floor in lieu of self contained toilet units.

E. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7.2 to 12.7 deg C).

F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light. There is existing power to the facility. The Contractor may use existing power connections for construction of the facility. Contractor is required to provide power as required during all electrical service transfers and shutdowns.

PART 3. - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching,

compatible materials and equipment. Comply with utility company recommendations. There is existing power to the facility. The Contractor may use existing power connections for construction of the facility. Contractor is required to provide power as required during all electrical service transfers and shutdowns.

1. Arrange with utility company, and Owner for time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.

B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. There is existing water service to the building. The Contractor may use the existing water connection for construction purposes. Water meter must be replaced. The Contractor is to supply water as required during shutdown of existing service during change-over.
1. Provide rubber hoses as necessary to serve Project site.
2. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
2. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.

D. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
1. Connect temporary service to Owner's existing power source, as directed by electric company officials.

E. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
2. Provide warning signs at power outlets other than 110 to 120 V.

F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

G. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities. Install separate telephone line for each field office and first-aid station.
1. Provide additional telephone lines for the following:
a) Provide a dedicated telephone line for a facsimile machine.
2. At each telephone, post a list of important telephone numbers.

a) Police and fire departments.
b) Ambulance service.
c) Contractor's home office.
d) Architect's office.
e) Owner's office.
f) Principal subcontractors' field and home offices.
3. Provide voice-mail service on superintendent's telephone.

A. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

B. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.

a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.

b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.

2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust- producing equipment. Isolate limited work within occupied areas using portable dust- containment devices.
3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

C. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-

site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

B. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

C. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.

1. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- (16- mm-) thick exterior plywood.

D. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.

a) Field Offices: Class A stored-pressure water-type extinguishers.

b) Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.

c) Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.

2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire- protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.

4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

1. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Temporary Facility Changeover: Except for using permanent fire protection, as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION

SECTION 01 60 00 - MATERIALS AND EQUIPMENT

1.1 General

1.2 The Contractor shall furnish all materials and/or equipment needed to complete the work and installations required under the terms of the Contract; exclusive of such materials and/or equipment specifically designated to be furnished and/or installed by the City or under separate Contract.

A. The Contractor shall submit satisfactory evidence of compliance with the specifications of such materials and/or equipment to be furnished under the Contract and/or to be incorporated in to the work, as the Construction Manager may require.

1.3 Trade Names

A. Whenever in these Specifications or on the Drawings the name or brand of manufactured article is used it is intended to indicate a measure of quality and utility or a standard.

1.4 Quality

A. Both materials and workmanship shall be first quality; all of which shall be subject to the review of the Construction Manager. Materials shall be new and free from either factory, shop or field applied trade signs or advertising labels exposed to view in the finished work, except only as specified for certain identification work and/or only necessary to identify fire-rated materials or construction.

1.5 Substitutions

A. Within ten (10) days after the "Notice to Proceed," the Contractor shall submit for record and information a complete list of all materials which differ in any respect from materials specified and all materials which are proposed for use in work of this Contract and which are not specifically mentioned in the Specifications.

B. Specific Requirements: The Construction Manager will consider proposals for substitution of materials, equipment and/or methods only when such proposals are accompanied by full and complete technical data and other information required by the Construction Manager to evaluate the proposed substitution. Proposals submitted without complete data will not be considered. Do not substitute materials, equipment and/or methods unless such substitution has been specifically approved for the work by the Construction Manager or Architect.

C Unavailability of Equipment or Materials: Substitution for specified equipment or materials may be proposed by the Contractor if the specified equipment or materials cannot be delivered and incorporated in the work in the time allowed due to conditions beyond the control of the Contractor. Each request for substitution shall include a statement of cause with substantiating documents as proof of quality, delivery time, and costs in the form of certified quotations from suppliers of both specified and proposed material. Request shall be proposed and submitted as required below.

D Acceptance of substitution shall not relieve Contractor from responsibility for compliance with all requirements of the Drawings and Specifications, and Contractor shall be responsible at Contractor's own expense for changes in other parts of Contractor's work or work of others, including, but not limited to redesign costs of the Project which may be caused by acceptance of substitution.

END OF SECTION

SECTION 01 70 00 - PROJECT CLOSEOUT

Part 1 – General

1.1 Related Documents

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

1. Inspection procedures.
2. Project record document submittal.
3. Operating and maintenance manual submittal.
4. Submittal of warranties.
5. Final cleaning.

1.3 Substantial Completion

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

2. Advise Owner of pending insurance change-over requirements.

3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.

5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.

6. Deliver tools, spare parts, extra stock, and similar items.

7. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.

8. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

9. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

B. Inspection Procedures: On receipt of a request for inspection, the Construction Manager will either proceed with inspection or advise the Contractor of unfilled requirements. The Construction Manager will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction what must be completed or corrected before the certificate will be issued.

1. The Construction Manager will repeat inspection when requested and assured that the Work has been substantially completed.

2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 Final Acceptance

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.

3. Submit a certified copy of the Construction Manager's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.

4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.

5. Submit consent of surety to final payment.

6. Submit a final liquidated damages settlement statement.

7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure: The Construction Manager and Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

1. Upon completion of reinspection, the Construction Manager will prepare a certificate of final acceptance, or advise the Contractor of Work what is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

2. If necessary, reinspection will be repeated.

1.5 Record Document Submittals

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Construction Manager's reference during normal working hours.

B. Record Drawings: Refer to Section 01781 "Project Record Documents".

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Upon completion of the Work, submit record Specifications to the Construction Manager for the Owner's records.

D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

1. Upon completion of mark-up, submit complete set of record Product Data to the Construction Manager for the Owner's records.

E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Engineer and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.

F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Engineer for the Owner's records.

G. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.
4. Wiring diagrams.

5. Recommended "turn around" cycles.
6. Inspection procedures.
7. Shop Drawings and Product Data.
8. Fixture lamping schedule.

Part 2 - Products (Not Applicable) Part 3 - Execution

3.1 Closeout Procedures

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.2 Final Cleaning

A. General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".

B. Cleaning: Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.

a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision- obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective

surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 01 73 10 - CUTTING AND PATCHING

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
1. Divisions 2 through 28 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
2. Construction Drawings.

1.3 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio, U.O.N.

B. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

1. Primary operational systems and equipment.
2. Fire-protection systems.
3. Control systems.
4. Electrical wiring systems.

C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety, U.O.N.

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Piping, ductwork, vessels, and equipment.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades, as applicable. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2. - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications and the Drawings.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3. - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut. Shoring shall be "design build" by Contractor.

B. Protection: Protect existing construction during cutting and patching to prevent damage.

Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

A. General: Employ skilled workers 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, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: 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. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a) Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even- plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION

SECTION 01 73 20 - SELECTIVE DEMOLITION

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
1. Demolition and removal of selected site elements.

1.3 DEFINITIONS

A. Remove: Detach items from existing site and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.

C. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Locations of temporary partitions and means of egress.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

D. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

D. Predemolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.7 PROJECT CONDITIONS

A. Maintain access to existing walkways and other adjacent occupied or used facilities.
1. Do not close or obstruct walkways or other occupied or used facilities without written permission from authorities having jurisdiction.

B. Owner assumes no responsibility for condition of areas to be selectively demolished.
1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
2. Before selective demolition, Owner will remove the following items:
   a) All equipment, included conditioning apparatus, and furniture.

C. Hazardous Materials:
1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Refer to Hazardous Materials Specifications included within the Project manual for removal

D. Storage or sale of removed items or materials on-site will not be permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 ADDITIONAL HAUL-OFF

A. Provide a 30 yard dumbster for additional haul-off of material not related to construction debris.
1 Dumpster shall fit within building loading dock with gate closed.
2 Confirm with building engineering for use of loading dock. PART 2. - PRODUCTS (NOT USED)

PART 3. - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.

B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
1. Provide at least 48 hours' notice to Owner if shutdown of service is required during changeover.

C. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
3. Protect existing site improvements, appurtenances, and landscaping to remain.
4. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

B. Temporary Enclosures: Provide temporary enclosures for protection of building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

C. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

3.4 POLLUTION CONTROLS

A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.
10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

B. Existing Facilities: Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

E. Carpet and Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.

1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

F. Roofing: Remove no more existing roofing than can be covered in one day by new roofing. Refer to applicable Division 7 Section for new roofing requirements.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them. END

OF SECTION

SECTION 01 78 10 - PROJECT RECORD DOCUMENTS

PART 1. - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up Record Prints. Submit one copy of Record CAD Drawings.

PART 2. - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a) Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b) Accurately record information in an understandable drawing technique.

c) Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a) Dimensional changes to Drawings.
b) Locations and depths of underground utilities.
c) Revisions to routing of piping and conduits.
d) Revisions to electrical circuitry.

e) Actual equipment locations.
f) Duct size and routing.
g) Locations of concealed internal utilities.
h) Changes made following Architect's written orders.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. Prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:

1. Format: .DWG, Version, AutoCAD Architectural Desktop, operating in Microsoft Windows operating system, or approved equal.
2. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
3. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.

a) Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
b) CAD Software Program: The Contract Drawings are available in AutoCAD v15 electronic format, Microsoft Windows Operating System.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Include identification on cover sheets.
2. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
3. Identification: As follows:

a) Project name.
b) Date.
c) Designation "PROJECT RECORD DRAWINGS."
d) Name of Architect.
e) Name of Contractor.

PART 3. - EXECUTION

3.1 RECORDING AND MAINTENANCE

PROJECT RECORD DOCUMENTS ***01 78 10-2***

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION

PROJECT RECORD DOCUMENTS ***01 78 10-3***

SECTION 01 80 00 - MAINTENANCE

PART 1 - GENERAL

1.1 The Contractor shall perform all operations necessary for, and properly incidental to, cleanup during construction, and final site cleanup prior to the acceptance of the project by the City.

1.2 Cleanup During Construction

A. During construction phases of the work the Contractor shall keep dust and debris to a minimum. In no instance shall dust and debris be permitted beyond the limits of the construction. The Contractor shall use all necessary measures to reduce the impact on City personnel at other areas of the building and the Construction Manager may, at any time during construction, order a general cleanup of the project as part of the work under this Section.

B. Contractor shall dispose of waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction. Burying of such waste material and debris on the site will not be permitted. Burning of trash and debris on the site will not be permitted.

C. Location of dump for trash and debris and length of haul is the Contractor's responsibility.

1.01 Final Site Cleaning: Prior to final inspection, thoroughly clean the entire area and put into a neat, acceptable condition. Remove from the entire site all construction waste and used materials, dunnage, and all debris of any description resulting from the work.

PART 2 – PRODUCTS (NOT USED) PART 3- EXECUTION (NOT USED)

END OF SECTION

MAINTENANCE ***01 80 00-1***

SECTION 05 40 00 - COLD-FORMED METAL FRAMING

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 Ceiling joist framing.
2 Soffit framing.
3 Interior wall framing.

1.3 PREINSTALLATION MEETINGS

A Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A Product Data: For each type of cold-formed steel framing product and accessory.

1.5 INFORMATIONAL SUBMITTALS

A Welding certificates.

B Product Test Reports: For each listed product, for tests performed by a qualified testing agency.
1 Expansion anchors.
2 Power-actuated anchors.
3 Mechanical fasteners.
4 Vertical deflection clips.
5 Horizontal drift deflection clips
6 Miscellaneous structural clips and accessories.Insert specific model code organization in "Research Reports" Paragraph below or revise if report must be from another source.

1.6 QUALITY ASSURANCE

A Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
B Product Tests: Mill certificates or data from a qualified independent testing agency, or in-house testing with calibrated test equipment indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, and metallic-coating thickness.
C Welding Qualifications: Qualify procedures and personnel according to the following:
1 AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2 AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
D Comply with AISI S230 "Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings."

1.7 DELIVERY, STORAGE, AND HANDLING

A Protect cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A Cemco
B Clark Dietrrich C Nucon Steel D SCAFCO

2.2 PERFORMANCE REQUIREMENTS

A AISI Specifications and Standards: Unless more stringent requirements are indicated, comply with AISI S100 and AISI S200.
B Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1 Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.3 COLD-FORMED STEEL FRAMING, GENERAL
A Steel Sheet for Vertical Deflection Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
1 Grade: ***33 (230)***, ***50 (340),*** Class 1 as indicated on project documents. 2 Coating: ***G60 (Z180).***

2.4 NON LOAD-BEARING WALL FRAMING

A Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
1 Minimum Base-Metal Thickness: ***0.0329 inch (0.84 mm)*** unless noted otherwise on plan.
2 Flange Width: ***1-3/8 inches (35 mm)*** unless noted otherwise on plan.

B Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and as follows:
1 Minimum Base-Metal Thickness: ***Matching steel studs*** unless noted otherwise on plan.
2 Flange Width: ***1-1/2 inches unless noted otherwise on plan.***

C Steel Box or Back-to-Back Headers: Manufacturer's standard C-shapes used to form header beams, of web depths indicated, unpunched, with stiffened flanges, and as follows:

1 Minimum Base-Metal Thickness: ***0.0329 inch (0.84 mm*** unless noted otherwise on plan.
2 Flange Width: ***1-3/8 inches (35 mm)*** unless noted otherwise on plan.

2.5 CEILING JOIST FRAMING

A Steel Ceiling Joists: Manufacturer's standard C-shaped steel sections, of web depths indicated, ***unpunched,*** with stiffened flanges, and as follows:
3 Minimum Base-Metal Thickness: ***0.0329 inch (0.84 mm)*** unless noted otherwise on plan.
4 Flange Width: ***1-5/8 inches (41 mm)*** unless noted otherwise on plan.

2.6 SOFFIT FRAMING
A Soffit Frame: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:

1 Minimum Base-Metal Thickness: ***0.0329 inch (0.84 mm)*** unless noted otherwise on plan.
2 Flange Width: ***1-5/8 inches (41 mm)*** unless noted otherwise on plan.

2.7 FRAMING ACCESSORIES

A Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

B Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
1 Supplementary framing.
2 Bracing, bridging, and solid blocking.

3 Web stiffeners.
4 Anchor clips.
5 End clips.
6 Foundation clips.
7 Gusset plates.
8 Stud kickers and knee braces.
9 Joist hangers and end closures.
10 Hole reinforcing plates.
11 Backer plates.

2.8 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.

B. Expansion Anchors per plan or approved equal: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

C. Power-Actuated Anchors per plan or approved equal: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

D. Mechanical Fasteners per plan or approved equal: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
1 Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

E. Welding Electrodes: Comply with AWS standards.

2.9 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: ***SSPC-Paint 20 or MIL-P-21035B.***

B. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

C. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and

plasticizing and water-reducing agents, complying with ASTM C 1107/C 1107M, with fluid consistency and 30-minute working time.

D. Shims: Load bearing, high-density multimonomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.

E. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.10 FABRICATION

A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.

1 Fabricate framing assemblies using jigs or templates.

2 Cut framing members by sawing or shearing; do not torch cut.

3 Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted. See plan for fasteners.

a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by no fewer than three exposed screw threads.

4 Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:

1 Spacing: Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

2 Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of- square tolerance of 1/8 inch (3 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.

B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire- resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed steel framing according to AISI S200 and to manufacturer's written instructions unless more stringent requirements are indicated.

C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.

1 Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch (1.6 mm).

D. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
1 Cut framing members by sawing or shearing; do not torch cut.
2 Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.

a Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
b Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.

E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

G. Install insulation, specified in Section 072100 "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

H. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings. See project documents for specific details.

I. Erection Tolerances: Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:
1 Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

304 FIELD QUALITY CONTROL

A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Field and shop welds will be subject to testing and inspecting.

C. Testing agency will report test results promptly and in writing to Contractor and Architect.

D. Remove and replace work where test results indicate that it does not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 06 40 00 – ARCHITECTURAL WOODWORK

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.

B Woodwork Institute, (WI), Architectural Woodwork Standards Manual (most current edition). www.woodworkinstitute.com.

1.2 SUMMARY

A Section includes:

1 Plastic-laminate cabinets.
2 Plastic-laminate countertops
3 Solid surface countertops B Related Requirements:

C Related Requirements:

1 Wood blocking for anchoring casework.
2 Section 09111 "Non-Load-Bearing Steel Framing" for reinforcements in metal-framed partitions for anchoring casework.
3 Section 09653 "Resilient Wall Base and Accessories" for resilient base applied to plastic- laminate-faced casework.

1.3 DEFINITIONS

A Definitions in the WI's "Architectural Woodwork Standards" apply to the work of this Section. B

MDF: Medium-density fiberboard.

C Hardwood Plywood: A panel product composed of layers or plies of veneer, or of veneers in combination with lumber core, hardboard core, MDF core, or particleboard core, joined with adhesive, and faced both front and back with hardwood veneers.

1.4 PREINSTALLATION MEETINGS

A Preinstallation Conference: Conduct conference at Project site.

B Keying Conference: Conduct conference at Project site. Incorporate keying conference decisions into final keying requirements.

1.5 COORDINATION

A Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that casework can be supported and installed as indicated.

1.6 ACTION SUBMITTALS

A Product Data: For each type of product.

B Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show fabrication details, including types and locations of hardware. Show installation details, including field joints and filler panels. Indicate manufacturer's catalog numbers for casework.

1 Shop drawings shall comply with Woodwork Institute requirements.

C Keying Schedule: Include schematic keying diagram and index each key set to unique designations that are coordinated with the Contract Documents.

D Samples: For cabinet finishes.

E Samples for Initial Selection: For cabinet finishes.

F Samples for Verification: 8-by-10-inch (200-by-250-mm) Samples for each type of finish and the following:

1 One full-size finished base cabinet complete with hardware, doors, and drawers.
2 One full-size finished wall cabinet complete with hardware, doors, and adjustable shelves.
3 Maintain full-size Samples at Project site during construction in an undisturbed condition as a standard for judging the completed Work. Unless otherwise indicated, approved sample units may become part of the completed Work if in undisturbed condition at time of Substantial Completion. Notify Architect of their exact locations.

1.7 INFORMATIONAL SUBMITTALS

A Qualification Data: For Installer.

B Quality Standard Compliance Certificates: WI Quality Certification Program certificates. C

Sample Warranty: For special warranty.

1.8 QUALITY ASSURANCE

A Quality Assurance: Woodwork Institute (WI) Architectural Woodwork Standards & Quality Assurance Program.
1 All millwork and the installation thereof for this project shall be certified for compliance to the contract documents by a Woodwork Institute Director of Architectural Services.
2 Review and certification of Shop drawings prior to issuance to Architect
3 Issuance of WI Certified Compliance Certificate by WI
4 Certified Compliance stamp on cover of shop drawings by WI
5 Inspection of fabrication of millwork by WI personnel at casework/millwork shop

6 Inspection of installation of casework/millwork by WI personnel at project site.
7 Comply with inspection reports as supplied by WI personnel.
8 Millwork and/or installation found to be non-compliant (and not corrected) will be rejected.

9 All fees charged by the Woodwork Institute for their quality assurance compliance program are the responsibility of the millwork manufacturer and/or installer and shall be included in their Contract proposal.

B Manufacturer Qualifications:
1 Submit WI compliance certificate. Provide original and one (1) copy to be submitted to the Architect.
2 Firm (woodwork manufacturer) with not less than 5 years of production experience similar to this Project, whose qualifications indicate the ability to comply with the requirements of this section.
3 The woodwork manufacturer must have at least one project in the past five (5) years where the value of the woodwork is within twenty percent (20%) of the cost of woodwork for this Project.
4 A manufacturer that is certified for chain of custody by an FSC-accredited certification body.

C Installer Qualifications:

1 Submit WI compliance certificate. Provide original and one (1) copy to be submitted to the Architect.
2 Arrange for installation of finish carpentry by a firm that can demonstrate successful experience in installing finish cabinetry item similar in type and quality to those required for this Project.
3 An authorized representative who is trained and approved by manufacturer for installation of units required for this Project and who is a certified participant in WI's Quality Certification Program.

1.9 DELIVERY, STORAGE, AND HANDLING

A Deliver casework only after painting, utility roughing-in, and similar operations that could damage, soil, or deteriorate casework have been completed in installation areas. If casework must be stored in other than installation areas, store only in areas where environmental conditions meet requirements specified in "Project Conditions" Article.

B Keep finished surfaces covered with polyethylene film or other protective covering during handling and installation.

1.10 FIELD CONDITIONS

A Environmental Limitations: Do not deliver or install casework until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period. Maintain temperature and relative humidity during the remainder of the construction period in range recommended for Project location by WI's "Architectural Woodwork Standards."

B Established Dimensions: Where casework is indicated to fit to other construction, establish dimensions for areas where woodwork is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

C Locate concealed framing, blocking, and reinforcements that support casework by field measurements before being enclosed, and indicate measurements on Shop Drawings.

1.11 WARRANTY

1 Special Warranty: Manufacturer agrees to repair or replace components of casework that fail in materials or workmanship within specified warranty period.

1 Failures include, but are not limited to, the following:

1 Delamination of components or other failures of glue bond.
2 Warping of components.
3 Failure of operating hardware.

2 Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A Provide materials that comply with requirements of the WI quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

B Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1 Formica
2 Nevamar
3 Or approved equal

C Basis of Design: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1 PL-3 Plastic Laminate, Formica, Matte Finish, Blackend Legno
2 PL-4 Plastic Laminate, Nevamar, Armored Protection, Crema WZ0049T
3 SS-3 Solid Surface, Formica, Classics, Luna Concrete 781

D Source Limitations: Obtain plastic-laminate-faced cabinets from single manufacturer of each color option.

E Adhesive for Bonding Plastic Laminate: Unpigmented contact cement. F Adhesive for Bonding

Plastic Laminate: PVA.

2.2 CASEWORK, GENERAL

A Quality Standard: Comply with the WI's "Architectural Woodwork Standards" for grades of casework indicated for construction, finishes, installation, and other requirements.

1 Grade: Premium.
2 Provide labels and certificates from WI certification program indicating that casework, including installation, complies with requirements of grades specified.

B Product Designations: Drawings indicate sizes, configurations, and finish materials of manufactured plastic-laminate-faced cabinets by referencing designated manufacturer's catalog numbers. Other manufacturers' casework of similar sizes and door and drawer configurations, of same finish materials, and complying with the Specifications may be considered. See Section 01600 "Product Requirements."

C Product Designations: Drawings indicate configurations of manufactured plastic-laminate-faced cabinets by referencing designations of Casework Design Series numbering system in Appendix A of the WI's "Architectural Woodwork Standards."

2.3 CASEWORK

A Design:
1 Flush overlay.

B Grain Direction for Wood Grain Plastic Laminate:

1 Horizontal on both doors and drawer fronts.
2 Horizontal on doors, horizontal on drawer fronts.
3 Horizontal on face frame members.
4 Horizontal on end panels.
5 Horizontal on bottoms and tops of units.
6 Horizontal on knee-space panels.
7 Horizontal on aprons.

C Exposed Materials:

1 Plastic Laminate: Grade HGS.

a Colors and Patterns: As selected by Architect from manufacturer's full range.

2 Unless otherwise indicated, provide specified edgebanding on all exposed edges. D

Semiexposed Materials:

1 Plastic Laminate: Grade VGS unless otherwise indicated. Provide plastic laminate for semiexposed surfaces unless otherwise indicated.

1 Provide plastic laminate of same grade as exposed surfaces for interior faces of doors and drawer fronts and other locations where opposite side of component is exposed.

2 Thermoset Decorative Panels: Provide thermoset decorative panels for semiexposed surfaces unless otherwise indicated.

1 Provide plastic laminate of same grade as exposed surfaces for interior faces of doors and drawer fronts and other locations where opposite side of component is exposed.

3 Hardboard: Use only for cabinet backs where exterior side of back is not exposed.

4 Metal for Steel Drawer Pans: Cold-rolled, carbon-steel sheet complying with ASTM A 1008/A 1008M; matte finish; suitable for exposed applications.
5 Unless otherwise indicated, provide specified edgebanding on all semiexposed edges. E

Concealed Materials:

1 Solid Wood: Any hardwood or softwood species, with no defects affecting strength or utility.
2 Plywood: Hardwood plywood.
3 Plastic Laminate: Grade BKL.
4 Particleboard.
5 MDF.
6 Hardboard.

F MATERIALS

1 Low-Emitting Materials: Fabricate casework, including countertops, with adhesives and composite wood products containing no urea formaldehyde.

2 Low-Emitting Materials: Adhesives and composite wood products shall comply with the testing and product requirements of the California Department of Health Services'

"Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

3 Maximum Moisture Content for Lumber: 7 percent for hardwood and 12 percent for softwood.

4 Hardwood Plywood: HPVA HP-1, particleboard core except where veneer core is indicated.; made without urea formaldehyde.; that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

5 Softwood Plywood: DOC PS 1.

6 Particleboard: ANSI A208.1, Grade M-2.; made with binder containing no urea formaldehyde.; that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

7 Particleboard: Straw-based particleboard complying with ANSI A208.1, Grade M-2, except for density.

8 MDF: ANSI A208.2, Grade 130.; made with binder containing no urea formaldehyde.; that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

9 Hardboard: ANSI A135.4, Class 1 Tempered.

10 Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3.

1 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a ABET Inc.
b Arborite; a division of ITW Canada. c Formica Corporation.
d Lamin-Art, Inc.
e Nevamar
f Pionite
g Panolam Industries International Inc. h Wilsonart International.

11 Edgebanding for Plastic Laminate: Plastic laminate matching adjacent surfaces.

E. COLORS AND FINISHES

1 Plastic-Laminate Colors, Patterns, and Finishes: As selected by Architect from casework manufacturer's full range.

2 PVC Edgebanding Color: As selected from casework manufacturer's full range.

F. FABRICATION

1 Plastic-Laminate-Faced Cabinet Construction: As required by referenced quality standard, but not less than the following:

a Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4- inch (19-mm) particleboard.

b Shelves: 3/4-inch- (19-mm-) thick particleboard.

c Backs of Cabinets: 1/2-inch- (12.7-mm-) thick particleboard or MDF where exposed, 1/4-inch (6.4-mm) veneer-core hardwood plywood dadoed into sides, bottoms, and tops where not exposed.

d Drawer Fronts: 3/4-inch (19-mm) particleboard.

e Drawer Sides and Backs: 1/2-inch (12.7-mm) particleboard or MDF, with glued dovetail or multiple-dowel joints.

f Drawer Bottoms: 1/4-inch (6.4-mm) particleboard or MDF glued and dadoed into front, back, and sides of drawers. Use 1/2-inch (12.7-mm) material for drawers more than 24 inches (600 mm) wide.

g Drawer Bodies: Steel drawer pans formed from 0.0359-inch- (0.9-mm-) thick metal, metallic phosphate treated, and finished with manufacturer's standard two-coat,

baked-enamel finish consisting of prime coat and thermosetting topcoat with a minimum dry film thickness of 1 mil (0.025 mm) for topcoat and 2 mils (0.05 mm) for system.

h Doors 48 Inches (1200 mm) High or Less: 3/4 inch (19 mm) thick, with particleboard or MDF cores.

i Doors More Than 48 Inches (1200 mm) High: 1-1/16 inches (27 mm) thick, with honeycomb cores and solid hardwood stiles and rails.

j Doors More Than 48 Inches (1200 mm) High: 1-1/8 inches (29 mm) thick, with particleboard cores.

k Filler Strips: Provide as needed to close spaces between cabinets and walls, ceilings, and indicated equipment. Fabricate from same material and with same finish as cabinets.

G. CASEWORK HARDWARE AND ACCESSORIES

1 Hardware, General: Unless otherwise indicated, provide manufacturer's standard satin- finish , commercial-quality, heavy-duty hardware.

a Use threaded metal or plastic inserts with machine screws for fastening to particleboard except where hardware is through-bolted from back side.

2 Hinges: Salice C2R9A99, Zinc, semiconcealed, 120° full overlay self-closing European hinge with dowel. Salice BAVGL0F9/16 base plate. Provide two hinges for doors less than 48 inches (1220 mm) high, and provide three hinges for doors more than 48 inches (1220 mm) high.

3 Pulls: Solid stainless-steel wire pulls, fastened from back with two screws. Provide two pulls for drawers more than 24 inches (600 mm) wide.

4 Door Catches: Zinc-plated,. Provide two catches on doors more than 48 inches (1220 mm) high.

5 Drawer Slides: Accuride.

a Standard Duty: Accuride 3832A full extension drawer slide with face frame bracketry.

b Heavy Duty: Accuride 4034 full extension drawer slide with face frame bracketry.

c Box Drawer Slides: Accuride 3832A full extension drawer slide with face frame bracketry.

d Trash Bin Slides: Accuride 3832A full extension drawer slide with face frame bracketry.

6 Drawer and Hinged Door Locks: Cylindrical (cam) type, five-pin tumbler, brass with chrome-plated finish, and complying with BHMA A156.11, Grade 1.

a Provide a minimum of two keys per lock and six master keys. b Provide locks on all doors and drawers.

8 Sliding-Door Hardware Sets: Manufacturer's standard, to suit type and size of sliding- door units.

9 Adjustable Shelf Standards: Mortise-type, zinc-plated steel standards and shelf rests complying with BHMA A156.9, Types B04071 and B04091.

10 Door Bumpers: Felt type in accordance with Woodwork Institute standards. Color: black

H. PLASTIC-LAMINATE COUNTERTOPS

1 Quality Standard: Comply with WI Section 16.
2 High-Pressure Decorative Laminate Grade: HGS.

2 Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

a Match color, pattern, and finish as indicated by manufacturer's designations for these characteristics.
b Match Architect's sample.

c Provide Architect's selections from manufacturer's full range of colors and finishes in the following categories:
a. Solid colors.
b. Solid colors with core same color as surface.
c. Wood grains.
d. Patterns.

3 Grain Direction: Parallel to cabinet fronts.

4 Edge Treatment: Same as laminate cladding on horizontal surfaces .

5 Core Material: Particleboard or medium-density fiberboard .

6 Core Material at Sinks: Particleboard made with exterior glue, medium-density fiberboard made with exterior glue, or exterior-grade plywood.

1 I SOLID SURFACE COUNTERTOPS

1 Quality Standard: Comply with WI Section 16.
2 Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed surfaces complying with the following requirements:

a Match color, pattern, and finish as indicated by manufacturer's designations for these characteristics.
b Match Architect's sample.
c Provide Architect's selections from manufacturer's full range of colors and finishes in the following categories:
a. Solid colors.
b. Solid colors with core same color as surface.
c. Wood grains.

d. Patterns.

3 Grain Direction: Parallel to cabinet fronts.

4 Edge Treatment: Same as countertop surfaces.
5 Core Material: Particleboard or medium-density fiberboard

6 Core Material at Sinks: Particleboard made with exterior glue, medium-density fiberboard made with exterior glue, or exterior-grade plywood.

PART 3 - EXECUTION

3.1 PREPARATION

A Condition woodwork to average prevailing humidity conditions in installation areas before installation.

B Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

A Quality Standard: Install woodwork to comply with WIC Section 26 for the same grade specified in Part 2 of this Section for type of woodwork involved.

B Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.

C Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.
D Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with recommendations of chemical treatment manufacturer, including those for adhesives used to install woodwork.

E Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

F Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
1 Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
2 Maintain veneer sequence matching of cabinets with transparent finish.
3 Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.
G Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
1 Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
2 Secure backsplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.
3 Calk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

3.3 ADJUSTING AND CLEANING

A Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B Clean, lubricate, and adjust hardware.

C Clean woodwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION

SECTION 07 21 00 - BUILDING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A This Section includes the following:
1. Interior cavity wall insulation.

B Related Sections include the following:
1. Division 9 Sections "Gypsum Board Assemblies" for installation in metal-framed assemblies of insulation specified by reference to this Section.

1.3 SUBMITTALS

A Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

A Source Limitations: Obtain each type of building insulation through one source.

B Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
1. Surface-Burning Characteristics: ASTM E 84.

1.5 DELIVERY, STORAGE, AND HANDLING

A Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Glass-Fiber Insulation:
a) CertainTeed Corporation.
b) Johns Manville Corporation.
c) Owens Corning.

2.2 INSULATING MATERIALS

A Basis of Design Product: Products are based on the named manufacturer or an approved comparable product and manufacturer.

1. Interior cavity wall insulation: Owens Corning, Sound Attentuation Batt Insulation, unfaced.(R-13)

2.3 INSULATION FASTENERS

A Products: Subject to compliance with requirements, provide one of the following:
1. Adhesively Attached, Spindle-Type Anchors:
a) AGM Industries, Inc.; Series T TACTOO Insul-Hangers.
b) Gemco; Spindle Type.
2. Anchor Adhesives: -
a) AGM Industries, Inc.; TACTOO Adhesive.
b) Gemco; Tuff Bond Hanger Adhesive.

B Insulation-Retaining Washers: Install at bottom of roof decking, self-locking washers formed from 0.016-inch- (0.41-mm-) thick galvanized steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches (38 mm) square or in diameter.

C Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates indicated without damaging insulation, fasteners, and substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine substrates and conditions, with Installer present, for compliance with requirements for Sections in which substrates and related work are specified and other conditions affecting performance.

B Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.3 INSTALLATION, GENERAL

A Comply with insulation manufacturer's written instructions applicable to products and application indicated.

B Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice and snow.

C Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D Water-Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

E Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

A Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

C Install insulation on roof decking substrates by adhesively attached, spindle-type insulation anchors as follows:
1. Fasten insulation anchors to substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.
2. After adhesive has dried, install insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation below indicated thickness.

3.5 PROTECTION

A Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A This Section includes joint sealants for the applications indicated in the Joint-Sealant Schedule at the end of Part 3.

B Related Sections include the following:
1. Division 8 Section "Glazing" for glazing sealants.

2. Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.
3. Division 9 Section "Ceramic Tile" for sealing tile joints.

1.3 PERFORMANCE REQUIREMENTS

A Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

A Product Data: For each joint-sealant product indicated. B Qualification Data: For Installer.

1.5 QUALITY ASSURANCE

A Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.

B Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

C Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

A Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint- sealant manufacturer.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

A Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.

B Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Ten years from date of Substantial Completion.

C Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A Basis of Design Product: The design is based upon Dow Corning products or comparable manufacturer and product.

2.2 MATERIALS, GENERAL

A Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

2.3 ELASTOMERIC JOINT SEALANTS

A Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

2.4 ACOUSTICAL JOINT SEALANTS

A Acoustical Sealant for Concealed Joints: Manufacturer's standard, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce airborne sound transmission.

1. Products:
   a) Pecora Corporation; BA-98.
   b) Tremco; Tremco Acoustical Sealant.

2.5 JOINT-SEALANT BACKING

A General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B Cylindrical Sealant Backings: ASTM C 1330, Type B (bicellular material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

2.6 MISCELLANEOUS MATERIALS

A Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint

substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint- sealant performance.

B Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

a) Concrete.
b) Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

a) Metal.

b) Glass.
c) Prefinished architectural panels,

B Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 CLEANING

A Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

A Joint-Sealant Application JS-#1: Exterior horizontal nontraffic construction joints in cast-in-place concrete.

1. Joint Sealant: Dow Corning, #756
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

B Joint-Sealant Application JS-#6: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.

1. Joint Sealant: Latex sealant.

2. Joint-Sealant Color: White.

C Joint-Sealant Application JS-#7: Perimeter joints between interior wall surfaces and frames of interior doors windows and elevator entrances.
1. Joint Sealant: Dow Corning, #786.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range .

END OF SECTION

SECTION 08 12 50 - INTERIOR ALUMINUM FRAMES

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 interior aluminum frames for doors installed in gypsum board partitions. B

Related Sections:

1 Section 08211 "Flush Wood Doors" for wood doors installed in interior aluminum frames.
2 Section 08411 "Aluminum-Framed Entrances and Storefronts" for aluminum-framed glass doors installed in interior aluminum frames.

1.3 ACTION SUBMITTALS

A Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, fire-resistance rating, and finishes.

B Shop Drawings: Include the following:

1 Frame details for each frame type, including dimensioned profiles and metal thicknesses.
2 Locations of reinforcements and preparations for hardware.
3 Details of each different wall-opening condition.
4 Details of anchorages, joints, field splices, and connections.
5 Details of accessories.
6 Details of moldings, removable stops, and glazing.
7 Details of conduits and preparations for power, signal, and control systems. C Samples for Initial

Selection: For units with factory-applied finishes.

1 Include similar Samples of seals, gaskets, and accessories involving color selection.

D Samples for Verification: For interior aluminum frames, prepared on Samples of size indicated below:

1 Framing Member: 12 inches (300 mm) long.
2 Corner Fabrication: 12-by-12-inch- (300-by-300-mm-) long, full-size window corner, including full-size sections of extrusions with factory-applied color finish.

D Schedule: For interior aluminum frames. Use same designations indicated on Drawings.

Coordinate with door hardware schedule and glazing.

1.4 INFORMATIONAL SUBMITTALS

A Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of interior aluminum frame.

1.5 CLOSEOUT SUBMITTALS

A Maintenance Data: For interior aluminum frames to include in maintenance manuals.

F. QUALITY ASSURANCE

A Source Limitations: Obtain interior aluminum frames from single source from single manufacturer.

B Fire-Rated Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

C Smoke- and Draft-Control Assemblies: Where indicated At corridors, smoke barriers, and smoke partitions, provide assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1 Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa) of water.

D Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1 Build mockup of typical wall area as shown on Drawings.
2 Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E Preinstallation Conference: Conduct conference at Project site.

1.6 DELIVERY, STORAGE, AND HANDLING

A Deliver interior aluminum frames palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic. Store interior aluminum frames under cover at Project site.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1 Advanced Architectural Frames.
2 Custom Components Company.
3 Dual Lock Partition Systems, Inc.; Avalon International Aluminum.
4 Frameworks Manufacturing.

5 Interior Components Inc.
6 Modulex, Inc; Division of Pacific National Group.
7 RACO Interior Products, Inc.
8 Versatrac.
9 Western Integrated Materials, Inc.
10 Wilson Partitions.

2.2 COMPONENTS

A Aluminum Framing: ASTM B 221 (ASTM B 221M), Alloy 6063-T5 or alloy and temper required to suit structural and finish requirements, not less than 0.062 inch (1.6 mm) thick.

B Door Frames: Extruded aluminum, reinforced for hinges, strikes, and closers.

1 90-Minute Fire-Protection Rating: Fabricate aluminum frame assemblies with a cold- formed, primed, interior steel liner.

C Glazing Frames: Extruded aluminum, for glazing thickness indicated. D Ceiling Tracks: Extruded

aluminum.

E Trim: Extruded aluminum, not less than 0.062 inch (1.6 mm) thick, with removable snap-in casing trim glazing stops and door stops without exposed fasteners.

2.3 ACCESSORIES

A Fasteners: Aluminum, nonmagnetic, stainless-steel or other noncorrosive metal fasteners compatible with frames, stops, panels, reinforcement plates, hardware, anchors, and other items being fastened.

B Door Silencers: Manufacturer's standard continuous mohair, wool pile, or vinyl seals, Gray. C

Smoke Seals: Intumescent strip or fire-rated gaskets, Gray.

D Glazing Gaskets: Manufacturer's standard extruded or molded plastic, to accommodate glazing thickness indicated, Gray.

E Glazing: Comply with requirements in Section 08800 "Glazing."

F Hardware: Comply with requirements in Section 08710 "Door Hardware".

2.4 FABRICATION

A Provide concealed corner reinforcements and alignment clips for accurately fitted hairline joints at butted or mitered connections.

B Factory prepare interior aluminum frames to receive templated mortised hardware; include cutouts, reinforcements, mortising, drilling, and tapping, according to the Door Hardware Schedule and templates furnished as specified in Section 08710 "Door Hardware."

1 Locate hardware as required by fire-rated label for assembly.

C Fabricate frames for glazing with removable stops to allow glazing replacement without dismantling frame.

1 Locate removable stops on the inside of spaces accessed by keyed doors. D Fabricate components to allow secure installation without exposed fasteners.

2.5 GENERAL FINISH REQUIREMENTS

A Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 ALUMINUM FINISHES

A Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine walls, floors, and ceilings, with Installer present, for conditions affecting performance of the Work.

B Verify that wall thickness does not exceed standard tolerances allowed by throat size indicated. C Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A General: Install interior aluminum frames plumb, rigid, properly aligned, and securely fastened in place; comply with manufacturer's written instructions.

B Set frames accurately in position and plumbed, aligned, and securely anchored to substrates.

1 At fire-protection-rated openings, install interior aluminum frames according to NFPA 80.

C Install frame components in the longest possible lengths; components up to 96 inches (2450 mm) long must be one piece.

1 Fasten to suspended ceiling grid on maximum 48-inch (1220-mm) centers, using sheet metal screws or other fasteners approved by frame manufacturer.
2 Use concealed installation clips to produce tightly fitted and aligned splices and connections.
3 Secure clips to extruded main-frame components and not to snap-in or trim members.
4 Do not leave screws or other fasteners exposed to view when installation is complete.

3.3 CLEANING

A Clean exposed frame surfaces promptly after installation, using cleaning methods recommended by frame manufacturer and according to AAMA 609 & 610.

B Touch up marred frame surfaces so touchup is not visible from a distance of 48 inches (1220 mm). Remove and replace frames with damaged finish that cannot be satisfactorily repaired.

END OF SECTION

SECTION 08 21 10 - FLUSH WOOD DOORS

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.

B Woodwork Institute, (WI), Architectural Woodwork Standards Manual (most current edition). www.woodworkinstitute.com.

1.2 SUMMARY

A Section Includes:

1 Solid-core doors with Plastic Laminate veneer faces.
2 Factory finishing flush wood doors.
3 Factory fitting flush wood doors to frames and factory machining for hardware.

B Related Sections:
1. Division 08 Section "Door Schedule".
2. Division 08 Section "Interior Aluminum Doors and Frames".
3. Division 08 Section "Door Hardware".

C Standards and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1 ANSI A117.1 - Accessible and Usable Buildings and Facilities.
1. ANSI A208.1 – Wood Particleboard.
2. Intertek Testing Service (ITS Warnock Hersey) - Certification Listings for Fire Doors.
3. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
4. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
5. UL 10C - Positive Pressure Fire Tests of Door Assemblies; UL 1784 - Standard for Air Leakage Tests of Door Assemblies.
6. Window and Door Manufacturers Association - WDMA I.S.1-A Architectural Wood Flush Doors.

1.3 PREINSTALLATION MEETINGS

A Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.

B Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Indicate location, size, and hand of each door.
2. Indicate dimensions and locations of mortises and holes for hardware.
3. Indicate dimensions and locations of cutouts.
4. Indicate requirements for veneer matching.
5. Indicate location and extent of hardware blocking.
6. Indicate construction details not covered in Product Data.
7. Indicate doors to be factory finished and finish requirements.
8. Indicate fire protection ratings for fire rated doors.

C Samples for Initial Selection: For factory-finished doors.

1 Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.

2 Corner sections of doors, approximately 8 by 10 inches (200 by 250 mm), with door faces and edges representing actual materials to be used.

a Provide Samples for each species of veneer and solid lumber required.

b Provide Samples for each color, texture, and pattern of plastic laminate required.

c Finish veneer-faced door Samples with same materials proposed for factory- finished doors.

3 Frames for light openings, 6 inches long, for each material, and finish required

4 Louver blade and frame sections, 6 inches (150 mm) long, for each material and finish specified.

5 Frames for light openings, 6 inches (150 mm) long, for each material, type, and finish required.

D Warranty: Provide sample of manufacturer's warranty.

1.5 INFORMATIONAL SUBMITTALS

A Sample Warranty: For special warranty.

B Quality Standard Compliance Certificates: WI Quality Certification Program certificates.

1.6 QUALITY ASSURANCE

A. Quality Assurance: Woodwork Institute (WI) Architectural Woodwork Standards & Quality Assurance Program.

1 All millwork and the installation thereof for this project shall be certified for compliance to the contract documents by a Woodwork Institute Director of Architectural Services.

2 Review and certification of Shop drawings prior to issuance to Architect

3 Issuance of WI Certified Compliance Certificate by WI

4 Certified Compliance stamp on cover of shop drawings by WI

5 Inspection of fabrication of millwork by WI personnel at casework/millwork shop

6 Inspection of installation of casework/millwork by WI personnel at project site.

7 Comply with inspection reports as supplied by WI personnel.

8 Millwork and/or installation found to be non-compliant (and not corrected) will be rejected.

9 All fees charged by the Woodwork Institute for their quality assurance compliance program are the responsibility of the millwork manufacturer and/or installer and shall be included in their Contract proposal.

B Manufacturer Qualifications:

5 Submit WI compliance certificate. Provide original and one (1) copy to be submitted to the Architect.

6 Firm (woodwork manufacturer) with not less than 5 years of production experience similar to this Project, whose qualifications indicate the ability to comply with the requirements of this section.

7 The woodwork manufacturer must have at least one project in the past five (5) years where the value of the woodwork is within twenty percent (20%) of the cost of woodwork for this Project.
8 A manufacturer that is certified for chain of custody by an FSC-accredited certification body.

C Installer Qualifications:

4 Submit WI compliance certificate. Provide original and one (1) copy to be submitted to the Architect.
5 Arrange for installation of finish carpentry by a firm that can demonstrate successful experience in installing finish cabinetry item similar in type and quality to those required for this Project.
6 An authorized representative who is trained and approved by manufacturer for installation of units required for this Project and who is a certified participant in WI's Quality Certification Program.

D Source Limitations: Obtain flush wood doors through one source from a single manufacturer wherever possible.

E. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, latest edition, "Industry Standard for Architectural Wood Flush Doors'.

1 Fire Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL10C.

a. Oversize Fire Rated Door Assemblies: For units exceeding sizes of tested assemblies provide manufacturer's construction label, indicating compliance to independent 3rd party certification agency's procedure, except for size.

b. Temperature Rise Limit: Where required and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire test exposure.

c. Smoke Control Door Assemblies: Comply with NFPA 105.

1 Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

2 Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier,

Installer, and Contractor to review proper methods and procedures for receiving, handling, and installing flush wood doors.

1.7 DELIVERY, STORAGE, AND HANDLING

A Comply with requirements of referenced standard and manufacturer's written instructions.

B Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting. C

Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.8 FIELD CONDITIONS

A Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

B Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 25 and 55 percent during remainder of construction period.

1.9 WARRANTY

A Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

1 Failures include, but are not limited to, the following:

a Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067- by-2134-mm) section.

b Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.

2 Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.

3 Warranty Period for Solid-Core Exterior Doors: Five years from date of Substantial Completion.

4 Warranty Period for Solid-Core Interior Doors: Life of installation.

5 Warranty Period for Hollow-Core Interior Doors: Two year(s) from date of Substantial Completion.

PART2 - PRODUCTS

2.1 MANUFACTURERS

A Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1 Algoma Hardwoods, Inc.
2 Ampco.
3 Chappell Door Co.
4 Eggers Industries.
5 General Veneer Manufacturing Co.
6 Graham Wood Doors; an Assa Abloy Group company.
7 Ipik Door Company
8 Lambton Doors
9 Marlite.
10 Marshfield Door Systems, Inc.
11 Mohawk Doors; a Masonite company.
12 Oshkosh Door Company.

B Source Limitations: Obtain flush wood doors indicated to be blueprint matched with paneling and wood paneling from single manufacturer.

2.2 FLUSH WOOD DOORS, GENERAL

A Quality Standard: In addition to requirements specified, comply with WI's "Architectural Woodwork Standards."

1 Provide WI Quality Certification Labels indicating that doors comply with requirements of grades specified.
2 Contract Documents contain selections chosen from options in quality standard and additional requirements beyond those of quality standard. Comply with those selections and requirements in addition to quality standard.

B WDMA I.S.1-A Performance Grade: As indicated. C WDMA I.S.1-A Performance Grade:

1 Heavy Duty unless otherwise indicated.
2 Extra Heavy Duty: Classrooms public toilets assembly spaces exits.
3 Standard Duty: where indicated.

D Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252.

1 Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
2 Temperature-Rise Limit: Where indicated, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.
3 Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
4 Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
5 Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
6 Pairs: Provide formed-steel edges and astragals with intumescent seals.

a Finish steel edges and astragals to match door hardware (locksets or exit devices).

E Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.

F Interior Solid Core Doors:

1. Grade: Premium.

2. Faces: Veneer grades as noted below; veneer minimum 1/50-inch (0.5mm) thickness at moisture content of 12% or less.

a. As selected by architect from manufacturer's full range, A grade faces.

3. Match between Veneer Leaves: Book match.

4. Assembly of Veneer Leaves on Door Faces: Running Match

5. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.

6. Transom Match: Continuous match.

7. Vertical Edges: Matching same species as faces. Wood or composite material, one piece, laminated, or veneered. Minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors.

8. Horizontal Edges: Solid wood or structural composite material meeting the minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors

9. Construction: Five plies. Stiles and rails are bonded to core, then entire unit sanded before applying face veneers.

10. At doors over 40% of the face cut-out for lights and or louvers, furnish engineered composite lumber core.

2.3 FABRICATION

A Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.
2 Undercut: As required per manufacturer's templates and sill condition.

B Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA- 156.115-W, and hardware templates.

1 Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
2 Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

C Openings: Factory cut and trim openings through doors.

1 Light Openings: Trim openings with moldings of material and profile indicated.
2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 08800 "Glazing."

D Electrical Raceways: Provide flush wood doors receiving electrified hardware with concealed wiring harness and standardized Molex™ plug connectors on both ends to accommodate up to twelve wires. Coordinate connectors on end of the wiring harness to plug directly into the electrified hardware and the through wire transfer hardware or wiring harness specified in hardware sets in Division 08 "Door Hardware". Wire nut connections are not acceptable.

2.4 FACTORY FINISHING

A General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1 Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.

B Factory finish doors.

C Factory finish doors that are indicated to receive transparent finish.

D Factory finish doors where indicated in schedules or on Drawings as factory finished.

E Use only paints and coatings that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.5 LIGHT FRAMES AND LOUVERS

Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.

Wood Species: Same species as door faces Profile: Manufacturer's standard shape.

Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch-(1.2-mm-)thick, cold-rolled steel sheet; [factory primed for paint][with baked-enamel- or powder-coated] finish; and approved for use in doors of fire-protection rating indicated.

Metal Louvers:
Metal and Finish: Hot-dip galvanized steel, 0.040 inch (1.0 mm) thick, factory primed for paint finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine doors and installed door frames, with Installer present, before hanging doors.

1 Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
2 Reject doors with defects.

B Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A Hardware: For installation, see Section 08710 "Door Hardware."

B Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

1 Install fire-rated doors according to NFPA 80.
2 Install smoke- and draft-control doors according to NFPA 105.

C Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire- rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1 Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors.
Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.

1 Comply with NFPA 80 for fire-rated doors.
2 2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.

2 Bevel fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock edge; trim stiles and rails only to extent permitted by labeling agency.

D Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

E Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

A Operation: Rehang or replace doors that do not swing or operate freely.

B Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.
END OF SECTION

SECTION 08 41 10 - ALUMINUM-FRAMED STOREFRONTS

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 Interior storefront framing.
2 Interior manual-swing entrance doors and door-frame units.

1.3 PREINSTALLATION MEETINGS

A Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A Product Data: For each type of product.

1 Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.

1 Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
2 Include full-size isometric details of each vertical-to-horizontal intersection of aluminum- framed entrances and storefronts, showing the following:

a Joinery, including concealed welds. b Anchorage.
c Expansion provisions. d Glazing.
e Flashing and drainage.

3 Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.

C Samples for Initial Selection: For units with factory-applied color finishes.

D Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E Fabrication Sample: Of each vertical-to-horizontal intersection of assemblies, made from 12- inch (300-mm) lengths of full-size components and showing details of the following:

1 Joinery, including concealed welds.
2 Anchorage.
3 Expansion provisions.
4 Glazing.
5 Flashing and drainage.

F Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

G Delegated-Design Submittal: For aluminum-framed entrances and storefronts indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A Preconstruction Laboratory Mockup Testing Submittals:

1 Testing Program: Developed specifically for Project.
2 Test Reports: Prepared by a qualified preconstruction testing agency for each mockup test.
3 Record Drawings: As-built drawings of preconstruction laboratory mockups showing changes made during preconstruction laboratory mockup testing.

B Energy Performance Certificates: For aluminum-framed entrances and storefronts, accessories, and components, from manufacturer.

1 Basis for Certification: NFRC-certified energy performance values for each aluminum- framed entrance and storefront.

C Product Test Reports: For aluminum-framed entrances and storefronts, for tests performed by [***a qualified testing agency***.

D Quality-Control Program: Developed specifically for Project, including fabrication and installation, according to recommendations in ASTM C 1401. Include periodic quality-control reports.

E Source quality-control reports. F Field quality-control reports.

G Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A Maintenance Data: For aluminum-framed entrances and storefronts to include in maintenance manuals.

B Maintenance Data for Structural Sealant: For structural-sealant-glazed storefront to include in maintenance manuals. Include ASTM C 1401 recommendations for post-installation-phase quality-control program.

1.7 QUALITY ASSURANCE

A Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

1 Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

C Structural-Sealant Glazing: Comply with ASTM C 1401 for design and installation of storefront systems.

1.8 MOCKUPS

A Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1 Build mockup of typical wall area as shown on Drawings.
2 Testing shall be performed on mockups according to requirements in "Field Quality Control" Article.
3 Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4 Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 WARRANTY

A Special Warranty: ***Installer*** agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1 Failures include, but are not limited to, the following:

1 Structural failures including, but not limited to, excessive deflection.
2 Noise or vibration created by wind and thermal and structural movements.
3 Deterioration of metals***, metal finishes,*** and other materials beyond normal weathering.
4 Water penetration through fixed glazing and framing areas.
5 Failure of operating components.

2 Warranty Period: Five years from date of Substantial Completion.

A Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1 Deterioration includes, but is not limited to, the following:

a Color fading more than 5 Hunter units when tested according to ASTM D 2244. b Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2 Warranty Period: ***Five*** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A Delegated Design: Engage a qualified professional engineer, as defined in Section 01400 "Quality Requirements," to design aluminum-framed entrances and storefronts.

B General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1 Aluminum-framed entrances and storefronts shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2 Failure also includes the following:

a Thermal stresses transferring to building structure. b Glass breakage.
c Noise or vibration created by wind and thermal and structural movements. d Loosening or weakening of fasteners, attachments, and other components. e Failure of operating units.

C Interstory Drift: Accommodate design displacement of adjacent stories indicated.

1 Design Displacement: As indicated on Drawings.
2 Test Performance: Complying with criteria for passing based on building occupancy type when tested according to AAMA 501.4 at design displacement

D Structural-Sealant Joints:

1 Designed to carry gravity loads of glazing.
2 Designed to produce tensile or shear stress of less than 20 psi (138 kPa).

E Structural Sealant: Capable of withstanding tensile and shear stresses imposed by structural-sealant-glazed storefront system without failing adhesively or cohesively. When tested for preconstruction adhesion and compatibility, cohesive failure of sealant shall occur before adhesive failure.

1 Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
2 Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.

2.2 MANUFACTURERS

A Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1 Arcadia, Inc.
2 Arch Aluminum & Glass Co., Inc.
3 CMI Architectural.
4 Commercial Architectural Products, Inc.
5 EFCO Corporation.
6 Kawneer North America.
7 Leed Himmel Industries, Inc.
8 Oldcastle BuildingEnvelope.
9 Pittco Architectural Metals, Inc.
10 TRACO.
11 Tubelite.
12 United States Aluminum.
13 YKK AP America Inc.

C Source Limitations: Obtain all components of aluminum-framed entrance and storefront system, including framing and accessories, from single manufacturer.

2.3 FRAMING

A Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1 Construction: Nonthermal.
2 Glazing System: Retained mechanically with gaskets on four sides.
3 Glazing Plane: Front.
4 Finish: Clear anodic finish.
5 Fabrication Method: Field-fabricated stick system.

B Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

C Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

D Materials:

1 Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1 Sheet and Plate: ASTM B 209 (ASTM B 209M).
2 Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
3 Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.
4 Structural Profiles: ASTM B 308/B 308M.

2 Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation

and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard.

1 Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
2 Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
3 Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.4 GLAZING

A Glazing: Comply with Section 08800 "Glazing."

B Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers. Comply with Section 08800 "Glazing."

C Glazing Sealants: As recommended by manufacturer. Comply with Section 08800 "Glazing."

2.5 FABRICATION

A Form or extrude aluminum shapes before finishing.

B Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C Fabricate components that, when assembled, have the following characteristics:

1 Profiles that are sharp, straight, and free of defects or deformations.
2 Accurately fitted joints with ends coped or mitered.
3 Physical and thermal isolation of glazing from framing members.
4 Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5 Provisions for field replacement of glazing from interior.
6 Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

E Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.

F Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.

1 At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on strike jamb of single-door frames and two silencers on head of frames for pairs of doors.

G Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

H After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.6 ALUMINUM FINISHES

A Match existing.

2.7 SOURCE QUALITY CONTROL

A Structural Sealant: Perform quality-control procedures complying with ASTM C 1401 recommendations including, but not limited to, assembly material qualification procedures, sealant testing, and assembly fabrication reviews and checks.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A Prepare surfaces that are in contact with structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.

3.3 INSTALLATION

A General:

1 Comply with manufacturer's written instructions.
2 Do not install damaged components.
3 Fit joints to produce hairline joints free of burrs and distortion.
4 Rigidly secure nonmovement joints.
5 Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6 Seal perimeter and other joints watertight unless otherwise indicated. B Metal Protection:

1 Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
2 Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C Set continuous sill members and flashing in full sealant bed as specified in Section 07920 "Joint Sealants" to produce weathertight installation.

D Install components plumb and true in alignment with established lines and grades.

E Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

F Install glazing as specified in Section 08800 "Glazing."

G Install weatherseal sealant according to Section 07920 "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.

H Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

1 Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

3.4 ERECTION TOLERANCES

A Erection Tolerances: Install aluminum-framed entrances and storefronts to comply with the following maximum tolerances:

1 Plumb: 1/8 inch in 10 feet (3.2 mm in 3 m); 1/4 inch in 40 feet (6.35 mm in 12.2 m).
2 Level: 1/8 inch in 20 feet (3.2 mm in 6 m); 1/4 inch in 40 feet (6.35 mm in 12.2 m).
3 Alignment:

a Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch (12.7 mm) wide, limit offset from true alignment to 1/16 inch (1.6 mm).
b Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch
(12.7 to 25.4 mm) wide, limit offset from true alignment to 1/8 inch (3.2 mm).
c Where surfaces are separated by reveal or protruding element of 1 inch (25.4 mm) wide or more, limit offset from true alignment to 1/4 inch (6 mm).

4 Location: Limit variation from plane to 1/8 inch in 12 feet (3.2 mm in 3.6 m); 1/2 inch (12.7 mm) over total length.

3.5 MAINTENANCE SERVICE

A Entrance Door Hardware:

1 Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware.
2 Initial Maintenance Service: Beginning at Substantial Completion, provide [***six***] ***<Insert number>*** months' full maintenance by skilled employees of entrance door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper entrance door hardware operation at rated speed and capacity. Use parts and supplies that are the same as those used in the manufacture and installation of original equipment.

END OF SECTION

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

a. This Section includes commercial door hardware for the following:

1 Swinging doors.

b. Door hardware includes, but is not necessarily limited to, the following:

1 Mechanical door hardware.
2 Electromechanical door hardware.

c. Related Sections:

1 Division 08 Section "Door Hardware Schedule".
2 Division 08 Section "Hollow Metal Doors and Frames".
3 Division 08 Section "Interior Aluminum Doors and Frames".
4 Division 08 Section "Flush Wood Doors".
5 Division 08 Section "Access Control Hardware".

d. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1 ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2 ICC/IBC - International Building Code.
3 NFPA 70 - National Electrical Code.
4 NFPA 80 - Fire Doors and Windows.
5 NFPA 101 - Life Safety Code.
6 NFPA 105 - Installation of Smoke Door Assemblies.
7 State Building Codes, Local Amendments.

e. Standards: All hardware specified herein shall comply with the following industry standards:

1 ANSI/BHMA Certified Product Standards - A156 Series
2 UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

a. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

b. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1 Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2 Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3 Content: Include the following information:

a. Type, style, function, size, label, hand, and finish of each door hardware item.
b. Manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
e. Explanation of abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for door hardware.
g. Door and frame sizes and materials.
h. Warranty information for each product.

4 Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in

the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

c. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

d. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

a. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

b. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

c. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

d. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1 Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

e. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1 Function of building, purpose of each area and degree of security required.
2 Plans for existing and future key system expansion.
3 Requirements for key control storage and software.
4 Installation of permanent keys, cylinder cores and software.
5 Address and requirements for delivery of keys.

f. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1 Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for

aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2 Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.

3 Review sequence of operation narratives for each unique access controlled opening.

4 Review and finalize construction schedule and verify availability of materials.

5 Review the required inspecting, testing, commissioning, and demonstration procedures

g. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

h. The contractor shall coordinate and provide a completely functional installation of door hardware to provide ingress and egress to the building and associated tenant/lease spaces of the Project.

1.5 DELIVERY, STORAGE, AND HANDLING

a. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

b. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

c. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

a. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

b. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

c. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

a. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

b. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1 Structural failures including excessive deflection, cracking, or breakage.

2 Faulty operation of the hardware.
3 Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4 Electrical component defects and failures within the systems operation.

c. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

d. Special Warranty Periods:

1 Ten years for mortise locks and latches.

2 Twenty five years for manual surface door closer bodies.
3 Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

a. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

a. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

b. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

c. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

d. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

a. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.

1 Quantity: Provide the following hinge quantity, unless otherwise indicated:

a. Two Hinges: For doors with heights up to 59 inches.
b. Three Hinges: For doors with heights 60 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2 Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3 Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4 Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:

a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5 Acceptable Manufacturers:

a. Bommer Industries (BO).
b. Hager Companies (HA).
c. McKinney Products (MK).
d. Stanley Hardware (ST).

2.3 CYLINDERS AND KEYING

a. General: Cylinder manufacturer to have minimum (10) years' experience designing secured master key systems and have on record a published security keying system policy.

b. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

c. Cylinders: Original manufacturer cylinders complying with the following:

1 Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2 Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3 Bored-Lock Type: Cylinders with tailpieces to suit locks.
4 Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5 Keyway: Match Facility Restricted Keyway.

d. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

1 Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders and door hardware. Provide removable core (small or large format) as specified in Hardware Sets.

e. Patented Cylinders: ANSI/BHMA A156.5, Grade 1, certified patented cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.

1 Acceptable Manufacturers:

a. Schlage Lock (SC) - Everest D Series.

b. No Substitution.

f. Keying System: Each type of lock and cylinders to be factory keyed.

1 Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
2 Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3 Existing System: Key locks to Owner's existing system.

g. Key Quantity: Provide the following minimum number of keys:

1 Change Keys per Cylinder: Two (2)
2 Master Keys (per Master Key Level/Group): Five (5).
3 Construction Keys (where required): Ten (10).

h. Construction Keying: Provide construction master keyed cylinders.

i. Key Registration List (Bitting List):

1 Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2 Provide transcript list in writing or electronic file as directed by the Owner.

2.4 MECHANICAL LOCKS AND LATCHING DEVICES

a. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1 Acceptable Manufacturers:

a. Corbin Russwin Hardware (RU) – ML2000 Series.
b. Sargent Manufacturing (SA) – 8200 Series.
c. Stanley Best (BE) – 40H Series.

2.5 ELECTROMECHANICAL LOCKING DEVICES

a. Electromechanical Mortise Locksets, Grade 1 (Heavy Duty): Subject to same compliance standards and requirements as mechanical mortise locksets, electrified locksets to be of type and design as specified below.

1 Electrified Lock Options: Where indicated in the Hardware Sets, provide electrified options including: outside door lock/unlock trim control, latchbolt and lock/unlock status monitoring, deadbolt monitoring, and request-to-exit signaling. Support end-of-line resistors contained within the lock case. Unless otherwise indicated, provide electrified locksets standard as fail secure.

2 Acceptable Manufacturers:

a. Stanley Best (BE) - 40HW EL/EU Series.

b. No Substitution.

2.6 LOCK AND LATCH STRIKES

a. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1 Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2 Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3 Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4 Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

b. Standards: Comply with the following:

1 Strikes for Mortise Locks and Latches: BHMA A156.13.
2 Strikes for Bored Locks and Latches: BHMA A156.2.
3 Strikes for Auxiliary Deadlocks: BHMA A156.5.
4 Dustproof Strikes: BHMA A156.16.

2.7 ELECTRIC STRIKES

a. Standard Electric Strikes: Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire rated door assemblies. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft-lbs. of dynamic strength. Strikes tested for a minimum 1 million operating cycles. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1 Acceptable Manufacturers:

a. HES (HS).

2.8 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.

b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

6. Vertical Rod Exit Devices: Provide and install interior surface and concealed vertical rod exit devices as Less Bottom Rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.

8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

9. Rail Sizing: Provide exit device rails factory sized for proper door width application.

10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

Acceptable Manufacturers:

1. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
2. Sargent Manufacturing (SA) - 80 Series.
3. Stanley Precision (PR) - Apex 2000 Series.

2.9 DOOR CLOSERS

a. All door closers specified herein shall meet or exceed the following criteria:

1 General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2 Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3 Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4 Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5 Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6 Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7 Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.

b. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

Acceptable Manufacturers:

a. Corbin Russwin Hardware (RU) – DC6000 Series.
b. Sargent Manufacturing (SA) - 351 Series.
c. Norton Door Controls (NO) - 7500 Series.

2.10 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
1. Acceptable Manufacturers:
a. Rockwood Manufacturing (RO).

2.11 ARCHITECTURAL SEALS

a. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

b. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1 Provide smoke labeled perimeter gasketing at all smoke labeled openings.

c. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

a. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

b. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

c. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

d. Acceptable Manufacturers:

a. National Guard Products (NG).
b. Pemko Manufacturing (PE).
c. Reese Enterprises, Inc. (RE).

2.12 FABRICATION

a. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.13 FINISHES

a. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

b. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

c. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

a. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

b. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

a. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

b. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

a. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1 Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

b. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1 Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2 Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3 Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4 Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

c. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

d. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

e. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

a. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

a. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

b. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

c. Clean adjacent surfaces soiled by door hardware installation.

d. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

a. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SCHEDULE

a. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

b. Refer to construction drawings for Door Hardware Schedule, for hardware sets.

END OF SECTION

SECTION 08 80 00 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
1. Doors.

1.3 DEFINITIONS

1.4 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.5 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Samples: For the following products, in the form of 12-inch- (300-mm-) square Samples for glass.
1. Each color of tinted float glass.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association Glazier Certification Program as Level 2 (Senior Glaziers) or Level 3 (Master Glaziers).

B. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.

C. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.

D. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.
1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

E. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: GANA'S "Glazing Manual" and "Laminated Glass Design Guide."
2. SIGMA Publications: SIGMA TM-3000, "Vertical Glazing Guidelines," and SIGMA TB- 3001, "Sloped Glazing Guidelines."

F. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the following inspecting and testing agency:
1. Insulating Glass Certification Council.
2. Associated Laboratories, Inc.
3. National Accreditation and Management Institute.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting and sealing to avoid hermetic seal ruptures.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1.9 WARRANTY

A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Manufacturer's Special Warranty on Coated-Glass Products: Written warranty, made out to Owner and signed by coated-glass manufacturer agreeing to furnish replacements for those coated-glass units that deteriorate within specified warranty period indicated below.
1. Warranty Period: 10 years from date of Substantial Completion.

C. Manufacturer's Special Warranty on Insulating Glass: Written warranty, made out to Owner and signed by insulating-glass manufacturer agreeing to furnish replacements for insulating-glass units that deteriorate within specified warranty period indicated below.
1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products indicated in schedules at the end of Part 3.

2.2 INSULATING GLASS

A. Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in the Insulating-Glass Schedule at the end of Part 3.
1. Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in "Performance Requirements" Article. Provide Kind FT (fully tempered) where safety glass is indicated.

B. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated in the Insulating- Glass Schedule at the end of Part 3 are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.

C. Sealing System: Dual seal, with primary and secondary sealants as follows:
1. Manufacturer's standard sealants.

D. Spacer Specifications: Manufacturer's standard spacer material and construction.

E. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
1. Aluminum with mill or clear-anodized finish.
2. Corner Construction: Manufacturer's standard corner construction.

2.3 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
1. Neoprene, ASTM C 864.
2. EPDM, ASTM C 864.
3. Silicone, ASTM C 1115.
4. Thermoplastic polyolefin rubber, ASTM C 1115.
5. Any material indicated above.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal:
1. Neoprene.
2. EPDM.
3. Silicone.
4. Thermoplastic polyolefin rubber.

5. Any material indicated above.

2.4 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

2.5 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

B. Grind smooth and polish exposed glass edges. PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing glazing, with Installer present, for compliance with the following:
1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where the length plus width is larger than 50 inches (1270 mm) as follows:
1. Locate spacers directly opposite each other on both inside and outside faces of glass.

Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.

2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

3.5 PROTECTION AND CLEANING

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

3.6 MONOLITHIC FLOAT-GLASS SCHEDULE

A. Uncoated Clear Float Glass: Where glass as designated below is indicated, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:
1. Uncoated Clear Annealed Float Glass: Annealed or Kind HS (heat strengthened), Condition A (uncoated surfaces) where heat strengthening is required to resist thermal stresses induced by differential shading of individual glass lites and to comply with performance requirements.
2. Uncoated Clear Fully Tempered Float Glass: Kind FT (fully tempered).

B. Coated Tinted Float Glass: Where glass as designated below is indicated, provide Class 2 (tinted, heat-absorbing, and light-reducing) glass lites complying with the following:
1. Tint Color: "Solar Grey" by PPG Industries.
2. Coated Tinted Glass: Annealed or Kind HS (heat strengthened), Condition C (other coated glass) where heat strengthening is required to resist thermal stresses induced by differential shading of individual glass lites and to comply with system performance requirements.
3. Coated Tinted Fully Tempered Float Glass: Kind FT (fully tempered).

C. Low-E Coated Float Glass: Where glass as designated below is indicated, provide Class 2 (heat-absorbing, and light-reducing) glass lites complying with the following:
1. Low-E coated Fully Tempered Float Glass: Kind FT (fully tempered). END OF SECTION

SECTION 09 26 00 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
1. Interior gypsum wallboard.

1.3 DEFINITIONS

A. Gypsum Board Terminology: Refer to ASTM C 11 for definitions of terms for gypsum board assemblies not defined in this Section or in other referenced standards.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance-Rated Assemblies: Indicated by design designations from GA-600, "Fire Resistance Design Manual."

B. Gypsum Board Finish Mockups: Before finishing gypsum board assemblies, install mockups of at least 100 sq. ft. (9 sq. m) in surface area to demonstrate aesthetic effects and qualities of materials and execution.
1. Install mockups for the following applications:
a) Surfaces indicated to receive textured paint finishes.
2. Simulate finished lighting conditions for review of mockups.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

PART 2 - PRODUCTS

2.1 INTERIOR GYPSUM WALLBOARD

A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.

B. Gypsum Wallboard: ASTM C 36.
1. Type X (where indicated):
a) Thickness: 5/8 inch (15.9 mm).
b) Long Edges: Tapered.
c) Location: As indicated .

2. High Impact, Fiberock Abuse-Resistant, or approved equal (where indicated):
a) Thickness: 5/8 inch (15.9 mm).
b) Long Edges: Tapered.
c) Location: As indicated .

2.2 RESTROOMS, JANITORIAL, STORAGE AREAS

A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.

B. Water-Resistant Gypsum Backing Board: ASTM C 630/C 630M.
1. Core: 5/8 inch (15.9 mm), regular type.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet].
2. Shapes:
a) Cornerbead: Use at outside corners.
b) L-Bead: L-shaped; exposed long leg receives joint compound; use where indicated.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475.

B. Joint Tape:
1. Interior Gypsum Wallboard: Paper.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
a) Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.

D. Joint Compound for Tile Backing Panels:
1. Water-Resistant Gypsum Backing Board: Use setting-type taping and setting-type, sandable topping compounds.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick. PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Contractor shall float, patch, repair, or skim existing wall surfaces as required, in order to achieve an acceptable wall substrate for the application of a new wall finish.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA-216.

B. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install gypsum panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Attach gypsum panels to steel studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

F. Attach gypsum panels to framing provided at openings and cutouts.

G. Form control and expansion joints with space between edges of adjoining gypsum panels.

H. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.

2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect open concrete coffers, concrete joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

I. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations, and trim edges with U-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

J. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.
1. Space screws a maximum of 12 inches (304.8 mm) o.c. for vertical applications.

K. Space fasteners in panels that are tile substrates a maximum of 8 inches (203.2 mm) o.c.

3.3 PANEL APPLICATION METHODS

A. Single-Layer Application:
1. On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) or horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
a) Stagger abutting end joints not less than one framing member in alternate courses of board.
b) At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.

B. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Tile Backing Panels:
1. Water-Resistant Gypsum Backing Board: Install at showers, toilet, and locker rooms, and where indicated. Install with 1/4-inch (6.4-mm) gap where panels abut other construction or penetrations.
2. Areas Not Subject to Wetting: Install standard gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

3.5 FINISHING GYPSUM BOARD ASSEMBLIES

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. Contractor shall install a new "smooth" wall finish texture over the existing wall texture at all existing wall locations.

E. Contractor shall float, patch, repair, or skim existing wall surfaces as required, in order to achieve an acceptable wall substrate for the application of a new wall finish.

F. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:

1. Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.
2. Level 4: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges at panel surfaces that will be exposed to view, unless otherwise indicated.

END OF SECTION

SECTION 09 51 10 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes acoustical panels and exposed suspension systems for ceilings.

B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete at ceilings.

1.3 DEFINITIONS

A. AC: Articulation Class.

B. CAC: Ceiling Attenuation Class.

C. LR: Light Reflectance coefficient.

D. NRC: Noise Reduction Coefficient.

1.4 SUBMITTALS

A. Samples for Initial Selection: For components with factory-applied color finishes.

B. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
1. Acoustical Panel: Set of 6-inch- (150-mm-) square Samples of each type, color, pattern, and texture.
2. Exposed Suspension System Members, Moldings, and Trim: Set of 12-inch- (300-mm-) long Samples of each type, finish, and color.

1.5 QUALITY ASSURANCE

A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548. NVLAP-accredited laboratories must document accreditation, based on a "Certificate of Accreditation" and a "Scope of Accreditation" listing the test methods specified.

B. Source Limitations:
1. Surface-Burning Characteristics: Provide acoustical panels with the following surface- burning characteristics complying with ASTM E 1264 for Class A materials as determined by testing identical products per ASTM E 84:
a) Smoke-Developed Index: 450 or less.

C. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:

1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.
2. UBC Standard 25-2, "Metal Suspension Systems for Acoustical Tile and for Lay-in Panel Ceilings."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

1.8 COORDINATION

A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.9 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed.
2. Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANELS, GENERAL

A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.
1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from test surface per ASTM E 795.

B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product

designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

2.2 MINERAL-BASE ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING.

A. Products:
1. Basis of design shall match existing ceiling tile and is based upon the following: USG Interiors, LLC; ***USG White Glacier 708 Fineline 3/4x2x2***.
2. Classification: Provide ceiling panels complying with ASTM E 1264 for type, form and pattern as follows:
1. Type: III, mineral base with integral color to match existing
2. Form: 4, cast or molded
3. Pattern: F, heavy texture

C. Edge Detail: Reveal sized to fit flange of exposed suspension system members.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

A. Metal Suspension System Standard: Basis of design shall match exiting and is based upon USG Donn DXF/DXLF Fineline . Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.

B. Finishes and Colors, General: Match existing color. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.

C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.
1. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.

D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
1. Zinc-Coated Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
2. Nickel-Copper-Alloy Wire: ASTM B 164, nickel-copper-alloy UNS No. N04400.
3. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.

E. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.

F. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place.

2.4 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING.

A General: ASTM C635, commercial quality pretreated and painted hot-dipped galvanized cold- rolled steel, exposed surfaces prefinished in manufacturer's standard corrosion resistant enamel paint finish; color: Flat White #050 or as selected from manufacturer's standard colors.

B Available Systems

1. USG Corporation: " ***System DXF / DXLF - H*** "
a. Available Products: "***DONN® DXF/ DXLF Fineline® (DXF)***" C Suspension System Components:

1. Main Tees: UL Classified ***Heavy Duty*** Classification; Double-web G30 hot-dipped galvanized painted steel; 1-25/32" high; Box Profile; 9/16" wide slotted grid system with ¼" reveal; notched 24" o.c. / c.t. hole at 12" o.c.; mitered intersections.
2. Cross Tees :
a. 1-25/32" high; Double-web G30 hot-dipped galvanized painted steel; Box Profile; 9/16" wide slotted grid system with ¼" reveal; no notch.
b Main tees and cross tees shall be positively locked, yet shall be removable without the use of tools.

D Accessories:

1 Wall Molding Available Products:

a Angle Wall Molding: Angle shape; 7/8" mounting flange by minimum 7/8" face flange; hemmed edges; exposed surface pre-finished to match suspension system components
1 Inside Corner: Field-mitered joints at wall molding.
2 Inside Corner: Prefabricated corner cap; formed to 90° angle; hemmed edge; size and finish to match wall molding.

3 Outside Corner: Prefabricated corner cap; formed to 90° angle; hemmed edge; size and finish to match wall molding.

a Available Products: ***USG M7***

b Shadow Wall Molding: Formed steel section; exposed surfaces to match suspension system components.

1 Minimum 7/8" exposed flange; 3/4" x 3/4" reveal; 7/8" mounting flange. a Available Products: ***USG MS124***

2 Attachment clip for tee to wall molding

a Available Products: ***ACM7 Seismic Clip***

1 Alternate to 2" wall molding, stabilizer bars, and perimeter wires

2 Contractor to verify acceptance by local code officials prior to installation E Suspension System

Attachment devices:

a. Hanger Wire: Galvanized carbon steel; soft temper; pre-stretched; yield stress load at least three times the design load but not less than 12-gauge.

F Suspension System Warranty: When used with a USG acoustical ceiling panel, this suspension system has a Lifetime 30 year warranty that it shall be free from the occurrence of 50% red rust. When used without a USG acoustical ceiling panel, the period of warranty is 10 years.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified

in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION, GENERAL

A. General: Install acoustical panel ceilings to comply with UBC Standard 25-2 and seismic requirements indicated, per manufacturer's written instructions.

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced

standards and publications.
4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, post-installed mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
6. Do not attach hangers to steel deck tabs.
7. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or post-installed anchors.

D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
2. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.66 m). Miter corners accurately and connect securely.
3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
1. Arrange directionally patterned acoustical panels as follows:
a) As indicated on reflected ceiling plans.
b) Install panels with pattern running in one direction parallel to long axis of space.
2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
3. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.

3.4 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 09 60 00 - CARPET TILE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A This Section includes modular, tufted carpet tile.

1. Related Sections include the following:

2. Division 9 Section "Resilient Floor Tile" for resilient wall base and accessories installed with carpet tile.

1.3 SUBMITTALS

A Product Data: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation recommendations for each type of substrate.

B Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1 Carpet Tile: Full-size Sample.
2 Exposed Edge, Transition, and other Accessory Stripping: 12-inch- long Samples. C Qualification

Data: For Installer.

D Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:

a. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
b. Precautions for cleaning materials and methods that could be detrimental to carpet tile. E

Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

A Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.

B Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Coordination." Review methods and procedures related to carpet tile installation including, but not limited to, the following:

a. Review delivery, storage, and handling procedures.

b. Review ambient conditions and ventilation procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

A Comply with CRI 104, Section 5, "Storage and Handling."

1.6 PROJECT CONDITIONS

A Comply with CRI 104, Section 7.2, "Site Conditions; Temperature and Humidity" and Section 7.12, "Ventilation."

B Environmental Limitations: Do not install carpet tiles until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

C Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.

E Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

1.7 WARRANTY

A Special Warranty for Carpet Tiles: Manufacturer's standard form in which manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.

a. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
b. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, loss of tuft bind strength, dimensional stability, excess static discharge, and delamination.
c. Warranty Period: 10 years from date of Substantial Completion.

1.9 EXTRA MATERIALS

A Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

a. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type. PART 2 -

PRODUCTS

2.1 CARPET TILE

A Products: ***Basis of design shall match the existing carpet tiles***. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:

1 Milliken (Basis of Design for existing building carpet standard): a Name: Attitudes - Tattoo.
b Color: "Fire Dragon" ***Confirm matches existing building standard prior to order.***
c Pattern: #546116.
d Dyelot: Match existing dyelot 10992 e Grade: Match existing grade 15
f Fiber Content: 100 percent nylon 6
g Pile Characteristic: Tufted, textured loop. h Yarn Count: 8 stitches per inch.
i Density: 8,000.
j Pile Thickness: .09" for finished carpet tile. k Stitches: 8 stitches per inch.
l Gage: 1/8
m Tufted Yarn Weight: 20 oz./sq. yd.
m Backing System: PVC –Free Comfort Plus ES Cushion o Size: 36"x36".
p Soil/Stain Protection: StainSmart.
q Antimicrobial Treatment: AlphaSan AF Built-in Protection.

2. Bentley
a. Color: Carbon Beach
b. Code: 4CX260220K
c. Pile Characteristic: Tufted Tip-Sheared
d. Fiber: Antron Legacy Type 6,6 Nylon
e. Gage: 1/12
f. Pile Thickness: 0.142"
g. Stitches: 11.7 stitches per inch
h. Backing: AFRIMA Hardback
i. Size: 24"x24"
j. Soil/Stain Protection: XTERA

3. Bentley

a. Color: Groto Trail
b. Code: 4GT260AA0K
c. Pile Characteristic: Tufted Tip-Sheared
d. Fiber: Antron Legacy Type 6,6 Nylon
e. Gage: 1/12
f. Pile Thickness: 0.142"
g. Stitches: 11.5 stitches per inch
h. Backing: AFRIMA Hardback
i. Size: 18"x36"
j. Soil/Stain Protection: XTERA

B PERFORMANCE CHARACTERISTICS:

a Radiant Panel: ASTM E-648, Class 1, ≥ 0.45
b Dimensional Tolerance: Within 1/32 inch of specified size dimensions, as determined by physical measurement. c Dimensional Stability: 0.2 percent or less per ISO 2551 (Aachen Test).
d Colorfastness to Crocking: ≥ 4.0 wet or dry, per AATCC 165. e Lightfastness: ≥ 4.0 at 80 hours, Per AATCC 16E.
f Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria; not less than 1-mm halo of inhibition for gram-negative bacteria; no fungal growth; per AATCC 174.
g Electrostatic Propensity: ≤ 3.5 kV per AATCC 134; permanent conductive fiber.
h Environmental Requirements: Provide carpet tile that complies with testing and product requirements of Carpet and Rug Institute's "Green Label Plus" program.

C INSTALLATION ACCESSORIES

a. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement- based formulation provided or recommended by carpet tile manufacturer.

b. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation.

c VOC Limits: Provide adhesives with VOC content not more than 50 g/L when calculated according to 40 CFR 59, Subpart D (EPA method 24).

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.

B Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

a. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
b. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving carpet tile.

c. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits. C Proceed with

installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation.

B Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider and protrusions more than 1/32 inch, unless more stringent requirements are required by manufacturer's written instructions.

C Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet tile manufacturer.

D Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

A General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.

B Installation Method: Partial glue down; install periodic tiles with releasable, pressure-sensitive adhesive.

C Maintain dye lot integrity. Do not mix dye lots in same area.

D Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

E Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

F Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.

G Install pattern parallel to walls and borders.

3.4 CLEANING AND PROTECTION

A Perform the following operations immediately after installing carpet tile:

1 Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet tile manufacturer.

2 Remove yarns that protrude from carpet tile surface.

3 Vacuum carpet tile using commercial machine with face-beater element.

4 Protect installed carpet tile to comply with CRI 104, Section 16, "Protection of Indoor Installations."

5 Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION

SECTION 09 65 10 - RESILIENT FLOOR TILE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
1. Vinyl composition tile (VCT).
2. Resilient wall base and accessories.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: Full-size units of each color and pattern of resilient floor tile required.
1. Resilient Wall Base and Accessories: Manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long, of each resilient product color and pattern required.

C. Maintenance Data: For resilient products to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide products identical to those tested for fire-exposure behavior per test method indicated by a testing and inspecting agency acceptable to authorities having jurisdiction.

B. Perform moisture test of concrete floor slab in accordance with this section.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store tiles on flat surfaces.

1.6 PROJECT CONDITIONS

A. Maintain temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) Insert temperature or more than 95 deg F (35 deg C) Insert temperature, in spaces to receive floor tile during the following time periods:
1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After post-installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) Insert temperature or more than 95 deg F (35 deg C) Insert temperature.

C. Close spaces to traffic during floor covering installation.

D. Close spaces to traffic for 48 hours after floor covering installation.

E. Install resilient products after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 COLORS AND PATTERNS

A. Colors and Patterns: As selected by Architect from manufacturer's full range. Bidders shall assume for bidding purposes a random floor pattern of 4 colors throughout the facility. Pattern shall be as selected by Architect.

2.3 VINYL COMPOSITION TILE

A. Vinyl Composition Tile (VCT): ASTM F 1066.
1. Armstrong World Industries, Inc.; Excelon, Imperial Texture or approved equivalent from the following:
a) Azrock Commercial Flooring, DOMCO.
b) Congoleum Corporation.
c) Mannington Mills, Inc.
d) Tarkett Inc.

B. Class: 1 (solid-color tile).

C. Size: 12 by 12 inches (305 by 305 mm).

D. Fire-Test-Response Characteristics: Class I, not less than 0.45 W/sq. cm per
1. Critical Radiant Flux Classification: ASTM E 648.

2.4 RESILIENT WALL BASE

A. Wall Base: ASTM F 1861.
1. Armstrong World Industries, Inc.
2. Azrock Commercial Flooring, DOMCO.
3. Burke Mercer Flooring Products.
4. Marley Flexco (USA), Inc.
5. Roppe Corporation.

B. Style: Cove (with top-set toe).

C. Minimum Thickness: 0.125 inch (3.2 mm).

D. Height: 6 inches (102 mm).

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: Premolded.

G. Inside Corners: Premolded.

H. Surface: Smooth.

2.5 RESILIENT MOLDING ACCESSORY

A. Description: Carpet edge for glue-down applications.
1. Burke Mercer Flooring Products.
2. Marley Flexco (USA), Inc.
3. Roppe Corporation.

B. Material: Vinyl.

C. Profile and Dimensions: As indicated.

2.6 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of tiles, and in maximum available lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances, moisture content, and other conditions affecting performance.
1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
3. Moisture Testing:
a) Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
b) Perform tests recommended by manufacturer and submit test results to Architect. Proceed with installation only after substrates pass testing.

c) In the event that moisture vapor emissions exceed 3lbs./1000 sq. ft./24 hrs., the Contractor, at his expense, shall install a barrier coat and moisture sealer, "J&J Commercialon 877 Premium Barrier Coat". Contractor shall apply two coats per manufacturer's instructions, prior to installation of the flooring material.

C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

D. Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.

E. Contractor shall grind, patch, float the floor substrate as required to create an even and level flooring surface.

F. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.

G. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
1. Do not install resilient products until they are same temperature as space where they are to be installed.

H. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 TILE INSTALLATION

A. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
1. Lay tiles square with room axis in pattern indicated.

B. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern) in pattern of colors and sizes indicated.

C. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.

D. Extend tiles into toe spaces, door reveals, closets, and similar openings.

E. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.

F. Install tiles on covers for telephone and electrical ducts and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of tile installed on covers. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.

G. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 RESILIENT WALL BASE INSTALLATION

A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

C. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

D. Do not stretch wall base during installation.

E. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.

F. Premolded Corners: Install premolded corners before installing straight pieces.

3.5 RESILIENT ACCESSORY INSTALLATION

A. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor coverings that would otherwise be exposed.

3.6 CLEANING AND PROTECTION

A. Perform the following operations immediately after completing resilient product installation:
1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.
a) Do not wash surfaces until after time period recommended by manufacturer.

B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.
1. Apply protective floor polish to horizontal surfaces that are free from soil, visible adhesive, and surface blemishes if recommended in writing by manufacturer.
a) Use commercially available product acceptable to manufacturer.
b) Coordinate selection of floor polish with Owner's maintenance service.
2. Cover products installed on horizontal surfaces with undyed, untreated building paper until Substantial Completion.

3. Do not move heavy and sharp objects directly over surfaces. Place hardboard or plywood panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

END OF SECTION

SECTION 09 65 30 - RESILIENT WALL BASE AND ACCESSORIES

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 Resilient base.
2 Resilient molding accessories.

1.3 ACTION SUBMITTALS

A Product Data: For each type of product.

B Samples: For each exposed product and for each color and texture specified, not less than 12 inches (300 mm) long.

C Samples for Initial Selection: For each type of product indicated.

D Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long.

E Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1 Furnish not less than 10 linear feet (3 linear m) for every 500 linear feet (150 linear m) or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 QUALITY ASSURANCE

B Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1 Coordinate mockups in this Section with mockups specified in other Sections.

1.6 DELIVERY, STORAGE, AND HANDLING

A Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.7 FIELD CONDITIONS

A Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive resilient products during the following time periods:

1 48 hours before installation.
2 During installation.
3 48 hours after installation.

B After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A FloorScore Compliance: Resilient base shall comply with requirements of FloorScore certification.

B Low-Emitting Materials: Flooring system shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 THERMOSET-RUBBER BASE

A Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1 Burke Mercer Flooring Products, Division of Burke Industries Inc.
2 Flexco.
3 Roppe Corporation, USA.

B Product Standard: ASTM F 1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).

1 Style: Cove

2 Location: Provide in areas with carpet and resilient flooring.

3 Thickness: 0.125 inch (3.2 mm).

4 Height: 4 inches (152 mm).

5 Lengths: Cut lengths 48 inches (1219 mm) long or coils in manufacturer's standard length.

6 Outside Corners: Job formed or preformed.

7 Inside Corners: Job formed or preformed.

8 Colors: See drawings.

2.3 RUBBER MOLDING ACCESSORY

A Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1 Roppe Corporation, USA.
2 VPI, LLC, Floor Products Division.

B Description: Rubber joiner for tile and carpet. C Profile and Dimensions: As indicated.

D Locations: Provide rubber molding accessories in areas indicated.

E Colors and Patterns: As selected by Architect from full range of industry colors.

2.4 INSTALLATION MATERIALS

A Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

B Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

1 Adhesives shall have a VOC content of 50 g/L or less.
2 Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

D Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1 Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B Proceed with installation only after unsatisfactory conditions have been corrected.

1 Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F 710.

1 Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2 Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3 Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4 Moisture Testing: Proceed with installation only after substrates pass testing according to manufacturer's written recommendations, but not less stringent than the following:

a Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
b Perform relative humidity test using in situ probes according to ASTM F 2170.
Proceed with installation only after substrates have maximum 75 percent relative humidity level.

C Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D Do not install resilient products until they are the same temperature as the space where they are to be installed.

1 At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

A Comply with manufacturer's written instructions for installing resilient base.

B Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E Do not stretch resilient base during installation.

F On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G Preformed Corners: Install preformed corners before installing straight pieces. H Job-Formed

Corners:

1 Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.

a Form without producing discoloration (whitening) at bends.

2 Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.

a Miter or cope corners to minimize open joints.

3.4 RESILIENT ACCESSORY INSTALLATION

A Comply with manufacturer's written instructions for installing resilient accessories.

B Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A Comply with manufacturer's written instructions for cleaning and protecting resilient products. B

Perform the following operations immediately after completing resilient-product installation:

1 Remove adhesive and other blemishes from exposed surfaces.
2 Sweep and vacuum horizontal surfaces thoroughly.
3 Damp-mop horizontal surfaces to remove marks and soil.

C Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D Cover resilient products subject to wear and foot traffic until Substantial Completion. END OF SECTION

SECTION 09 66 10 - STATIC-CONTROL RESILIENT FLOOR COVERINGS

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 Static-dissipative, vinyl composition floor tile. B Related Requirements:

1 Section 09653 "Resilient Wall Base and Accessories" for resilient base, reducer strips, and other accessories installed with static-control resilient flooring.

1.3 PREINSTALLATION MEETINGS

A Preinstallation Conference: Conduct conference at Project site.

1 Review methods and procedures related to static-control resilient flooring including, but not limited to, the following:

a Examination and preparation of substrates to receive static-control resilient flooring.
b Installation including seamless installation techniques.

1.4 ACTION SUBMITTALS

A Product Data: For each type of product.

B Shop Drawings: For each type of static-control resilient flooring. Include floor-covering layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.

1 Show details of special patterns.
2 Show locations of inscribed maintenance tiles.
3 Submit grounding diagram showing location of grounding strips and connections. C Samples for

Initial Selection: For each type of static-control resilient flooring.

D Samples for Verification: For each type of static-control resilient flooring, of size indicated below:

1 Floor Tile: Full-size units.
2 Heat-Welding Bead: Include manufacturer's standard-size Samples, but not less than 9 inches (230 mm) long, of each color required.

E Seam Samples: For seamless-installation technique indicated and for each static-control resilient flooring product, color, and pattern required; with seam running lengthwise and in center of 6-by-9-inch (152-by-230-mm) Sample applied to a rigid backing and prepared by Installer for this Project.

F Product Schedule: For static-control resilient flooring. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A Qualification Data: For Installer.

B Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for static-control resilient flooring.

C Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A Maintenance Data: For each type of static-control resilient flooring to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

B Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1 Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.
2 Sheet Floor Covering: Furnish not less than 10 linear feet (3 linear m) for every 500 linear feet (150 linear m) or fraction thereof, in roll form and in full roll width for each color, pattern, and type of sheet floor covering installed.

1.8 QUALITY ASSURANCE

A Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for static-control resilient flooring and seaming method.

1 Engage an installer who employs workers for this Project who are trained or certified by manufacturer for installation techniques required.

B Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1 Build mockups for static-control resilient flooring including resilient base and accessories.

1 Size: Minimum 100 sq. ft. (9.3 sq. m) for each type, color, and pattern in locations directed by Architect.

I. DELIVERY, STORAGE, AND HANDLING

A Store static-control resilient flooring and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1 Floor Tile: Store on flat surfaces.
2 Sheet Floor Covering: Store rolls upright.

1.9 PROJECT CONDITIONS

A Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 85 deg F (29 deg C), in spaces to receive static-control resilient flooring during the following time periods:

1 48 hours before installation.
2 During installation.
3 48 hours after installation.

B Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C Close spaces to traffic during static-control resilient flooring installation.

D Close spaces to traffic for 48 hours after static-control resilient flooring installation.

E Install static-control resilient flooring after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A Static-Dissipative Properties: Provide static-control resilient flooring with static-control properties indicated as determined by testing identical products per test method indicated by an independent testing and inspecting agency.

1 Electrical Resistance: Test per ESD-STM-7.1.

a Average greater than 1 megohm and less than or equal to 1000 megohms when test specimens are tested surface to ground.
b Average greater than 1 megohm and less than or equal to 1000 megohms when installed floor coverings are tested surface to ground.

2 Static Generation: Less than 300 V when tested per AATCC-134 at 20 percent relative humidity with conductive footwear.
3 Static Decay: 5000 to zero V in less than 0.25 seconds when tested per FED-STD-101C/4046.1.

B FloorScore Compliance: Static-control resilient flooring shall comply with requirements of FloorScore certification.

C Low-Emitting Materials: Flooring system shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1 Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 STATIC-DISSIPATIVE RESILIENT FLOOR COVERINGS

A Static-Dissipative, Vinyl Composition Floor Tile: ASTM F 1066 (vinyl composition floor tile, nonasbestos formulated), Class 2 (through-pattern tile).

1 Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a Armstrong World Industries, Inc; Static Dissipative SDT.

2 Thickness: Not less than 0.125 inch (3.2 mm).
3 Size: 12 by 12 inches (305 by 305 mm).
4 Colors and Patterns: As selected by Architect from full range of industry colors.

B Static-Dissipative, Vinyl Sheet Floor Covering: ASTM F 1913 (unbacked) or ASTM F 1303, Type II, Grade I, Class B (nonfoamed plastic backing).

1 Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a Gerflor; ***Mipolam Accord EL 7***
b Johnsonite; A Tarkett Company; Statiflor Granit SD.

2 Thickness: Not less than 0.08 inch (2.0 mm).
3 Size: Manufacturer's standard roll width and length.
4 Seaming Method: Heat welded.
5 Colors and Patterns: As selected by Architect from full range of industry colors.

2.3 INSTALLATION MATERIALS

A Trowelable Leveling and Patching Compounds: Latex-modified portland cement or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B Static-Control Adhesive: Provided or approved by manufacturer; type that maintains electrical continuity of floor-covering system to ground connection.

1 Adhesives shall comply with the following limits for VOC content: a VCT and Asphalt Tile

Adhesives: Not more than 50 g/L.
b Rubber Floor Adhesives: Not more than 60 g/L.

2 Adhesives shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C Grounding Strips: Provided or approved by manufacturer; type and size that maintains electrical continuity of floor-covering system to ground connection.

D Seamless-Installation Accessories:

1 Heat-Welding Bead: Solid-strand product of manufacturer for heat welding seams.

1 Color: [***As selected by Architect from manufacturer's full range to contrast with floor covering***] [***Match floor covering***].

E Maintenance Floor Tiles: Special floor tiles inscribed "Conductive floor. Do not wax."

F Floor Polish: Provide protective, static-control liquid floor polish products as recommended by floor-covering manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine substrates, with Installer[***and manufacturer's representative***] present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion or static-control characteristics of floor coverings.

C Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A Prepare substrates according to manufacturer's written instructions[***and with oversight by manufacturer's representative***] to ensure adhesion of static-control resilient flooring and electrical continuity of floor-covering systems.

B Concrete Substrates: Prepare according to ASTM F 710.

1 Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2 Remove substrate coatings and other substances that are incompatible with floor- covering adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3 Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
4 Moisture Testing: Perform tests recommended by manufacturer[***and as follows***].
Proceed with installation only after substrates pass testing.

1 Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
2 Perform relative-humidity test using in situ probes according to ASTM F 2170.
Proceed with installation only after substrates have maximum 75 percent relative- humidity level measurement.

C Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.

D Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

E Do not install static-control resilient flooring until it is same temperature as space where it is to be installed.

1 Move static-control resilient flooring and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

F Sweep and vacuum substrates to be covered by static-control resilient flooring immediately before installation.

3.3 INSTALLATION, GENERAL

A Install static-control resilient flooring according to manufacturer's written instructions[***and with oversight by manufacturer's representative***].

B Embed grounding strips in static-control adhesive. Extend grounding strips beyond perimeter of static-control resilient floor-covering surfaces to ground connections.

C Scribe, cut, and fit static-control resilient flooring to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

D Extend static-control resilient flooring into toe spaces, door reveals, closets, and similar openings. Extend static-control resilient flooring to center of door openings.

E Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on static-control resilient flooring as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.

F Install static-control resilient flooring on covers for telephone and electrical ducts, and similar items in installation areas. Maintain overall continuity of color and pattern with pieces of static- control resilient flooring installed on covers. Tightly adhere static-control resilient flooring edges to substrates that abut covers and to cover perimeters.

G Adhere static-control resilient flooring to substrates using a full spread of static-control adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

H Seamless Installation:

1 Heat-Welded Seams: Comply with ASTM F 1516. Rout joints and heat weld with welding bead to permanently fuse sections into a seamless floor covering. Prepare, weld, and finish seams to produce surfaces flush with adjoining floor-covering surfaces.

2 Chemically Bonded Seams: Bond seams with chemical-bonding compound to permanently fuse sections into a seamless floor covering. Prepare seams and apply compound to produce tightly fitted seams without gaps, overlays, or excess bonding compound on floor-covering surfaces.

I Integral-Flash-Cove Base: Cove static-control flooring 6 inches (152 mm) up vertical surfaces. Support static-control resilient flooring at horizontal and vertical junction with cove strip. Butt at top against cap strip.

1 Install metal corners at inside and outside corners.

3.4 FLOOR-TILE INSTALLATION

A Comply with manufacturer's written instructions for installing floor tile.

B Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so floor tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half floor tile at perimeter.

1 Lay floor tiles in pattern indicated.

C Match floor tiles for color and pattern by selecting floor tiles from cartons in same sequence as manufactured and packaged if so numbered. Discard broken, cracked, chipped, or deformed floor tiles.

1 Lay static-dissipative, vinyl composition floor tiles in pattern of colors and sizes indicated.

D In each space where conductive, solid vinyl floor tile is installed, install maintenance floor tile identifying conductive floor tile in locations approved by Architect.

E. SHEET FLOOR-COVERING INSTALLATION

A Comply with manufacturer's written instructions for installing sheet floor coverings. B Unroll sheet floor coverings and allow them to stabilize before cutting and fitting. C Lay out sheet floor coverings as follows:

1 Maintain uniformity of sheet floor-covering direction.
2 Minimize number of seams and place them in inconspicuous and low-traffic areas, at least 6 inches (152 mm) away from parallel joints in floor-covering substrates.
3 Match edges of floor coverings for color shading at seams.
4 Avoid cross seams.

3.5 FIELD QUALITY CONTROL

A Testing: Engage a qualified testing agency to test electrical resistance of static-control resilient flooring for compliance with requirements.

1 Arrange for testing after static-control adhesives have fully cured and static-control resilient flooring has stabilized to ambient conditions and after ground connections are completed.
2 Arrange for testing of static-control resilient flooring before and after performing floor polish procedures.

B Static-control resilient flooring will be considered defective if it does not pass tests and inspections.

C Prepare test and inspection reports.

3.6 CLEANING AND PROTECTION

A Comply with manufacturer's written instructions for cleaning and protection of static-control resilient flooring.

B Perform the following operations immediately after completing static-control resilient flooring:

1 Remove static-control adhesive and other blemishes from exposed surfaces.
2 Sweep and vacuum surfaces thoroughly.
3 Damp-mop surfaces to remove marks and soil.

C Protect static-control resilient flooring from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

1 Do not wax static-control resilient flooring.
2 If recommended in writing by manufacturer, apply protective static-control floor polish formulated to maintain or enhance floor covering's electrical properties; ensure static- control resilient flooring surfaces are free from soil, static-control adhesive, and surface blemishes.

1 Verify that both floor polish and its application method are approved by manufacturer and that floor polish will not leave an insulating film that reduces static-control resilient flooring's effectiveness for static control.

D Cover static-control resilient flooring until Substantial Completion. END OF SECTION

SECTION 09 91 20 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from a full range of colors and finishes available.
1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, suspended ceiling tiles and suspension grids, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish. Painting shall include exposed mechanical registers and grills.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels, unless otherwise noted.
1. Prefinished items include the following factory-finished components:
a) Acoustical wall panels.
b) Metal toilet enclosures.
c) Metal lockers.
d) Elevator entrance doors and frames.
e) Elevator equipment.
f) Light fixtures (Not including trims).
g) Drinking Fountains.
h) Fire Extinguisher Cabinets
2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
a) Furred areas.
b) Ceiling plenums.

c) Pipe spaces.
d) Duct shafts.
e) Elevator shafts.
3. Finished metal surfaces include the following:
a) Anodized aluminum, UON.
b) Stainless steel.
c) Chromium plate.
d) Copper and copper alloys.
e) Bronze and brass.
4. Operating parts include moving parts of operating equipment and the following:
a) Valve and damper operators.
b) Linkages.

c) Sensing devices.
d) Motor and fan shafts.
5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections include the following:
1. Division 5 Section "Structural Steel" for shop priming structural steel.
2. Division 5 Section "Metal Fabrications" for shop priming ferrous metal.
3. Division 9 Section "Gypsum Board Assemblies" for surface preparation of gypsum board.

1.3 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
1. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
2. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.4 SUBMITTALS

A. Product Data: For each paint system indicated. Include block fillers and primers.
1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.

B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
3. Submit Four samples on the following substrates for Architect's review of color and texture only:
a) Concrete: 4-inch- (100-mm-) square samples for each color and finish.
b) Stained or Natural Wood: 4-by-8-inch (100-by-200-mm) Samples of natural- or stained-wood finish on representative surfaces.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations: Obtain for each coating system from the same manufacturer as the finish coats.

C. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
1. Architect will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.

a) Wall Surfaces: Provide samples on at least 50 sq. ft
b) Small Areas and Items: Architect will designate items or areas required.
2. Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface.
a) After finishes are accepted, Architect will use the room or surface to evaluate coating systems of a similar nature.
3. Final approval of colors will be from benchmark samples.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain storage containers in a clean condition, free of foreign materials and residue.
1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.7 PROJECT CONDITIONS

A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C).

B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F (7 and 35 deg C).

C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements
1. Benjamin Moore & Co. (Benjamin Moore).
2. Dunn Edwards Paints

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. Colors: As selected by Architect from manufacturer's full range. Contractor shall assume for bidding purposes that a min. of 6 interior colors and 6 exterior colors will used at various locations and quantities throughout the project.

2.3 EXTERIOR PRIMERS

A. Exterior Concrete and Masonry Primer: Factory-formulated alkali-resistant acrylic-latex primer for exterior application.
1. Benjamin Moore; Moore's Acrylic Masonry Sealer No. 066: Applied at a dry film thickness of not less than 0.7 mils (0.018 mm).

B. Exterior Ferrous-Metal Primer: Factory-formulated rust-inhibitive metal primer for exterior application.
1. Benjamin Moore; Moore's IMC Alkyd Metal Primer No. M06: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).

2.4 INTERIOR PRIMERS

A. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.
1. Benjamin Moore; Moorcraft Super Spec Latex Enamel Undercoater & Primer Sealer No. 253: Applied at a dry film thickness of not less than 1.2 mils (0.030 mm).

B. Interior Ferrous-Metal Primer: Factory-formulated quick-drying rust-inhibitive alkyd-based metal primer.
1. Benjamin Moore; Moore's IMC Alkyd Metal Primer No. M06: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).

2.5 EXTERIOR FINISH COATS

A. Exterior Semigloss Acrylic Enamel: Factory-formulated semigloss waterborne acrylic-latex enamel for exterior application.
1. Benjamin Moore; Moorcraft Super Spec Latex House & Trim Paint No. 170: Applied at a dry film thickness of not less than 1.1 mils (0.028 mm).

2.6 INTERIOR FINISH COATS

A. Interior Acrylic Enamel: Factory-formulated semigloss or flat acrylic-latex enamel for interior application.
1. Benjamin Moore; Moorcraft Super Spec Latex Semi-Gloss Enamel No. 276: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).

2.7 INTERIOR WOOD STAINS AND VARNISHES

A. Open-Grain Wood Filler: Factory-formulated paste wood filler applied at spreading rate recommended by manufacturer.
1. Benjamin Moore; Benwood Paste Wood Filler No. 238.

B. Interior Wood Stain: Factory-formulated alkyd-based penetrating wood stain for interior application applied at spreading rate recommended by manufacturer.
1. Benjamin Moore; Benwood Penetrating Stain No. 234.

C. Clear Sanding Sealer: Factory-formulated fast-drying alkyd-based clear wood sealer applied at spreading rate recommended by manufacturer.
1. ICI Dulux Paints; 1902-0000 WoodPride Interior Satin Polyurethane Varnish.

D. Interior Alkyd- or Polyurethane-Based Clear Satin Varnish: Factory-formulated alkyd- or polyurethane-based clear varnish.
1. Benjamin Moore; Benwood Interior Wood Finishes Polyurethane Finishes Low Lustre No. 435.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
3. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
2. Cementitious Materials: Prepare concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils,

and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

a) Use abrasive blast-cleaning methods if recommended by paint manufacturer.
b) Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
c) Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.
3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
a) Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
b) Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters,
cases, and paneling.
c) If transparent finish is required, backprime with spar varnish.
d) Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
e) Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
a) Touch up bare areas and shop-applied prime coats that have been damaged.
Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.

D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Use only thinners approved by paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
3. Provide finish coats that are compatible with primers used.
4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
9. Sand lightly between each succeeding enamel or varnish coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
2. Omit primer over metal surfaces that have been shop primed and touchup painted.
3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

F. Mechanical items to be painted include, but are not limited to, the following:
1. Tanks that do not have factory-applied final finishes.
2. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
3. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

G. Electrical items to be painted include, but are not limited to, the following:
1. Panelboards.

H. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime

coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

I. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

J. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

K. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 FIELD QUALITY CONTROL

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when paint is being applied:
1. Owner will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.
2. Testing agency will perform appropriate tests as required.

3.5 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
1. After completing painting, clean paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.6 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.7 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
1. Semigloss Acrylic-Enamel Finish: Two finish coats over a rust-inhibitive primer.
a) Primer: Exterior ferrous-metal primer.
b) Finish Coats: Exterior semigloss acrylic enamel.

3.8 INTERIOR PAINT SCHEDULE

A. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
1. Eggshell Acrylic-Enamel Finish: Two finish coats over a primer.

a) Primer: Interior gypsum board primer.
b) Finish Coats: Interior eggshell acrylic enamel.
2. Flat Acrylic-Enamel Finish: Two finish coats over a primer.
a) Primer: Interior gypsum board primer.
b) Finish Coats: Interior Flat acrylic enamel.

B. Ferrous Metal: Provide the following finish systems over ferrous metal:

1. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.

a) Primer: Interior ferrous-metal primer.

b) Finish Coats: Interior semigloss acrylic enamel. END OF SECTION

SECTION 10 43 40 - PANEL SIGNAGE

1 GENERAL

A. RELATED DOCUMENTS

1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. SUMMARY

1 Section Includes: a Panel signs.
b Illuminated panel signs.
c Room-identification signs.
d Field-applied, vinyl-character signs.

2 Related Requirements:
a Section 15076 "Identification for Plumbing Piping and Equipment" for labels, tags, and nameplates for plumbing systems and equipment.
b Section 15077 "Identification for HVAC Piping and Equipment" for labels, tags, and nameplates for HVAC systems and equipment.
c Section 16075 "Electrical Identification" for labels, tags, and nameplates for electrical equipment.
d Section 16511 "Interior Lighting" for illuminated, self-luminous, and photo luminescent exit sign units.

C. ALLOWANCES

1 Allowances for signage room-identification signs are specified in Section 01210 "Allowances."

D. DEFINITIONS

1 Accessible: In accordance with the accessibility standard.

2 Illuminated: Illuminated by lighting source integrally constructed as part of the sign unit.

E. COORDINATION

1 Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

2 Furnish templates for placement of electrical service embedded in permanent construction by other installers

F. ACTION SUBMITTALS

1 Product Data: For each type of product.

2 Shop Drawings: For panel signs.

a Include fabrication and installation details and attachments to other work.
b Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
c Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.
d Show locations of electrical service connections.
e Include diagrams for power, signal, and control wiring.

3 Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.

a Include representative Samples of available typestyles and graphic symbols.

4 Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

a Panel Signs: Full-size Sample.
b Room-Identification Signs: Full-size Sample.
c Field-Applied, Vinyl-Character Signs: Full-size Sample of characters on glass.
d Variable Component Materials: Full-size Sample of each base material, character (letter, number, and graphic element) in each exposed color and finish not included in Samples above.
e Exposed Accessories: Full-size Sample of each accessory type.

5 Sign Schedule: Use same designations specified or indicated on Drawings or in a sign schedule.

6 Delegated-Design Submittal: For signs indicated in "Performance Requirements" Article.

a Include structural analysis calculations for signs indicated to comply with design loads; signed and sealed by the qualified professional engineer responsible for their preparation.

G. INFORMATIONAL SUBMITTALS

1 Qualification Data: For ***manufacturer***.

2 Sample Warranty: For special warranty.

H. CLOSEOUT SUBMITTALS

1 Maintenance Data: For signs to include in maintenance manuals.

I. QUALITY ASSURANCE

1 Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

J. FIELD CONDITIONS

1 Field Measurements: Verify locations of anchorage devices and electrical service embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

K. WARRANTY

1 Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1 Failures include, but are not limited to, the following:

a Deterioration of finishes beyond normal weathering. b Deterioration of embedded graphic image.
c Separation or delamination of sheet materials and components.

2 Warranty Period: ***Five*** years from date of Substantial Completion.

2 PRODUCTS

A. PANEL SIGNS, GENERAL

B. PERFORMANCE REQUIREMENTS

1 Delegated Design: Engage a qualified professional engineer, as defined in Section 01400 "Quality Requirements," to design sign structure and anchorage of illuminated panel sign type(s) to withstand design loads as indicated on Drawings.

2 Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.

a Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

3 Accessibility Standard: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for signs.

4 Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. SIGNS

1 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2 Basis-of-Design Product: Subject to compliance with requirements, provide product indicated or comparable product by one of the following:

1 Ace Sign Systems, Inc.
2 Advance Corporation; Braille-Tac Division.
3 Allen Industries, Inc.
4 Allen Markings International.
5 APCO Graphics, Inc.
6 ASE, Inc.
7 ASI Sign Systems, Inc.
8 Best Sign Systems Inc.
9 Bunting Graphics, Inc.
10 Clarke Systems.
11 Diskey Sign Company.
12 Fossil Industries, Inc.
13 InPro Corporation.
14 Mohawk Sign Systems.

15 Nelson-Harkins Industries.
16 Poblocki Sign Company, LLC.
17 Seton Identification Products.
18 Supersine Company (The); Division of Stamp-Rite, Inc.
19 Vista System.
20 Vomar Products, Inc.

3 Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1 Basis-of-Design Product: Indicated on Drawings.
2 Illuminated Panel Sign: Backlighted construction with LED lighting including transformers, insulators, and other accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from sign surfaces as needed to illuminate evenly.

a Power: As indicated on electrical Drawings.

3 Laminated-Sheet Sign: Photopolymer face sheet with raised graphics laminated to acrylic backing sheet to produce composite sheet.

a Composite-Sheet Thickness: Manufacturer's standard for size of sign. b Surface-Applied Graphics: Applied vinyl film.
c Subsurface Graphics: Reverse halftone or dot-screen image.

4 Sign-Panel Perimeter: Finish edges smooth. a Edge Condition: Square cut.
b Corner Condition in Elevation: Square.

5 Mounting: Manufacturer's standard method for substrates indicated with.

6 Surface Finish and Applied Graphics:
a Integral Acrylic Sheet Color: As selected by Architect from full range of industry colors.

7 Text and Typeface: Finish raised characters to contrast with background color, and finish Braille to match background color.
8 Flatness Tolerance: Sign panel shall remain flat or uniformly curved under installed conditions as indicated and within a tolerance of plus or minus 1/16 inch (1.5 mm) measured diagonally from corner to corner.

4 Room-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1 Basis-of-Design Product: Indicated on Drawings.
2 Laminated-Sheet Sign: Photopolymer face sheet with raised graphics laminated to acrylic backing sheet to produce composite sheet.

a Composite-Sheet Thickness: Manufacturer's standard for size of sign. b Surface-Applied Graphics: Applied vinyl film.
c Subsurface Graphics: Reverse halftone or dot-screen image.
d Color(s): As selected by Architect from manufacturer's full range.

3 Sign-Panel Perimeter: Finish edges smooth. a Edge Condition: As indicated.
b Corner Condition in Elevation: As indicated.

4 Mounting: Manufacturer's standard method for substrates indicated with.

5 Text and Typeface: . Finish raised characters to contrast with background color, and finish Braille to match background color.

D. FIELD-APPLIED, VINYL-CHARACTER SIGNS

1 Field-Applied, Vinyl-Character Sign: Prespaced characters die cut from 3- to 3.5-mil (0.076- to 0.089-mm) thick, weather-resistant vinyl film with release liner on the back and carrier film on the front for on-site alignment and application.

1 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2 Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

a Allen Markings International. b APCO Graphics, Inc.
c ASI Sign Systems, Inc. d Best Sign Systems Inc. e Mohawk Sign Systems.
f Nelson-Harkins Industries.
g Seton Identification Products.

3 Size: As indicated.
4 Substrate: As indicated.
5 Text and Font: As indicated.

E. PANEL-SIGN MATERIALS

1 Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

2 Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated and suitable for exterior applications.

F. ACCESSORIES

1 Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:

1 Use concealed fasteners and anchors unless indicated to be exposed.
2 Exposed Metal-Fastener Components, General:

a Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
b Fastener Heads: For nonstructural connections, use flathead or oval countersunk screws and bolts with tamper-resistant Allen-head spanner-head or one-way-head slots unless otherwise indicated.

3 Sign Mounting Fasteners:

a Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material or screwed into back of sign assembly, unless otherwise indicated.
b Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material or screwed into back of sign assembly, unless otherwise indicated.
c Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, installed in predrilled holes.

4 Inserts: Furnish inserts to be set by other trades into concrete or masonry work.

2 Adhesives: As recommended by sign manufacturer and with a VOC content of 70 g/L or less for adhesives used inside the weatherproofing system and applied on-site when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

3 Adhesives: As recommended by sign manufacturer and that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

4 Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch (1.14 mm) thick, with adhesive on both sides.

5 Hook-and-Loop Tape: Manufacturer's standard two-part tape consisting of hooked part on sign back and looped side on mounting surface.

6 Magnetic Tape: Manufacturer's standard magnetic tape with adhesive on one side.

7 Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

G. FABRICATION

1 General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1 Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2 Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3 Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
4 Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
5 Internally brace signs for stability and for securing fasteners.
6 Provide rebates, lugs, and brackets necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

2 Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

3 Signs with Changeable Message Capability: Fabricate signs to allow insertion of changeable messages as follows:

1 For snap-in changeable inserts beneath removable face sheet, furnish one suction or other device to assist in removing face sheet. Furnish initial changeable insert. Furnish two blank inserts for each sign for Owner's use.
2 For slide-in changeable inserts, fabricate slot without burrs or constrictions that inhibit function. Furnish initial changeable insert. Furnish two blank inserts for each sign for Owner's use.
3 For frame to hold changeable sign panel, fabricate frame without burrs or constrictions that inhibit function. Furnish initial sign panel. Subsequent changeable sign panels are by Owner.

4 Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1 Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color color unless otherwise indicated.

2 Stainless-Steel Brackets: Factory finish brackets to match sign background finish unless otherwise indicated.

H. GENERAL FINISH REQUIREMENTS

1 Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2 Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

3 Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

4 Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

3 EXECUTION

A. EXAMINATION

1 Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.

2 Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

3 Verify that anchor inserts are correctly sized and located to accommodate signs.

4 Verify that electrical service is correctly sized and located to accommodate signs.

5 Proceed with installation only after unsatisfactory conditions have been corrected.

B. INSTALLATION

1 General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1 Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2 Install signs so they do not protrude or obstruct according to the accessibility standard.
3 Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
4 Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

2 Room-Identification Signs and Other Accessible Signage: Install in locations on walls as indicated and according to accessibility standard.

3 Mounting Methods:

1 Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

a Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
b Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.

2 Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

a Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
b Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.

3 Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
4 Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position so that signage is correctly located and aligned.
5 Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.
6 Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.
7 Hook-and-Loop Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply sign component of two-part tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage; push to engage tape adhesive. Keep tape strips 0.250 inches away from edges to prevent visibility at sign edges when sign is initially installed or reinstalled. Apply substrate component of tape to substrate in locations aligning with tape on back of sign; push and rub well to fully engage tape adhesive to substrate.
8 Magnetic Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position.
9 Shim-Plate Mounting: Provide 1/8-inch- (3-mm-) thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other direct mounting methods are impractical. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach signs to plate using concealed studs method specified above.

4 Field-Applied, Vinyl-Character Signs: Clean and dry substrate. Align sign characters in final position before removing release liner. Remove release liner in stages, and apply and firmly press characters into final position. Press from the middle outward to obtain good bond without blisters or fishmouths. Remove carrier film without disturbing applied vinyl film.

5 Signs Mounted on Glass: Provide opaque sheet matching sign material and finish onto opposite side of glass to conceal back of sign.

C. ADJUSTING AND CLEANING

1 Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

2 Remove temporary protective coverings and strippable films as signs are installed.

3 On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

SECTION 10 52 20 - FIRE PROTECTION CABINETS

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 Fire-protection cabinets for the following: a Portable fire extinguishers.

B Related Requirements:

1 Section 10523 "Fire Extinguishers."

1.3 PREINSTALLATION CONFERENCE

A Preinstallation Conference: Conduct conference at Project site.

1 Review methods and procedures related to fire-protection cabinets including, but not limited to, the following:

a Schedules and coordination requirements.

1.4 ACTION SUBMITTALS

A Product Data: For each type of product. Show door hardware, cabinet type, trim style, and panel style. Include roughing-in dimensions and details showing recessed-, semirecessed-, or surface-mounting method and relationships of box and trim to surrounding construction.

1 Show location of knockouts for hose valves.

B Shop Drawings: For fire-protection cabinets. Include plans, elevations, sections, details, and attachments to other work.

C Samples: For each type of exposed finish required.

D Samples for Initial Selection: For each type of exposed finish required.

E Samples for Verification: For each type of exposed finish required, prepared on Samples 6 by 6 inches (150 by 150 mm) square.

F Product Schedule: For fire-protection cabinets. Indicate whether recessed, semirecessed, or surface mounted. Coordinate final fire-protection cabinet schedule with fire-extinguisher schedule to ensure proper fit and function. Use same designations indicated on Drawings.

1.5 CLOSEOUT SUBMITTALS

A Maintenance Data: For fire-protection cabinets to include in maintenance manuals.

1.6 COORDINATION

A Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B Coordinate sizes and locations of fire-protection cabinets with wall depths.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

1 Fire-Rated Fire-Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

2 Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 FIRE-PROTECTION CABINET

A Cabinet Type: Suitable for fire extinguisher.

1 Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
2 Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1 Fire-End & Croker Corporation.
2 GMR International Equipment Corporation.
3 Guardian Fire Equipment, Inc.
4 JL Industries, Inc.; a division of the Activar Construction Products Group.
5 Larsens Manufacturing Company.
6 Modern Metal Products, Division of Technico Inc.
7 Nystrom, Inc.
8 Potter Roemer LLC.
9 Strike First Corporation of America.

B Cabinet Construction: Nonrated.

C Cabinet Material: Cold-rolled steel sheet.

1 Shelf: Same metal and finish as cabinet. D Recessed Cabinet:

1 Trimless with Concealed Flange: Surface of surrounding wall finishes flush with exterior finished surface of cabinet frame and door, without overlapping trim attached to cabinet. Provide recessed flange, of same material as box, attached to box to act as drywall bead.

2 Trimless with Hidden Flange: Flange of same metal and finish as box overlaps surrounding wall finish and is concealed from view by an overlapping door.
3 Exposed Flat Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).

E Cabinet Trim Material: Same material and finish as door. F Door Material: Steel sheet.

G Door Style: Vertical duo panel with frame. G Door Glazing: Tempered float glass (clear).

H Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.

1 Provide manufacturer's standard.
2 Provide manufacturer's standard hinge permitting door to open 180 degrees. I Accessories:

1 Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
2 Break-Glass Strike: Manufacturer's standard metal strike, complete with chain and mounting clip, secured to cabinet.
3 Lettered Door Handle: One-piece, cast-iron door handle with the word "FIRE" embossed into face.
4 Door Lock: Cam lock that allows door to be opened during emergency by pulling sharply on door handle.
5 Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as directed by Architect.

1 Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."

1 Location: Applied to cabinet glazing.
2 Application Process: Decals.
3 Lettering Color: Black.

J Materials:

1 Cold-Rolled Steel: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

1 Finish: Baked enamel or powder coat.
2 Color: As selected by Architect from full range of industry colors and color densities.

2 Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class 1 (clear).

2.3 FABRICATION

A Fire-Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

1 Weld joints and grind smooth.
2 Provide factory-drilled mounting holes.

3 Prepare doors and frames to receive locks.
4 Install door locks at factory.

B Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles.

1 Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch (13 mm) thick.
2 Fabricate door frames of one-piece construction with edges flanged.
3 Miter and weld perimeter door frames.

C Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.4 GENERAL FINISH REQUIREMENTS

A Comply with NAAMM's AMP 500, "Metal Finishes Manual for Architectural and Metal Products," for recommendations for applying and designating finishes.

B Protect mechanical finishes on exposed surfaces of fire-protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

C Finish fire-protection cabinets after assembly.

D Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine roughing-in for cabinets to verify actual locations of piping connections before cabinet installation.

B Examine walls and partitions for suitable framing depth and blocking where recessed cabinets will be installed.

C Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A Prepare recesses for recessed fire-protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

A General: Install fire-protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

1 Fire-Protection Cabinets: 54" above finished floor to top of cabinet. B Fire-Protection Cabinets:

Fasten cabinets to structure, square and plumb.

1 Unless otherwise indicated, provide recessed fire-protection cabinets. If wall thickness is inadequate for recessed cabinets, provide semirecessed fire-protection cabinets.
2 Provide inside latch and lock for break-glass panels.
3 Fasten mounting brackets to inside surface of fire-protection cabinets, square and plumb.
4 Fire-Rated Cabinets:

a Install cabinet with not more than 1/16-inch (1.6-mm) tolerance between pipe OD and knockout OD. Center pipe within knockout.
b Seal through penetrations with firestopping sealant as specified in Section 07841 "Through-Penetration Firestop Systems."

C Identification: Apply ***decals*** at locations indicated.

3.4 ADJUSTING AND CLEANING

A Remove temporary protective coverings and strippable films, if any, as fire-protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C On completion of fire-protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D Touch up marred finishes, or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire- protection cabinet and mounting bracket manufacturers.

E Replace fire-protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 10 52 30 - FIRE EXTINGUISHERS

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 portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.

B Contractor-Furnished Material: Hand-carried fire extinguishers. C Related Requirements:

1 Section 10522 "Fire Protection Cabinets."

1.3 PREINSTALLATION MEETINGS

A Preinstallation Conference: Conduct conference at Project site.

1 Review methods and procedures related to fire extinguishers including, but not limited to, the following:

a Schedules and coordination requirements.

1.4 ACTION SUBMITTALS

A Product Data: For each type of product. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.

B Product Schedule: For fire extinguishers. Coordinate final fire-extinguisher schedule with fire-protection cabinet schedule to ensure proper fit and function. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

A Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.

1.7 COORDINATION

A Coordinate type and capacity of fire extinguishers with fire-protection cabinets to ensure fit and function.

1.8 WARRANTY

A Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

2 Failures include, but are not limited to, the following:

a Failure of hydrostatic test according to NFPA 10. b Faulty operation of valves or release levers.

3 Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1 Provide fire extinguishers approved, listed, and labeled by FM Global.

2.2 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A Fire Extinguishers: Type, size, and capacity for each fire-protection cabinet and mounting bracket indicated.

1 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2 Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

a Amerex Corporation. b Ansul Incorporated.
c Badger Fire Protection.
d Buckeye Fire Equipment Company. e Fire End & Croker Corporation.
f Guardian Fire Equipment, Inc.
g JL Industries, Inc.; a division of the Activar Construction Products Group. h Kidde Residential and Commercial Division; Subsidiary of Kidde plc.
i Larsens Manufacturing Company. j Moon American.
k Nystrom Building Products.
l Pem All Fire Extinguisher Corp.

m Potter Roemer LLC.
n Pyro-Chem; Tyco Safety Products. o Strike First Corporation of America.

3 Valves: Manufacturer's standard.
4 Handles and Levers: Manufacturer's standard.
5 Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B, and bar coding for documenting fire-extinguisher location, inspections, maintenance, and recharging.

B Multipurpose Dry-Chemical Type in Steel Container: UL-rated 2-A:10-B:C, 5-lb (2.3-kg) nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.

C Clean-Agent Type in Steel Container: UL-rated 2-A:10-B:C, 14-lb (6.4-kg) nominal capacity, with HFC blend agent and inert material in enameled-steel container; with pressure-indicating gage.

PART 3 - EXECUTION

3.1 EXAMINATION

A Examine fire extinguishers for proper charging and tagging.

1 Remove and replace damaged, defective, or undercharged fire extinguishers. B Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A General: Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.

C Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION

SECTION 22 00 50 - BASIC PLUMBING MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Valves and fittings.

B. Access Doors.

C. Insulation.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. This Section is a part of each Division 22 Section.

1.3 ADDITIONAL REQUIREMENTS

A. Furnish and install any incidental work not shown or specified which is necessary to provide a complete and workable system.

B. Make all temporary connections required to maintain services during the course of this Contract without additional cost to the Owner. Notify the Owner seven days in advance before disturbing any service.

1.4 REFERENCED STANDARDS

A. Where material or equipment is specified to conform to referenced standards, it shall be assumed that the most recent edition of the standard in effect at the time of bid shall be used.

1. CSA – Canadian Standards Association International
2. ANSI - American National Standards Institute
3. ASTM - American Society for Testing and Materials
4. CCR - California Code of Regulations

a. Title 8 - Division of Industrial Safety, Subchapter 7; General Industry Safety Orders, Articles 31 through 36

5. NCPWB - National Certified Pipe Welding Bureau
6. CEC - California Electrical Code
7. NEMA - National Electrical Manufacturers' Association
8. NFPA - National Fire Protection Association
9. OSHA - Occupational Safety and Health Act
10. UL - Underwriters' Laboratories, Inc.

1.5 DRAWINGS

A. Examine Contract Documents prior to bidding of work and report discrepancies in writing to Architect.

B. Contractor shall visit Project site and examine existing conditions in order to become familiar with Project scope. Verify dimensions shown on Drawings at Project site. Bring discrepancies to the attention of Architect. Failure to examine Project site shall not constitute basis for claims for additional work because of lack of knowledge or location of hidden conditions that affect Project scope.

C. Drawings showing location of equipment and materials are diagrammatic and job conditions will not always permit installation in location shown. The Plumbing Drawings show general arrangement of equipment and materials, etc., and shall be followed as closely as existing conditions, actual building construction, and work of other trades permit.

1. Architectural and Structural Drawings shall be considered part of the Work. These Drawings furnish Contractor with information relating to design and construction of the Project. Architectural Drawings take precedence over Plumbing Drawings.
2. Because of the small scale of Plumbing Drawings, not all offsets, fittings, and accessories required are shown. Investigate structural and finish conditions affecting the Work and arrange Work accordingly. Provide offsets, fittings, and accessories required to meet conditions. Inform Architect immediately when job conditions do not permit installation of equipment and materials in the locations shown. Obtain the Architects approval prior to relocation of equipment and materials.
3. Relocate equipment and materials installed without prior approval of the Architect. Remove and relocate equipment and materials at Contactors' expense upon Architects' direction.
4. Minor changes in locations of equipment, piping, etc., from locations shown shall be made when directed by the Architect at no additional cost to the Owner providing such change is ordered before such items of work, or work directly connected to same are installed and providing no additional material is required.

D. Execute work mentioned in Specifications and not shown on Drawings, or vice versa, the same as if specifically mentioned or shown in both.

1.6 REQUIREMENTS OF REGULATORY AGENCIES

A. The publications listed below form part of this specification; comply with provisions of these publications except as otherwise shown or specified.
1. California Building Code, 2013
2. California Electrical Code, 2013
3. California Energy Code, 2013
4. California Fire Code, 2013
5. California Green Building Standards Code, 2013
6. California Mechanical Code, 2013
7. California Plumbing Code, 2013
8. California Code of Regulations, Title 24
9. California Health and Safety Code
10. CAL-OSHA
11. California State Fire Marshal, Title 19 CCR
12. National Fire Protection Association
13. Occupational Safety and Health Administration
14. Other applicable state laws

B. Nothing in Drawings or specifications shall be construed to permit work not conforming to these codes, or to requirements of authorities having jurisdiction. It is not the intent of Drawings or specifications to repeat requirements of codes except where necessary for clarity.

C. Comply with State of California 2013 Energy Code for all systems, equipment, and construction.

D. When Contract Documents differ from governing codes, furnish and install larger size or higher standards called for without extra charge.

E. No material installed as part of this Work shall contain asbestos.

1.7 FEES AND PERMITS

A. Obtain and pay for all permits and service required in installation of this work; arrange for required inspections and secure approvals from authorities having jurisdiction. Comply with requirements of Division 01.

B. Arrange for utility connections and pay charges incurred, including excess service charges.

1.8 FRAMING, CUTTING AND PATCHING

A. Special framing, recesses, chases and backing for Work of this Section, unless otherwise specified, are covered under other Specification Sections.

B. Contractor is responsible for placement of pipe sleeves, hangers, inserts, supports, and location of openings for the Work.

C. Cutting, patching, and repairing of existing construction to permit installation of equipment, and materials is the responsibility of Contractor. Repair or replace damage to existing work with skilled mechanics for each trade.

D. Cut existing concrete construction with a concrete saw. Do not utilize pneumatic devices.

E. Core openings through existing construction for passage of new piping and conduits. Cut holes of minimum diameter to suit size of pipe and associated insulation installed. Coordinate with building structure, and obtain Structural Engineer's approval prior to coring through existing construction.

1.9 SUBMITTALS

A. Submittal packages may be submitted via email as PDF electronic files, or as printed packages. PDFs shall be legible at actual size (100 percent). Provide seven copies of printed submittal packages.

B. Provide submittal of materials proposed for use as part of this Project. Product names in Specifications and on Drawings are used as standards of quality. Furnish standard items on specified equipment at no extra cost to the Contract regardless of disposition of submittal data. Other materials or methods shall not be used unless approved in writing by Architect. Architect's review will be required even though "or equal" or synonymous terms are used. Refer to Division 01 for complete instructions.

1. Partial or incomplete submittals will not be considered.
2. Quantities are Contractor's responsibility and will not be reviewed.
3. Provide materials of the same brand or manufacturer for each class of equipment or material.
4. Identify each item by manufacturer, brand, trade name, number, size, rating, or other data necessary to properly identify and review materials and equipment. Words "as specified" are not sufficient identification.
5. Identify each submittal item by reference to items' Specification Section number and paragraph, by Drawing and detail number, and by unit tag number.
6. Organize submittals in same sequence as in Specification Sections.

7. Show physical arrangement, construction details, finishes, materials used in fabrications, provisions for piping entrance, access requirements for installation and maintenance, physical size, mechanical characteristics, foundation and support details, and weight.

a. Submit Shop Drawings, performance curves, and other pertinent data, showing size and capacity of proposed materials.
b. Specifically indicate, by drawn detail or note, that equipment complies with each specifically stated requirement of Contract Documents.
c. Drawings shall be drawn to scale and dimensioned (except schematic diagrams).
Drawings may be prepared by vendor but must be submitted as instruments of Contractor, thoroughly checked and signed by Contractor before submission to Architect for review.
d. Catalog cuts and published material may be included with supplemental scaled drawings.

C. Review of submittals will be only for general conformance with design concept and general compliance with information given in Contract Documents. Review will not include quantities, dimensions,

weights or gauges, fabrication processes, construction methods, coordination with work of other trades, or construction safety precautions, which are sole responsibility of Contractor. Review of a component of an assembly does not indicate acceptance of an assembly. Deviations from Contract Documents not clearly identified by Contractor are Contractor's responsibility and will not be reviewed by Architect.

D. Within reasonable time after award of contract and in ample time to avoid delay of construction, submit to Architect Shop Drawings or submittals on all items of equipment and materials provided. Provide submittal in at least seven copies and in complete package.

1. Shop Drawings and submittals shall include Specification Section, Paragraph number, and Drawing unit symbol or detail number for reference. Organize submittals into booklets for each Specification section and submit in loose-leaf binders with index. Deviations from the Contract Documents shall be prominently displayed in the front of the submittal package and referenced to the applicable Contract requirement.

E. Furnish to the Project Inspector complete installation instructions on material and equipment before starting installation.

F. Product Data for California Green Building Standards Code Compliance: For adhesives and sealants, including primers, documentation of compliance including printed statement of VOC content and chemical components.

G. Provide product data for insulation products, including insulation, insulation facings, jackets, adhesives, sealants, and coatings, indicating compliance with requirement that these products contain less than 0.1 percent (by mass) polybrominated diphenyl ethers (PBDEs) in penta, octa, or deca formulations.

H. Pipe, pipe or plumbing fittings, fixtures, solder and flux installed in a system providing water for human consumption shall comply with lead free requirements of the California Health and Safety Code Section 116875. Provide submittal information for products third-party certified by an approved laboratory as complying with California Health and Safety Code Section 116875.

1.10 SUBSTITUTIONS

A. Refer to Division 01 for complete instructions. Requirements given below are in addition to or are intended to amplify Division 01 requirements. In the case of conflict between requirements given herein and those of Division 01, Division 01 requirements shall apply.

B. It is the responsibility of Contractor to assume costs incurred because of additional work and or changes required to incorporate proposed substitute into the Project. Refer to Division 01 for complete instructions.

C. Substitutions will be interpreted to be all manufacturers other than those specifically listed in the Contract Documents by brand name, model or catalog number.

D. Only one request for substitution will be considered for each item of equipment or material.

E. Substitution requests shall include the following:

1. Reason for substitution request.
2. Complete submittal information as described herein; see "Submittals."
3. Coordinated scale layout drawings depicting position of substituted equipment in relation to other work, with required clearances for operation, maintenance and replacement.
4. List optional features required for substituted equipment to meet functional requirements of the system as indicated in Contract Documents.
5. Explanation of impact on connected utilities.

6. Explanation of impact on structural supports.

F. Installation of reviewed substitution is the Contractors' responsibility. Any mechanical, electrical, structural, or other changes required for installation of reviewed substituted equipment or material must be made by the Contractor without additional cost to the Owner. Review by the Architect of the substituted equipment or material, including dimensioned Drawings will not waive these requirements.

G. Contractor may be required to compensate the Architect for costs related to substituted equipment or material.

1.11 SITE CONDITIONS

A. Information on Drawings relative to existing conditions is approximate. Deviations from Drawings necessary during progress of construction to conform to actual conditions shall be approved by the Architect and shall be made without additional cost to the Owner. The Contractor shall be held responsible for damage caused to existing services. Promptly notify the Architect if services are found which are not shown on Drawings.

1.12 EXISTING MATERIALS

A. Remove existing equipment, piping, wiring, construction, etc., which interferes with Work of this Contract. Promptly return to service upon completion of work in the area. Replace items damaged by Contractor with new material to match existing.

B. Removed materials which will not be re-installed and which are not claimed by Owner shall become property of Contractor and shall be removed from Project site. Consult Owner before removing any material from Project site. Carefully remove materials claimed by Owner to prevent damage and deliver to Owner-designated storage location.

C. Existing piping and wiring not reused and are concealed in building construction may be abandoned in place and all ends shall be capped or plugged. Remove unused piping and wiring exposed in Equipment Rooms or occupied spaces. Material shall be removed from Project premises. Disconnect power, water, gas, pump or any other active energy source from piping or electrical service prior to abandoning in place.

D. Existing piping, ductwork, and equipment modified or altered as part of this Work shall comply with the most recent applicable code requirements.

1.13 WARRANTY

A. Refer to Division 01 for warranty requirements, including effective date of warranty. Refer to specific items of equipment specified herein for warranty duration if different from that specified in Division 01.

B. Repair or replace defective work, material, or part that appears within the warranty period, including damage caused by leaks.

C. On failure to comply with the above warranty within a reasonable length of time after notification is given, the Architect/Owner shall have the repairs made at the Contractor's expense.

1.14 RECORD DRAWINGS

A. Refer to Division 01, Record Documents, for requirements governing Work specified herein.

B. Upon completion of the work, deliver to Architect the following:

1. Originals of drawings showing the Work exactly as installed.
2. One complete set of reproducible drawings showing the Work exactly as installed.
3. One compact disc with complete set of drawings in PDF format showing the Work exactly as installed.

C. Provide Contractor's signature, verifying accuracy of record drawings.

D. Obtain the signature of the Project Inspector for all record drawings.

1.15 DELIVERY AND STORAGE

A. Protect equipment and piping delivered to Project site from weather, humidity and temperature variations, dirt, dust and other contaminants.

1.16 COORDINATION

A. General:

1. Coordinate Work in this Section with trades covered in other Specifications Sections to provide a complete, operable and sanitary installation of the highest quality workmanship.

B. Electrical Coordination:

1. Refer to the Electrical Drawings and Specifications, Division 26, for service voltage and power feed wiring for equipment specified under this section. Contractor has full responsibility for the following items of work:

a. Review the Electrical Drawings and Division 26 Specifications to verify that electrical services provided are adequate and compatible with equipment requirements.
b. If additional electrical services are required above that indicated on Electrical Drawings and in Division 26, such as more control interlock conductors, larger feeder, or separate 120 volt control power source, include cost to furnish and install additional electrical services as part of the bid.

c. Prior to proceeding with installation of additional electrical work, submit detailed drawings indicating exact scope of additional electrical work.

C. Mechanical Coordination:

1. Arrange for pipe spaces, chases, slots and openings in building structure during progress of construction, to accommodate mechanical system installation.
2. Coordinate installation of supporting devices. Set sleeves in poured-in-place concrete and other structural components during progress of construction.
3. Coordinate requirements for access panels and doors for mechanical items requiring access where concealed behind finished surfaces. Access panels and doors are specified in Division 08 Section "Access Doors and Frames."

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials or equipment of the same type shall be of the same brand wherever possible. All materials shall be new and in first class condition.

B. All sizes, capacities, and efficiency ratings shown are minimum, except that gas capacity is maximum available.

C. Refer to Sections 22 10 00 and 23 80 00 for specific system piping materials.

2.2 VALVES AND FITTINGS FOR POTABLE WATER SYSTEMS

A. General:

1. Provide valves and fittings conforming to lead-free requirements of California Health and Safety Code Section 116875.

a. Provide valves listed to NSF/ANSI 61-G or NSF/ANSI 372 for valve materials for potable-water service.

1) Exception: Main distribution gate valves above 1-1/2 inches located underground outside building are not required to conform lead-free requirements of California Health and Safety Code Section 116875.

B. Ball Valves:

1. 2 inches and smaller: 600 psi CWP, cast bronze or brass body, full port, two piece, threaded ends, and reinforced PTFE seal, conforming to MSS SP-110. Nibco T-685-80- LF, Milwaukee UPBA400, Apollo 77C-LF10, Kitz 868, or equal.

2.3 JOINING MATERIALS

A. Refer to Division 22 and 23 piping sections for special joining materials not listed below.

B. Solder Filler Metals: ASTM B 32, 100 percent lead free alloys. Include water-flushable flux according to ASTM B813.

C. Brazing Filler Metals: AWS A5.8, BCup-5 Series, copper-phosphorus unless otherwise indicated. Sil-Fos 15, or equal.

2.4 ACCESS DOORS

A. Where floors, walls, or ceilings must be penetrated for access to mechanical equipment, provide access doors, 14 inch by 14 inch minimum size in usable opening. Where entrance of a serviceman may be required, provide 20 inch by 30 inch minimum usable opening. Locate access doors/panels for non-obstructed and easy reach.

1. All access doors less than 7'-0" above floors and exposed to public access shall have keyed locks.

B. Access doors shall match those supplied in Division 08 in all respects, except as noted herein.

C. Provide stainless steel access doors for use in toilet rooms, shower rooms, kitchens and other damp areas. Provide steel access doors with prime coat of baked-on paint for all other areas.

D. Do not locate access doors in highly visible public areas such as lobbies, waiting areas, and primary entrance areas. Coordinate with the Architect when access is required in these areas.

E. Where specific information or details relating to access panels different from the above is shown or given on the Drawings or other Divisions of work, then that information shall supersede this specification.

F. Manufacturers: Subject to compliance with requirements, available manufacturers offering products which may be incorporated into the Work include Milcor, Karp, Nystrom, or Cesco, equal to the following:

1. Milcor

a. Style K (plaster)
b. Style DW (gypsum board)
c. Style M (Masonry)
d. Style "Fire Rated" where required

2.5 PIPE IDENTIFICATION

A. Identify each piping system and indicate the direction of flow by means of Seton, Inc., Marking Services Inc., Reef Industries, Inc., or equal, pre-tensioned, coiled semi-rigid plastic pipe labels formed to circumference of pipe, requiring no fasteners or adhesive for attachment to pipe.

B. The legends and flow arrows shall conform to ASME A13.1.

2.6 INSULATION WORK

A. General:

1. Insulation products, including insulation, insulation facings, jackets, adhesives, sealants and coatings shall not contain polybrominated diphenyl ethers (PBDEs) in penta, octa, or deca formulations in amounts greater than 0.1 percent (by mass).
2. Adhesives and sealants shall comply with testing and product requirements of South Coast Air Quality Management District, Rule 1168.
3. The term "piping" used herein includes pipe, valves, strainers and fittings.
4. Apply insulating cement to fittings, valves and strainers and trowel smooth to the thickness of adjacent covering. Cover with jacket to match piping. Extend covering on valves up to the bonnet. Leave strainer cleanout plugs accessible.
5. Provide pre-formed PVC valve and fitting covers.

6. Provide Calcium Silicate rigid insulation and sheet metal sleeve, 18 inch minimum length at each pipe hanger. Seal ends of insulation to make vapor tight with jacket.
7. Urethane insulation will not be allowed above ground or on hot water piping.
8. Test insulation, jackets and lap-seal adhesives as a composite product and confirm flame spread of not more than 25 and a smoke developed rating of not more than 50 when tested in accordance with UL723 or ASTM E84.
9. Clean thoroughly, test and have approved, all piping and equipment before installing insulation and/or covering.
10. Repair all damage to existing pipe and equipment insulation whether or not caused during the work of this contract, to match existing adjacent insulation for thickness and finish, but conforming to flame spread and smoke ratings specified above.

B. Insulation of Piping:

1. Insulate domestic hot and tempered water with 1 inch thick 3-1/2# minimum density fiberglass with ASJ-SSL jacket for sizes up to and including 3/4 inches. For larger sizes, provide 1-1/2 inch thick 3-1/2# minimum density fiberglass insulation and ASJ-SSL jacket.

PART 3 - EXECUTION

3.1 PLUMBING DEMOLITION

A. Refer to Division 01 Sections "Cutting and Patching" and "Selective Demolition" for general demolition requirements and procedures.

B. Disconnect, dismantle and remove mechanical systems, equipment, and components indicated to be removed. Coordinate with all other trades.

1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping to remain with same or compatible piping material. Refrigerant system must be evacuated per EPA requirements.
3. Equipment to Be Removed: Drain down and cap remaining services and remove equipment.
4. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
5. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

3.2 ELECTRICAL REQUIREMENTS

A. Provide adequate working space around electrical equipment in compliance with the California Electrical Code. Coordinate the Mechanical Work with the Electrical Work to comply.

B. Furnish necessary control diagrams and instructions for the controls. Before permitting operation of any equipment which is furnished, installed, or modified under this Section, review all associated electrical work, including overload protection devices, and assume complete responsibility for the correctness of the electrical connections and protective devices. Motors

and control equipment shall conform to the Standards of the National Electrical Manufacturers' Association. All equipment and connections exposed to the weather shall be NEMA IIIR with factory-wired strip heaters in each starter enclosure and temperature control panel where required to inhibit condensation.

C. All line voltage and low voltage wiring and conduit associated with the Temperature Control System are included in this Section. Wiring and conduit shall comply with Division 26.

3.3 PIPING SYSTEM REQUIREMENTS

A. Drawing plans, schematic and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.

3.4 PRIMING AND PAINTING

A. Perform all priming and painting on the equipment and materials as specified herein.

B. Priming:

1. Exposed ferrous metals, including piping, which are not galvanized or factory-finished shall be primed. Black steel pipe exposed to the weather shall be painted one coat of Rust-Oleum #1069 primer for black steel piping or Rust-Oleum #5260, Kelly Moore, or equal, primer for galvanized piping.
2. Metal surfaces of items to be jacketed or insulated except piping shall be given two coats of primer unless furnished with equivalent factory finish. Items to be primed shall be properly cleaned by effective means free of rust, dirt, scale, grease and other deleterious matter and then primed with the best available grade of zinc rich primer. After erection or installation, all primed surfaces shall be properly cleaned of any foreign or deleterious matter that might impair proper bonding of subsequent paint coatings. Any abrasion

or other damage to the shop or field prime coat shall be properly repaired and touched up with the same material used for the original priming.

3. Where equipment is provided with nameplate data, the nameplate should be masked off prior to painting. When painting is completed, remove masking material.

C. See Painting Section for detailed requirements.

3.5 INSTALLATION OF VALVES

A. Install valves as indicated on Drawings and in the following locations:

1. Shutoff Valves: Install on inlet of each plumbing equipment item, and on inlet of each plumbing fixture, and elsewhere as indicated.
2. Drain Valves: Install on each plumbing equipment item located to completely drain equipment for service or repair. Install at base of each riser, at base of each rise or drop in piping system, and elsewhere indicated or required to completely drain potable water system.
3. Provide gate or globe valves on inlet and outlet of each water heater or pump.

B. General:

1. Valves shall be full line size unless indicated otherwise on Drawings.
2. Install horizontal valves with valve stem above horizontal, except butterfly valves.

3. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
4. Locate valves for easy access and provide separate support where necessary.
5. Install valves in position to allow full stem movement.
6. Install exposed polished or enameled connections with special care showing no tool marks or exposed threads.
7. Ball valves conforming to the paragraph "Ball Valves" may be used in lieu of gate valves for locations above grade for services 2-1/2 inches and smaller.
8. Valves 2-1/2 inches and smaller (except ball valves) in nonferrous water piping systems may be solder joint type with bronze body and trim.
9. Rigidly fasten hose bibbs, hydrants, fixture stops, compressed air outlets, and similar items to the building construction.

C. Valve Adjustment: Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

3.6 INSTALLATION OF PIPING SYSTEMS

A. At time of final connection, and prior to opening valve to allow pressurization of water and gas piping from existing systems, on site or off site, perform a pressure test to indicate static pressure of existing systems. If pressure on water piping is greater than 80 psi, or gas pressure is not as indicated on Contract Documents, inform Architect immediately. Do not allow piping systems to be pressurized without written consent of the Architect.

B. General:

1. All piping shall be concealed unless shown or otherwise directed. Allow sufficient space for ceiling panel removal.
2. Installation of piping shall be made with appropriate fittings. Bending of piping will not be accepted.
3. Install piping to permit application of insulation and to allow valve servicing.

4. Where piping or conduit is left exposed within a room, the same shall be run true to plumb, horizontal, or intended planes. Where possible, uniform margins are to be maintained between parallel lines and/or adjacent wall, floor, or ceiling surfaces.
5. Horizontal runs of pipes and/or electrical conduit suspended from ceilings shall provide for a maximum headroom clearance. The clearance shall not be less than 6'-6" without written approval from the Architect.
6. Close ends of pipe immediately after installation. Leave closure in place until removal is necessary for completion of installation.
7. Each piping system shall be thoroughly flushed and proved clean before connection to equipment.
8. Install exposed polished or enameled connections with special care showing no tool marks or threads at fittings.
9. Install horizontal valves with valve stem above horizontal.
10. Use reducing fittings; bushings shall not be allowed. Use eccentric reducing fittings wherever necessary to provide free drainage of lines and passage of air.
11. Verify final equipment locations for roughing-in.
12. Furnish and install anchors or thrust blocks on PVC water lines in the ground, at all changes in direction of piping, and at all connections or branches from mains 1-1/2 inch and larger. Form anchors or thrust blocks by pouring concrete between pipe and trench wall. Thrust blocks shall be of adequate size and so placed as to take thrusts created by maximum internal water pressure. Sizing and placement shall be per manufacturer's recommendations, CPC, and IAPMO installation standards. Anchor piping to building
construction.

13. Sanitary Sewer and Storm Drain: Grade piping inside building uniformly 1/4 inch per foot if possible but not less than 1/8 inch per foot. Run piping as straight as possible. Make piping connections between building piping and outside service pipe with cast iron reducers or increasers. Slope sewers uniformly between given elevations where invert elevations are shown.
14. Where piping is installed in walls within one inch of the face of stud, provide a 16 gauge sheet metal shield plate on the face of the stud. The shield plate shall extend a minimum of 1-1/2 inches beyond the outside diameter of the pipe.

C. Sleeves:

1. Install Adjus-to-Crete, Pipeline Seal and Insulator, or equal, pipe sleeves of sufficient size to allow for free motion of pipe, 24 gauge galvanized steel. The space between pipe and sleeves through floor slabs on ground, through outside walls above or below grade, through roof, and other locations as directed shall be caulked with oakum and mastic and made watertight. The space between pipe and sleeve and between sleeve and slab or wall shall be sealed watertight.
2. At Contractor's option, Link-Seal, Metraflex Metraseal, or equal, casing seals may be used in lieu of caulking. Wrap pipes through slabs on grade with 1 inch thick fiberglass insulation to completely isolate the pipe from the concrete.

D. Floor, Wall, and Ceiling Plates:

1. Fit all pipes with or without insulation passing through walls, floors, or ceilings, and all hanger rods penetrating finished ceilings with chrome-plated or stainless escutcheon plates.

E. Firestopping:

1. Pack the annular space between the pipe sleeves and the pipe through all floors and walls with UL listed fire stop, and sealed at the ends. All pipe penetrations shall be UL listed, Hilti, 3M Pro-Set, or equal.

a. Install fire caulking behind mechanical services installed within fire rated walls, to maintain continuous rating of wall construction.

2. Provide SpecSeal Systems UL fire rated sleeve/coupling penetrators for each pipe penetration or fixture opening passing through floors, walls, partitions or floor/ceiling assemblies. All Penetrators shall comply with UL Fire Resistance Directory (Latest Edition), and in accordance with Chapter 7, CBC requirements.
3. Sleeve penetrators shall have a built in anchor ring for waterproofing and anchoring into concrete pours or use the special fit cored hole penetrator for cored holes.
4. Copper and steel piping shall have SpecSeal plugs on both sides of the penetrator to reduce noise and to provide waterproofing.
5. All above Systems to be installed in strict accordance with manufacturer's instructions.
6. Alternate firestopping systems are acceptable if approved equal. However, any deviation from the above specification requires the Contractor to be responsible for determining the suitability of the proposed products and their intended use, and the Contractor shall assume all risks and liabilities whatsoever in connection therewith.

F. Hangers and Supports:

1. General: Support all equipment and piping so that it is firmly held in place by approved iron hangers and supports and special hangers as required. All components shall support weight of equipment and pipe, fluid, and pipe insulation based on spacing

between supports with minimum factor of safety of five based on ultimate strength of material used. Do not exceed manufacturer's load rating. Pipe attachments or hangers, of same size as pipe or tubing on which used, or nearest available. Rigidly fasten hose faucets, fixture stops, compressed air outlets, and similar items to the building construction. The Architect shall approve all hanger material before installation. Do not support piping with plumbers' tape, wire rope, wood, or other makeshift devices. Where building structural members do not match piping support spacing, provide all "bridging" support members as required firmly attached to building structural members in a fashion approved by the Structural Engineer.

a. Materials, design, and type numbers per Manufacturers' Standardization Society (MSS), Standard Practice (SP)-58.

2. All hanger components shall be provided by one manufacturer B-Line, Grinnell, Uni-Strut, Badger, or equal.
3. Hanger and Support Spacing:

a. Vertical piping support spacing: B-line #B3373 clamps attached to the pipe above each floor to rest on the floor. Provide with lead or Teflon liners on copper tubing. Provide additional support at base of cast iron risers and support at unsupported riser joints and horizontal offsets per 2007 Mason Industries Seismic Restraint Guidelines. Provide intermediate support for vertical piping, spaced at or within the following maximum limits.

Pipe Diameter	Steel Fluid	Steel Vapor	Copper Fluid	Copper Vapor	CPVC & PVC (Note 2)
1/2 - 1"	12	6	10	6	Base and Each Floor (Note 1)
1-1/4 - 2"	12	Each Floor	10	6	Base and Each Floor (Note 1)

2-1/2 - 3"	12	Each Floor	10	10	Base and Each Floor (Note 1)
Over 4"	12	Each Floor	10	10	Base and Each Floor (Note 1)

Note 1: Provide mid-story guides.
Note 2: For PVC piping, provide for expansion every 30 feet per IAPMO installation standard.

b. Vertical cast iron piping support spacing: Base and each floor not to exceed 15 feet.
c. Horizontal piping, hanger and support spacing: Locate hangers and supports at each change of direction, within one foot of elbow, and spaced at or within following maximum limits.

Pipe Diameter	Steel Fluid	Steel Vapor	Copper Fluid	Copper Vapor	CPVC & PVC

1/2 - 1"	6	6	5	6	3
1-1/4 - 2"	7	10	6	6	4
2-1/2 - 3"	10	10	10	10	4
Over 4"	10	10	10	10	4

d. Horizontal cast iron piping support spacing:

1) Support piping at every other joint for piping length of less than 4 feet.
2) For piping longer than 4 feet, provide support on each side of the coupling, within 18 inches of each joint.
3) Hanger shall not be installed on the coupling.
4) Provide support at each horizontal branch connection.
5) Provide sway brace at 40 foot maximum spacing for all suspended pipe with no-hub joints, except where a lesser spacing is indicated in the 2007 Mason Industries Seismic Restraint Guidelines. Provide a brace on each side of a change in direction of 90 degrees or more. Brace riser joints at each floor and at 15 foot maximum intervals.

4. Individually Suspended Piping:

a. Individually suspended piping: B-Line B3690 J-Hanger or B3100 Clevis, complete with threaded rod, or equal. All hangers on supply and return piping handling heating hot water or steam shall have a swing connector at point of support.

Pipe Size	Rod Size
2" and Smaller	3/8"
2-1/2" to 3-1/2"	1/2"
4" to 5"	5/8"
6"	3/4"

b. Trapeze Suspension: B-Line 1-5/8 inch width channel in accordance with manufacturer's published load ratings. No deflection to exceed 1/180 of a span.

c. Trapeze Supporting Rods: Shall have a safety factor of five; securely anchor to building structure.
d. Pipe Clamps and Straps: B-Line B2000, B2400; isolate copper pipe with two thicknesses of 2 inches wide 10-mil polyvinyl tape. Where used for seismic support systems, provide B-Line B2400 series pipe straps.
e. Concrete Inserts: B-line B22-I continuous insert or B2500 spot insert. Do not use actuated fasteners for support of overhead piping unless approved by Architect.
f. Steel Connectors: Beam clamps with retainers.

5. Support to Structure:

a. Steel Structure: Provide and install additional steel bracing as required to suit structure. Provide through bolts with length to suit requirements of the structural components. Burning or welding on any structural member may only be done if approved by the Architect.

6. Rubber Neoprene Pipe Isolators:

a. Pipe isolators shall comprise an internal rubber or neoprene material that isolates pipe from hanger and structure. Install at all piping located in acoustical walls. Refer to Architectural Drawings for location of acoustical walls.
b. Isolation material shall be either a rubber or neoprene material that prevents contact between the pipe and the structure. The rubber shall have between a 45 to 55 durometer rating and a minimum thickness of 1/2 inch.
c. Acceptable Suppliers:

1) Vertical runs: Acousto-Plumb or equal.
2) Horizontal runs: B-Line, Vibraclamp; Acousto-Plumb or equal.
7. Provide rigid insulation and a 12 inch long, 18 gauge galvanized sheet iron shield between the covering and the hanger whenever hangers are installed on the outside of the pipe covering.
8. Insulate copper tubing from ferrous materials and hangers with two thicknesses of 3 inch wide, 10 mil polyvinyl tape wrapped around pipe.
9. Provide a support or hanger close to each change of direction of pipe either horizontal or vertical and as near as possible to concentrated loads.
10. Suspend rods from concrete inserts with removable nuts where suspended from concrete decks. Power actuated inserts will not be allowed.

3.7 PIPE JOINTS AND CONNECTIONS

A. General:

1. Cutting: Cut pipe and tubing square, remove rough edges or burrs. Bevel plain ends of steel pipe.
2. Remove scale, slag, dirt and debris from inside and outside of pipe before assembly.
3. Boss or saddle type fittings or mechanically extracted tube joints will not be allowed.

B. Threaded Pipe: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply thread compound to external pipe threads: Rectorseal No. 5, Permatex No. 1, or equal.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.

C. Copper Pipe and Tubing (Except pneumatic control piping): All joints shall be brazed according to ASME Section IX, Welding and Brazing Qualifications, except domestic water piping 1-1/4 inches and smaller when not buried in the ground or concrete and type DWV plumbing piping may be soldered.

1. Soldered joints: Apply water-flushable flux to end of tube. Join copper tube and fittings according to ASTM B 828.

D. Cast Iron Soil Pipe:

1. No-Hub fittings shall be made with a torque wrench.
2. Hub joints shall be with Ty-Seal couplings.
3. Wrought iron, steel, or copper pipe shall have a ring or part of a coupling screwed on to form a spigot end if caulked into a joint.

4. Connect cast iron sewer piping to outside service pipe with cast iron or vitrified clay reducers or increasers as required. Caulking of smaller pipe into the larger without a reducer or increaser will not be permitted.

3.8 UNIONS AND FLANGES

A. Install Watts, Epco, Nibco, or equal, dielectric unions or flanges at points of connection between copper or brass piping or material and steel or cast iron pipe or material except in drain, waste, vent, or rainwater piping. Bushings or couplings shall not be used. Dielectric unions installed in potable water systems shall conform to the lead-free requirements of the California Health and Safety Code Section 116875.

B. Install unions in piping NPS 2" and smaller, and flanges in piping NPS 2-1/2" and larger whether shown or not at each connection to all equipment and tanks, and at all connections to all automatic valves, such as temperature control valves. Unions installed in potable water systems shall conform to the lead-free requirements of the California Health and Safety Code Section 116875.

C. Locate the unions for easy removal of the equipment, tank, or valve.

3.9 ACCESS DOOR

A. Furnish and install access doors wherever required whether shown or not for easy maintenance of mechanical systems; for example, at concealed valves, strainers, traps, cleanouts, dampers, motors, controls, operating equipment, etc. Access doors shall provide for complete removal and replacement of equipment.

3.10 PIPE IDENTIFICATION

A. Provide temporary identification of each pipe installed, at the time of installation. Temporary identification shall be removed and replaced with permanent identification as part of the work.

B. Apply the legend and flow arrow at all valve locations; at all points where the piping enters or leaves a wall, partition, cluster of piping or similar obstruction, at each change of direction and at approximately 20'-0" intervals on pipe runs. Variations or changes in locations and spacing may be made with the approval of the Architect. There shall be at least one marking in each room. Markings shall be located for maximum visibility from expected personnel approach.

C. Wherever two or more pipes run parallel, the markings shall be supplied in the same relative location on each.

D. Apply markings after painting and cleaning of piping and insulation is completed.

3.11 TESTS AND ADJUSTMENTS

A. Test the installations in accordance with the following requirements and all applicable codes:

1. Inspector of Record should witness all tests of piping systems.
2. Notify the Architect at least seven days in advance of any test.
3. All piping shall be tested at completion of roughing-in, or at other times as directed by the Architect.
4. Furnish all necessary materials, test pumps, gases, instruments and labor required for testing.
5. Isolate from the system all equipment that may be damaged by test pressure.

6. Make connections to existing systems with flanged connection. During testing of the new work, provide a slip-in plate to restrict test pressure to new systems only. Remove plate and complete connection to existing system at completion of testing.

a. Inspector of record shall witness final connection to system.

B. Test Schedule: No loss in pressure or visible leaks shall show after four hours at the pressures indicated.

Testing of Sanitary Sewer, Drain, Vent may be done in segments in order to limit pressure to within manufacturer's recommendations. Test to 10 feet above the highest point in the system.

System Tested	Test Pressure PSI	Test With
Sanitary Sewer, Drain, Vent	10 Ft. Hd.	Water
Condensate Drains	10 Ft. Hd.	Water
Domestic Water	125	Water

C. Perform operational tests under simulated or actual service conditions, including one test of complete plumbing installation with all fixtures and other appliances connected, and one test of complete installation of 48 hours each for heating and cooling with all equipment connected and operating.

D. Should any material or work fail in any of these tests, it shall be immediately removed and replaced for new material, and portion of the work replaced shall again be tested by Contractor at his own expense.

3.12 PRELIMINARY OPERATIONAL REQUIREMENTS AND TESTS

A. Prior to observation to determine final acceptance, put all mechanical systems into service and check that work required for that purpose has been done, including but not limited to the following condensed check list. Provide indexed report to tabulating the results of all work.
1. Flushing and chemical treatment of piping systems has been completed and water treatment equipment, where specified, is in operation.
2. Equipment labels, pipe marker labels, ceiling markers and valve tags are installed.

B. Review of Contractor's Tests:

1. All tests made by the Contractor or manufacturers' representatives are subject to observation and review by the Owner. Provide timely notice prior to start of each test, in order to allow for observation of testing. Upon the completion of all tests, provide a letter to confirm that all testing has been successful.

C. Test Logs:

1. Maintain test logs listing the tests on all mechanical systems showing dates, items tested, inspectors' names, remarks on success or failure of the tests.

D. Preliminary Operation:

1. The Owner reserves the right to operate portions of the plumbing system on a preliminary basis without voiding the guarantee.

END OF SECTION 22 00 50

SECTION 221000 - PLUMBING PIPING SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Pipe and fittings.

B. Water filters.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 22 00 50 Basic Plumbing Materials and Methods.

1.3 ADDITIONAL REQUIREMENTS

A. Furnish and install any incidental work not shown or specified which is necessary to provide a complete and workable system.

B. Coordinate all of work in this Section with all of the trades covered in other Sections of the Specifications to provide a complete, operable and sanitary installation of the highest quality workmanship.

C. All plumbing work required in the course of this contract shall be performed in strict accordance with all codes and regulations. Plumbing work done under this contract shall not adversely affect the operation of the existing plumbing systems. All materials shall be new and shall match existing.

1.4 DESCRIPTION OF WORK

A. Furnish and install all plumbing work indicated on the drawings and described herein.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of plumbing piping systems products, of types, materials, and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Contractor's Qualifications: Firm with at least 5 years of successful installation experience on projects with piping systems work similar to that required for project.

C. Requirements of Regulatory Agencies: The publications listed below form a part of this specification; comply with provisions of these publications except as otherwise shown or specified.

1. Plumbing Code Compliance: Comply with applicable portions of California Plumbing Code pertaining to selection and installation of plumbing materials and products.

a. NSF Compliance:

1) Pipe, tube, and fittings used in potable water systems intended to supply drinking water shall meet the requirements of NSF-61 2010a, "Drinking Water System Components – Health Effects."
2) Plastic potable water-service piping shall meet the requirements of NSF 14 2010, "Plastic Piping Components and Related Materials."

2. California Health and Safety Code Compliance: For products covered under the scope of HSC 116875 for potable water service. Products for potable water service shall be third- party certified by an approved laboratory as complying with California Health and Safety Code Section 116875.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for plumbing piping systems materials and products.

B. Record Drawings: At project closeout, submit Record Drawings of installed piping systems, in accordance with requirements of Division 01.

C. Maintenance Data: Submit maintenance data and parts lists for plumbing piping systems materials and products. Include this data, product data, shop drawings, and record drawings in Operation and Maintenance Manual; in accordance with requirements of Division 01.

D. Pipe, pipe or plumbing fittings, fixtures, solder and flux installed in a system providing water for human consumption shall comply with lead free requirements of the California Health and Safety Code Section 116875. Provide submittal information for products third-party certified by an approved laboratory as complying with California Health and Safety Code Section 116875.

1.7 JOB CONDITIONS

A. Cooperation with other trades: Coordinate Work of this Section with that of other Sections to ensure that Work is carried out in an orderly fashion.

B. Coordinate with other trades all equipment locations, pipe, duct and conduit runs, electrical outlets and fixtures, air inlets and outlets, and structural and architectural features. Provide information on location of piping and seismic bracing to all other trades as required for a completely coordinated project.

PART 2 - PRODUCTS

2.1 MATERIALS AND PRODUCTS

A. Provide piping materials and factory-fabricated piping products of sizes, types, pressure ratings, temperature ratings, and capacities as indicated. Provide materials and products complying with California Plumbing Code. Where more than one type of material or product is indicated, selection from materials or products specified is Contractor's option.

2.2 PIPE AND FITTINGS INSIDE BUILDINGS AND BELOW COVERED WALKS AND CORRIDORS

A. Drain and Waste Pipe Above Grade: Cast iron soil pipe and fittings, asphaltic coated, conforming to ASTM A888 and Cast Iron Soil Pipe Institute Standard (CISPI) 301 and so marked. Pipe and fittings shall be as manufactured by AB&I, Charlotte, Tyler Pipe, or equal. Pipe and fittings shall be the products of a single manufacturer. At Contractor's option, vertical

piping above floor from lavatories, sinks, and drinking fountains may be Schedule 40 galvanized steel pipe with black cast iron drainage fittings, or DWV copper pipe and fittings.

1. Joints above grade: No-Hub pipe conforming to ASTM A888 and CISPI 301. Couplings conforming to ASTM 1277 and CISPI 310, with stainless steel bands. Provide products by ANACO-Husky, Tyler, Ideal or equal. Provide sway brace at 20'-0" maximum spacing for suspended pipe with No-Hub joints. Provide a brace on each side of a change in direction of 90 degrees or more. Brace riser joints at each floor and at 15 foot maximum intervals (also see Specification Section 22 00 50).
a. Joints located over critical areas including food preparation, food storage, food serving, and eating areas shall be ANACO-Husky SD 4000, Clamp-All 125, or equal, meeting the requirements of FM 1680, SD Class I and ASTM C1540.

B. Vent Pipe:

1. 3 inch and larger: Cast iron soil pipe and fittings conforming to ASTM A888 and Cast Iron Soil Pipe Institute Standard 301 and so marked.
2. 2-1/2 inch and smaller: Schedule 40 galvanized steel pipe with black cast iron drainage fittings, or DWV copper pipe and fittings.
3. Vent pipe buried in ground and to 6 inches above ground: Cast iron soil pipe and fittings conforming to ASTM A888 and Cast Iron Soil Pipe Institute Standard 301 and so marked. Joints in cast iron vent pipe shall be the same as specified for cast iron waste pipe below ground.

C. Water Pipe (Tempered Water, Tempered Water Return, Hot Water, Hot Water Return and Cold Water): ASTM B88, Type L copper tubing, hard-temper, with wrought copper fittings. Provide full solder cup for all fittings. Capped or plugged outlets shall be Schedule 40 screwed brass. Water piping below slab: ASTM B88, Type K copper tubing, hard temper, with wrought copper fittings. At Contractor's option, pipe runs below slab having no branches may be ASTM B88, Type K annealed copper tubing without joints. See Section 22 00 50 for pipe protection requirements for below slab copper piping.

D. Condensate Drain Piping:

1. Inside buildings provide ASTM B88, Type L copper tubing and fittings. Provide Wye fittings with capped cleanout plug for tubing up to 1 inch size. Provide wrought or cast DWV fittings for sizes 1-1/4 inch and larger.
2. Connect condensate drains to mechanical equipment per equipment manufacturer's recommendations; provide P-trap where required. Slope piping to drain, with 1 inch in 10 foot minimum pitch. Provide di-electric couplings or unions at connections to dissimilar materials.
3. Where Drawings indicate installation of mechanical equipment on spring isolation rails or spring mounted curbs, provide threaded metal connector at mechanical equipment, Metraflex Model SST or BST, Unisource Mfg. Co. "V" connector, or equal, CSA listed for 4 inches of movement. Arrange flexible connection to insure drainage of condensate under all installation conditions, and arrange for support of flexible connection at each end of the connector, to insure alignment at all times.
4. Where condensate drain P-traps are required, install trap using Wye fitting on inlet and outlet of trap. Provide cap on top of each Wye, made removable for cleaning and inspection. Drill 1/8 inch diameter hole in cap at outlet of the trap to allow venting of the system. Minimum depth of trap should be 4 inches, or as recommended by the manufacturer in printed literature.
5. Provide cleanout tees or "Y" at each change in direction.

2.3 WATER FILTERS

A. Provide Cuno Incorporated, Aqua Pure model AP510, or equal, point of use water filters, conforming to lead-free requirements of California Health and Safety Code Section 116875, in locations indicated on Drawings.

1. Provide model AP517 filter cartridge at each location, with 5 micron rating and 2,000 gallon rating, to remove sediment, rust, scale and chlorine taste and odor from incoming water. 2 gallon per minute capacity.
2. Provide one spare cartridge for each unit provided. PART 3 - EXECUTION

3.1 INSPECTION

A. Examine areas and conditions under which plumbing piping systems are to be installed. Do not proceed with Work until unsatisfactory conditions have been corrected in manner acceptable to Contractor.

B. Make all arrangements for the utilities required. Pay all costs involved in obtaining the services including gas service and meter, water meter, pressure reducing valve, access boxes, street work. Connect to site utilities. Verify the location of all services. No extra cost will be allowed if services are not as shown.

C. Determine sanitary sewer and storm drain location and elevation at all points of connection before installing any piping. Notify Architect immediately if indicated grades cannot be maintained.

D. At time of final connection, and prior to opening valve to allow pressurization of water piping from existing systems, perform a pressure test to indicate static pressure of existing systems. If pressure on water piping is greater than 80 psi, inform Architect immediately. Do not allow piping systems to be pressurized without written consent of the Architect.

3.2 INSTALLATION OF WATER PIPING

A. Run all water piping generally level, free of traps or unnecessary bends, arranged to conform to the building requirements, and to suit clearance for other mechanical work such as ducts, flues, conduits, and other work. No piping shall be installed so as to cause unusual noise from the flow of water therein under normal conditions.

B. Install piping on room side of building insulation.

3.3 INSTALLATION OF SANITARY DRAINAGE SYSTEMS

A. Sewer Piping: Run all horizontal sanitary drain piping inside of building on a uniform grade of not less than 1/4 inch per foot unless otherwise noted or later approved. Unless otherwise noted on the plans, piping shall have invert elevations as shown and slope uniformly between given elevations.

B. Run all drainage piping as straight as possible and provide easy bends with long turns; make all offsets at an angle of 45 degrees or less.

C. Grade all vent piping so as to free itself quickly of any water condensation.

D. Where possible, join groups of vent risers together with one enlarged outlet through roof. Maintain minimum of 10 foot horizontal or 3 foot vertical clearance from air intakes.

E. Hubless Cast Iron Joints: Comply with coupling manufacturer's installation instructions.

3.4 SPARE PARTS

A. Furnish to Owner, with receipt, one valve key for each key operated hydrant, bibb, or faucet installed.

3.5 DOMESTIC WATER SYSTEM STERILIZATION

A. Clean and disinfect new or altered hot and cold water piping connected to domestic water systems using methods prescribed by the Health Authority. If the Health Authority does not prescribe methods, clean and disinfect new or altered hot and cold water piping using methods given in the California Plumbing Code.

1. A water treatment company that has a current state EPA license to apply disinfectant chlorine in potable water shall perform the procedure.

3.6 CARE AND CLEANING

A. Repair or replace broken, damaged, or otherwise defective parts, materials, and work. Leave entire work in condition satisfactory to Architect. At completion, carefully clean and adjust equipment, fixtures, and trim that are installed as part of this work. Remove labels from stainless steel sinks, except 316 stainless steel sink labels should be retained to confirm that the correct material has been provided. Leave systems and equipment in satisfactory operating condition.

3.7 OPERATION TEST

A. Test each piece of equipment to show that it will operate in accordance with indicated requirements.

3.8 CLEANING UP

A. Upon completion of Work remove materials, equipment, apparatus, tools, and the like, and leave premises clean, neat, and orderly.

END OF SECTION 22 10 00

SECTION 224000 - PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Water supplies and stops.

B. Plumbing fixture hangers and supports.

C. Refrigerator ice maker.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 22 00 50 Basic Plumbing Materials and Methods.

1.3 ADDITIONAL REQUIREMENTS

A. Furnish and install any incidental work not shown or specified which is necessary to provide a complete and workable system.

B. Coordinate all of work in this Section with all of the Trades covered in other Sections of the Specifications to provide a complete, operable and sanitary installation of the highest quality workmanship.

1.4 DESCRIPTION OF WORK

A. Furnish and install all plumbing work indicated on the Drawings and described herein.

1.5 QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of plumbing fixtures of the type, style and configuration required. All companies providing products with warranties must have been engaged in manufacturing of such products for as long as the warranty states.

B. Plumbing Fixture Standards: Comply with applicable portions of the following codes and requirements for all work in this section:

California Building Code – CBC California Plumbing Code – CPC California Health and Safety Code
American National Standards Institute - ANSI Federal Standards - F.S.
National Sanitary Foundation – NSF International

C. ANSI Standards: Comply with ANSI/NSF 61, "Drinking Water System Components – Health Effects."

D. PDI Compliance: Comply with standards established by Plumbing and Drainage Institute pertaining to plumbing fixture supports.

E. Americans with Disabilities Act (ADA).

F. California Health and Safety Code Compliance: For products covered under the scope of HSC 116875 for potable water service. Products for potable water service shall be third-party certified by an approved laboratory as complying with California Health and Safety Code Section 116875.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's specifications for plumbing fixtures and trim, including catalog cut of each fixture type and trim item furnished.

B. Maintenance Data: Submit maintenance data and parts lists for each fixture type and trim item, including instructions for care of finishes. Include this data in Operation and Maintenance Manual.

C. Pipe, pipe or plumbing fittings, fixtures, solder and flux installed in a system providing water for human consumption shall comply with lead free requirements of the California Health and Safety Code Section 116875. Provide submittal information for products third-party certified by an approved laboratory as complying with California Health and Safety Code Section 116875.

PART 2 - PRODUCTS

2.1 PLUMBING FIXTURES

A. General: Provide factory fabricated fixtures of type, style and material indicated. For each type fixture, provide fixture manufacturer's standard trim, carrier, seats, and valves as indicated by their published product information; either as designed and constructed, or as recommended by the manufacturer, and as required for a complete, installation. Where more than one type is dedicated, selection is Contractor's option; but, all fixtures of same type must be furnished by single manufacturer.

1. Take special care with the roughing-in and finished plumbing where batteries of fixtures occur.
2. Take location and mounting heights for roughing-in from Architectural Drawings.
3. Follow schedule on Plumbing Drawings for roughing-in connections. Set roughing-in for all fixtures exactly as per measurements furnished by the manufacturers of the fixtures used.

4. Roughing-in for lavatories and sinks shall be brought in through the wall under the centerline of the drain from the fixture wherever possible and as close to the fixture as possible.

2.2 MATERIALS

A. Provide materials that have been selected for their surface flatness and smoothness. Exposed surfaces that exhibit pitting, seam marks, roller marks, foundry sand holes, stains, discoloration, or other surface imperfections on finished units are not acceptable.

B. Where fittings, trim and accessories are exposed or semi-exposed, provide, chromium plated 17 gauge seamless brass and match faucets and fittings. Provide 17 gauge seamless copper or brass where not exposed.

C. Handles on all faucets and stops shall be all metal chromium plated.

2.3 PLUMBING FITTINGS, TRIM AND ACCESSORIES

A. Water Outlets: At locations where water is supplied (by manual, automatic or remote control), provide commercial quality faucets, valves, or dispensing devices, of type and size indicated, and as required to operate as indicated.

1. Include manual shutoff valves and connecting stem pipes to permit outlet servicing without shut-down of water supply piping systems.

B. P-Traps: Include IAPMO approved removable P-traps where drains are indicated for direct connection to drainage system. P-Traps shall be less trap screw cleanout, and incorporate a chrome plated cast brass body, brass connection nuts, 17 gauge seamless brass wall return and chrome plated wall escutcheon to match trap finish.

C. Escutcheons: Where fixture supplies and drains penetrate walls in exposed location, provide chrome-plated cast brass escutcheons with setscrews.

D. Aerators: Provide aerators of types approved by Health Departments having jurisdiction. Delete aerators where not allowed by CPC for health care occupancies.

E. Comply with additional fixture requirements contained in Fixture Schedule shown on the drawings.

2.4 MANUFACTURERS

A. In accordance with California Plumbing Code, provide indelibly marked or embossed manufacturers name or logo, arranged so as to be visible after installation.

B. Manufacturers: Drawing schedules indicate Basis of Design products. Subject to compliance with requirements, provide product indicated on Drawings, or comparable product by one of the following:

1. Faucets:

Chicago Faucet Co. Symmons Scott
T&S Brass and Bronze Works, Inc. Delta Commercial

2. Stainless Steel Sinks: Elkay Mfg. Co.
Just Mfg. Co.
Haws Corporation

2.5 FIXTURE CONNECTIONS

A. Make connection between fixtures and flanges on soil pipe absolutely gastight and watertight with neoprene type gaskets (wall hung fixtures) or bowl wax (floor outlet fixtures). Rubber gaskets or putty will not be permitted.

B. Provide fixtures not having integral traps with P-traps of chromium-plated 17 gauge cast brass, with 17 gauge seamless brass wall return, connected to concealed waste in wall and sanitary fittings. Provide IAPMO approval for trap, and provide less trap screw cleanout.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

Dearborn Brass, Commercial series with brass nuts Delta Commercial
McGuire Manufacturing Co., Inc.

C. Connections from stacks or horizontal wastes to wall or floor finish for wastes from lavatories, urinals, sinks, and drinking fountains and connection between floor drains and traps shall be IPS 85 percent red brass pipe.

D. Unions on waste pipes on fixture side of traps may be slip or flange joints with soft rubber or lead gaskets. Traps shall rough in full size to waste and vent connection, using deep escutcheon plate to cover wall penetration. Compression adaptor extensions or sweat adaptors are not acceptable.

2.6 WATER SUPPLIES AND STOPS

A. Provide 85 percent IPS threaded red brass nipple, conforming to the lead-free requirements of California Health and Safety Code Section 116875, securely anchored to building construction, for each connection to stops, hose bibbs, etc. Each fixture, except hose bibbs, shall have stop valves installed on water supply lines.

B. Provide water supplies to fixtures with compression shut-off stops with IPS inlets and lock shield-loose key handles. Provide combination fixtures with compression stop and IPS inlet on each water supply fitting. Provide lock shield-loose key handle for each stop.

C. Provide 1/2 inch riser tubes with reducing coupling for fixtures, unless otherwise noted.

D. Provide cast brass escutcheon.

E. Furnish shut-off valves on hose bibbs where directly connected to mains with no intervening valves.

F. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

BrassCraft Manufacturing model SR37XC stop with 3-12AC riser and 647 escutcheon. McGuire Manufacturing Company, Inc. model LFH2167LK.
Watts model LF890 203LK.

2.7 PLUMBING FIXTURES

A. Install all plumbing fixtures at height indicated on Architectural Drawings. Where mounting height is not indicated, install at height required by Code.

B. Special Requirements For Accessible Fixtures:

1. Operating handle or valve for accessible water closets, urinals, lavatories, and sinks shall operate with less than 5 pounds force. Metering faucets shall be adjusted to operate between 10 and 15 seconds.
2. Insulate exposed waste piping and domestic water supplies below accessible fixtures with CBC access code compliant molded "closed-cell" vinyl covers. Covers shall be installed using vandal resistant fasteners and must be removable. Covers shall meet flame spread rating not to exceed 25 and smoke density not to exceed 50 when tested in accordance with ASTM E-84, and shall comply with the requirements of California Code of Regulations, Title 24. Plumberex – Handy Shield, Johns Manville – Zeston 2000, or equal.

C. Refrigerator Ice Maker:

1. Manufacturers: Drawing schedules indicate Basis of Design products. Subject to compliance with requirements, provide product indicated on Drawings, or comparable product by one of the following, or equal:

Guy Gray Water-Tite

PART 3 - EXECUTION

3.1 PRODUCT HANDLING AND PROTECTION

A. Deliver packaged materials in their original, unopened wrapping with labels intact. Protect materials from water, the elements and other damage during delivery, storage and handling.

3.2 PREPARATORY PROVISIONS

A. The Contractor is responsible for the examination and acceptance of all conditions affecting the proper construction and/or installation of the Work of this Section. Do not proceed until all unsatisfactory conditions have been corrected. Commencing work will be construed as acceptance of all conditions by the Contractor as satisfactory for the construction and/or installation of the Work.

3.3 INSPECTION AND PREPARATION

A. Examine roughing-in work of domestic water and waste piping systems to verify actual locations of piping connections prior to installing fixtures. Also examine floors and substrates, and conditions under which fixture work is to be accomplished. Correct any incorrect locations of piping, and other unsatisfactory conditions for installation of plumbing fixtures. Do not proceed with work until unsatisfactory conditions have been corrected.

B. Install plumbing fixtures of types indicated where shown and at indicated heights; in accordance with fixture manufacturer's written instructions, roughing-in drawings. Ensure that plumbing fixtures comply with requirements and serve intended purposes. Comply with applicable requirements of the National Standard Plumbing Code pertaining to installation of plumbing fixtures.

C. Fasten plumbing fixtures securely to supports or building structure; and ensure that fixtures are level and plumb. Secure plumbing supplies to blocking behind or within wall construction so as to be rigid, and not subject to pull or push movement.

D. Install CBC accessible fixtures in accordance with Chapter 4 California Plumbing Code, and Chapters 11A and 11B California Building Code.

3.4 INSTALLATION OF FAUCETS

A. Provide 85 percent IPS red brass pipe, conforming to lead-free requirements of California Health and Safety Code Section 116875, securely anchored to building construction, for each connection

to faucets, stops, hose bibbs, etc. Each fixture, except hose bibbs, shall have a stop valve installed on water supply lines to permit repairs without shutting off water mains.

B. Adjust metering faucets to run for 10 to 15 seconds.

3.5 CLEAN AND PROTECT

A. Clean plumbing fixtures of dirt and debris upon completion of installation.

B. Protect installed fixtures from damage during the remainder of the construction period.

C. Grout voids between all fixtures and adjacent surfaces with white Dow Silicone Sealant, arranged to shed water.

3.6 FIELD QUALITY CONTROL

A. Upon completion of installation of plumbing fixtures and after units are water pressurized, test fixtures to demonstrate capability and compliance with requirements. When possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units and proceed with retesting.

3.7 EXTRA STOCK

A. General: Furnish special wrenches and other devices necessary for servicing plumbing fixtures and trim to Owner with receipt. Furnish one device for every ten units.

END OF SECTION 224000

SECTION 230050 - BASIC HVAC MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Electric motors.

B. Access Doors.

C. Flexible joints.

D. Insulation.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. This Section is a part of each Division 23 Section.

1.3 ADDITIONAL REQUIREMENTS

A. Furnish and install incidental work not shown or specified necessary to provide a complete and workable system.

B. Make all temporary connections required to maintain services, including adequate heat and cooling, during the course of the Contract without additional cost to Owner. Notify Owner seven days in advance before disrupting services.

C. Provide for adjustments or modifications to fan and motor sheaves, belts, damper linkages, and other components as required to achieve specified air balance at no additional cost to Owner.

1.4 REFERENCED STANDARDS

A. Where material or equipment is specified to conform to referenced standards, it shall be assumed that the most recent edition of the standard in effect at the time of bid shall be used.

1. CSA – Canadian Standards Association International
2. ANSI - American National Standards Institute
3. ASTM - American Society for Testing and Materials
4. CCR - California Code of Regulations

a. Title 8 - Division of Industrial Safety, Subchapter 7; General Industry Safety Orders, Articles 31 through 36

5. NCPWB - National Certified Pipe Welding Bureau
6. CEC - California Electrical Code
7. NEMA - National Electrical Manufacturers' Association
8. NFPA - National Fire Protection Association
9. OSHA - Occupational Safety and Health Act
10. UL - Underwriters' Laboratories, Inc.

1.5 DRAWINGS

A. Examine Drawings prior to bidding of work and report discrepancies in writing to Architect.

B. Visit Project site and examine existing conditions in order to become familiar with Project scope. Verify dimensions shown on Drawings at Project site. Bring discrepancies to the attention of Architect. Failure to examine Project site shall not constitute basis for claims for additional work because of lack of knowledge or location of hidden conditions that affect Project scope.

C. Drawings showing location of equipment and materials are diagrammatic and job conditions will not always permit installation in location shown. The HVAC Drawings show general arrangement of equipment and materials, etc., and shall be followed as closely as existing conditions, actual building construction, and work of other trades permit.

1. Architectural and Structural Drawings shall be considered part of the Work. These Drawings furnish Contractor with information relating to design and construction of the Project. Architectural Drawings take precedence over HVAC Drawings.
2. Because of the small scale of HVAC Drawings, not all offsets, fittings, and accessories required are shown. Investigate structural and finish conditions affecting the Work and arrange Work accordingly. Provide offsets, fittings, and accessories required to meet conditions. Inform Architect immediately when job conditions do not permit installation of equipment and materials in the locations shown. Obtain the Architects approval prior to relocation of equipment and materials.
3. Relocate equipment and materials installed without prior approval of the Architect. Remove and relocate equipment and materials at Contactors' expense upon Architects' direction.
4. Minor changes in locations of equipment, piping, ducts, etc., from locations shown shall be made when directed by the Architect at no additional cost to the Owner providing such change is ordered before

such items of work, or work directly connected to same are installed and providing no additional material is required.

D. Execute work mentioned in the Specifications and not shown on the Drawings, or vice versa, the same as if specifically mentioned or shown in both.

1.6 REQUIREMENTS OF REGULATORY AGENCIES

A. The publications listed below form part of this Specification; comply with provisions of these publications except as otherwise shown or specified.

1. California Building Code, 2013
2. California Electrical Code, 2013
3. California Energy Code, 2013
4. California Fire Code, 2013
5. California Green Building Standards Code, 2013
6. California Mechanical Code, 2013
7. California Plumbing Code, 2013
8. California Code of Regulations, Title 24
9. California Health and Safety Code
10. CAL-OSHA
11. California State Fire Marshal, Title 19 CCR
12. National Fire Protection Association
13. Occupational Safety and Health Administration
14. Other applicable state laws

B. Nothing in Drawings or Specifications shall be construed to permit work not conforming to these codes, or to requirements of authorities having jurisdiction. It is not the intent of Drawings or Specifications to repeat requirements of codes except where necessary for clarity.

C. Comply with State of California 2013 Energy Code for systems, equipment, and construction.

D. When Contract Documents differ from governing codes, furnish and install larger size or higher standards called for without extra charge.

E. FEES AND PERMITS

F. Obtain and pay for permits and service required in installation of the Work. Arrange for required inspections and secure approvals from authorities having jurisdiction. Comply with requirements of Division 01.

G. Arrange for utility connections and pay charges incurred, including excess service charges.

1.7 FRAMING, CUTTING AND PATCHING

A. Special framing, recesses, chases and backing for Work of this Section, unless otherwise specified, are covered under other Specification Sections.

B. Contractor is responsible for placement of pipe sleeves, hangers, inserts, supports, and location of openings for the Work.

C. Cutting, patching, and repairing of existing construction to permit installation of equipment, and materials is the responsibility of Contractor. Repair or replace damage to existing work with skilled mechanics for each trade.

D. Cut existing concrete construction with a concrete saw. Do not utilize pneumatic devices.

E. Core openings through existing construction for passage of new piping and conduits. Cut holes of minimum diameter to suit size of pipe and associated insulation installed. Coordinate with building structure, and obtain Structural Engineer's approval prior to coring through existing construction.

1.8 SUBMITTALS

A. Submittal packages may be submitted via email as PDF electronic files, or as printed packages. PDFs shall be legible at actual size (100 percent). Provide seven copies of printed submittal packages.

B. Provide submittal of materials proposed for use as part of this Project. Product names in Specifications and on Drawings are used as standards of quality. Furnish standard items on specified equipment at no extra cost to the Contract regardless of disposition of submittal data. Other materials or methods shall not be used unless approved in writing by Architect. Architect's review will be required even though "or equal" or synonymous terms are used. Refer to Division 01 for complete instructions.

1. Partial or incomplete submittals will not be considered.
2. Quantities are Contractor's responsibility and will not be reviewed.
3. Provide materials of the same brand or manufacturer for each class of equipment or material.
4. Identify each item by manufacturer, brand, trade name, number, size, rating, or other data necessary to properly identify and review materials and equipment. Words "as specified" are not sufficient identification.
5. Identify each submittal item by reference to items' Specification Section number and paragraph, by Drawing and detail number, and by unit tag number.
6. Organize submittals in same sequence as in Specification Sections.

7. Show physical arrangement, construction details, finishes, materials used in fabrications, provisions for piping entrance, access requirements for installation and maintenance, physical size, mechanical characteristics, foundation and support details, and weight.

a. Submit Shop Drawings, performance curves, and other pertinent data, showing size and capacity of proposed materials.
b. Specifically indicate, by drawn detail or note, that equipment complies with each specifically stated requirement of Contract Documents.
c. Drawings shall be drawn to scale and dimensioned (except schematic diagrams). Drawings may be prepared by vendor but must be submitted as instruments of Contractor, thoroughly checked and signed by Contractor before submission to Architect for review.
d. Catalog cuts and published material may be included with supplemental scaled drawings.

C. Review of submittals will be only for general conformance with design concept and general compliance with information given in Contract Documents. Review will not include quantities, dimensions, weights or gauges, fabrication processes, construction methods, coordination with work of other trades, or construction safety precautions, which are sole responsibility of Contractor. Review of a component of an assembly does not indicate acceptance of an assembly. Deviations from Contract Documents not clearly identified by Contractor are Contractor's responsibility and will not be reviewed by Architect.

D. Within reasonable time after award of contract and in ample time to avoid delay of construction, submit to Architect shop drawings or submittals on all items of equipment and materials provided. Provide submittal as a complete package.

1. Shop drawings and submittals shall include Specification Section, Paragraph number, and Drawing unit symbol or detail number for reference. Organize submittals into booklets for each Specification section and submit in loose-leaf binders with index. Deviations from the Contract Documents shall be prominently displayed in the front of the submittal package and referenced to the applicable Contract requirement.

E. Provide coordinated layouts for HVAC Ductwork systems, in accordance with Specification Section 23 80 00.

F. Furnish to the Project Inspector complete installation instructions on material and equipment before starting installation.

G. Have fire damper and fire smoke damper installation instructions available at Project site during construction for use by Project Inspector.

H. Product Data for California Green Building Standards Code Compliance: For adhesives and sealants, including primers, documentation of compliance including printed statement of VOC content and chemical components.

I. Provide product data for insulation products, including insulation, insulation facings, jackets, adhesives, sealants, and coatings, indicating compliance with requirement that these products contain less than 0.1 percent (by mass) polybrominated diphenyl ethers (PBDEs) in penta, octa, or deca formulations.

J. Provide evidence of equipment certification to California Energy Code Section 110.1 or 110.2, if not providing Electrically Commutated motors for HVAC fans sized below 1 hp and above 1/12 hp. Refer to specific equipment articles requiring electrically commutated motors.

K. Delegated-Design Submittal: For seismic supports, anchorages, and restraints indicated to comply with performance requirements and design criteria.

1. Calculations performed for use in selection of seismic supports, anchorages, and restraints shall utilize criteria indicated in Structural Contract Documents.
2. Supports, anchorage and restraints for piping, ductwork, and equipment shall be an OSHPD pre-approved system such as Tolco, Afcon, ISAT, Badger, Mason, or equal. Pipes, ducts and equipment shall be seismically restrained in accordance with requirements of current edition of California Building Code. System shall have current OPM number and shall meet additional requirements of authority having jurisdiction.
Provide supporting documentation required by the reviewing authority and the Architect and Engineer. Provide layout drawings showing piping, ductwork and restraint locations.

a. Bracing of Piping, Ductwork, and Equipment: Specifically state how bracing attachment to structure is accomplished. Provide shop drawings indicating seismic restraints, including details of anchorage to building. In-line equipment must be braced independently of piping and ductwork, and in conformance with applicable building codes. Provide calculations to show that pre-approval numbers have been correctly applied in accordance with general information notes of pre-approval documentation.

3. In lieu of the above or for non-standard installations not covered in the above pre- approved systems, Contractor shall provide layout drawings showing piping, ductwork, and restraint locations, and detail supports, attachments and restraints, and furnish supporting calculations and legible details sealed by a California registered structural engineer, in accordance with 2013 California Building Code
4. Additional Requirements: In addition to the above, conform to all state and local requirements.

1.9 SUBSTITUTIONS

A. Refer to Division 01 for complete instructions. Requirements given below are in addition to or are intended to amplify Division 01 requirements. In case of conflict between requirements given herein and those of Division 01, Division 01 requirements shall apply.

B. It is the responsibility of Contractor to assume costs incurred because of additional work and or changes required to incorporate proposed substitute into the Project. Refer to Division 01 for complete instructions.

C. Substitutions will be interpreted to be manufacturers other than those specifically listed in the Contract Documents by brand name, model, or catalog number.

D. Only one request for substitution will be considered for each item of equipment or material.

E. Substitution requests shall include the following:

1. Reason for substitution request.
2. Complete submittal information as described herein; see "Submittals."
3. Coordinated scale layout drawings depicting position of substituted equipment in relation to other work, with required clearances for operation, maintenance and replacement.
4. List optional features required for substituted equipment to meet functional requirements of the system as indicated in Contract Documents.
5. Explanation of impact on connected utilities.
6. Explanation of impact on structural supports.

F. Installation of reviewed substitution is Contractors' responsibility. Any mechanical, electrical, structural, or other changes required for installation of substituted equipment or material must be made by Contractor without additional cost to Owner. Review by Architect of substituted equipment or material, will not waive these requirements.

G. Contractor may be required to compensate Architect for costs related to substituted equipment or material.

1.10 OPERATION AND MAINTENANCE MANUAL

A. Furnish three complete sets of Operation and Maintenance Manual bound in hardboard binder, and one compact disc containing complete Operation and Maintenance Manual in searchable PDF format. Provide Table of Contents. Provide index tabs for each piece of equipment in binder and disc. Start compiling data upon approval of submittals.

1. Sets shall incorporate the following:

a. Service telephone number, address and contact person for each category of equipment or system.
b. Complete operating instructions for each item of heating, ventilating and air conditioning equipment.
c. Copies of guarantees/warrantees for each item of equipment or systems.
d. Test data and system balancing reports.
e. Typewritten maintenance instructions for each item of equipment listing lubricants to be used, frequency of lubrication, inspections required, adjustment, etc.
f. Manufacturers' bulletins with parts numbers, instructions, etc., for each item of equipment.
g. Temperature control diagrams and literature.
h. Check test and start reports for each piece of mechanical equipment provided as part of the Work.
i. Commissioning and Preliminary Operation Tests required as part of the Work.

B. Post service telephone numbers and addresses in an appropriate place designated by Architect.

1.11 SITE CONDITIONS

A. Information on Drawings relative to existing conditions is approximate. Deviations from Drawings necessary during progress of construction to conform to actual conditions shall be approved by the Architect and shall be made without additional cost to the Owner. The Contractor shall be held responsible for damage caused to existing services. Promptly notify the Architect if services are found which are not shown on Drawings.

1.12 EXISTING MATERIALS

A. Remove existing equipment, piping, wiring, construction, etc., which interferes with Work of this Contract. Promptly return to service upon completion of work in the area. Replace items damaged by Contractor with new material to match existing.

B. Removed materials which will not be re-installed and which are not claimed by Owner shall become the property of Contractor and shall be removed from the Project site. Consult Owner before removing any material from the Project site. Carefully remove materials claimed by Owner to prevent damage and deliver to Owner-designated storage location.

C. Existing piping and wiring not reused and are concealed in building construction may be abandoned in place and all ends shall be capped or plugged. Remove unused piping and wiring exposed in Equipment Rooms or occupied spaces. Material shall be removed from the premises. Disconnect power, water, gas, pump or any other active energy source from piping or electrical service prior to abandoning in place.

1.13 WARRANTY

A. Refer to Division 01 for warranty requirements, including effective date of warranty. Refer to specific items of equipment specified herein for warranty duration if different from that specified in Division 01.

B. Repair or replace defective work, material, or part that appears within the warranty period, including damage caused by leaks.

C. On failure to comply with warranty requirements within a reasonable length of time after notification is given, Architect/Owner shall have repairs made at Contractor's expense.

1.14 RECORD DRAWINGS

A. Refer to Division 01, Record Documents, for requirements governing Work specified herein.

B. Upon completion of the Work, deliver to Architect the following:

1. Originals of drawings showing the Work exactly as installed.
2. One complete set of reproducible drawings showing the Work exactly as installed.
3. One compact disc with complete set of drawings in PDF format showing the Work exactly as installed.
4. Provide Contractor's signature, verifying accuracy of record drawings.

C. Obtain the signature of the Inspector of Record for all Record Drawings.

1.15 DELIVERY AND STORAGE

A. Protect equipment and materials delivered to Project site from weather, humidity and temperature variations, dirt, dust and other contaminants.

1.16 COORDINATION

A. General:

1. Coordinate Work in this Section with trades covered in other Specifications Sections to provide a complete, operable and sanitary installation of the highest quality workmanship.

B. Electrical Coordination:

1. Refer to the Electrical Drawings and Specifications, Division 26, for service voltage and power feed wiring for equipment specified under this section. Contractor has full responsibility for the following items of work:

a. Review the Electrical Drawings and Division 26 Specifications to verify that electrical services provided are adequate and compatible with equipment requirements.
b. If additional electrical services are required above that indicated on Electrical Drawings and in Division 26, such as more control interlock conductors, larger

feeder, or separate 120 volt control power source, include cost to furnish and install additional electrical services as part of the bid.
c. Prior to proceeding with installation of additional electrical work, submit detailed drawings indicating exact scope of additional electrical work.

C. Mechanical Coordination:

1. Arrange for pipe spaces, chases, slots and openings in building structure during progress of construction, to accommodate mechanical system installation.
2. Coordinate installation of supporting devices. Set sleeves in poured-in-place concrete and other structural components during construction.
3. Coordinate requirements for access panels and doors for mechanical items requiring access where concealed behind finished surfaces. Access panels and doors are specified in Division 08 Section "Access Doors and Frames."

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials or equipment of the same type shall be of the same brand wherever possible. All materials shall be new and in first class condition.

B. All sizes, capacities, and efficiency ratings shown are minimum, except that gas capacity is maximum available.

C. Refer to Division 22 10 00 and 23 80 00 for specific system piping materials.

2.2 MATERIALS

A. No material installed as part of this Work shall contain asbestos.

B. California Green Building Code Compliance:

1. HVAC and refrigeration equipment shall not contain CFCs.
2. HVAC and refrigeration equipment shall not contain Halons.

2.3 ELECTRIC MOTORS

A. General Motor Requirements: Comply with NEMA MG 1 unless otherwise indicated. Comply with IEEE 841 for severe-duty motors.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

a. U.S. Motors
b. Century Electric
c. General Electric
d. Lincoln
e. Gould

B. Motor Characteristics: Designed for continuous duty at ambient temperature of 40 deg. C and at altitude of 3300 feet above sea level. Capacity and torque shall be sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and

environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

1. Motors exceeding the nameplate amperage shall be promptly replaced at no cost to the Owner. Horsepower shown is minimum and shall be increased as necessary to comply with above requirements. Furnish motors with splash-proof or weatherproof housings, where required or recommended by the manufacturer. Match the nameplate voltage rating with the electrical service supplied. Check Electrical Drawings. Provide a transformer for each motor not wound specifically for system voltage.

C. Polyphase Motors: NEMA MG 1, Design B, medium induction motor, efficiency as defined in NEMA MG 1. Select motors with service factor of 1.15. Provide motor with random-wound, squirrel cage rotor, and permanently lubricated or regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading. Temperature rise shall match insulation rating. Provide Class F insulation.

1. Multispeed motors shall have separate windings for each speed.

D. Polyphase Motors with Additional Requirements:

1. Motors Used with Reduced-Voltage and Multispeed Controllers: Match wiring connection requirements for controller with required motor leads. Provide terminals in motor terminal box, suited to control method.
2. Motors Used with Variable Frequency Controllers:

a. Separately Connected Motors: Ratings, characteristics, and features coordinated with and approved by controller manufacturer.
b. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time rise pulses produced by pulse-width modulated inverters.
c. Energy- and Premium-Efficient Motors: Class B temperature rise; Class F insulation.
d. Inverter-Duty Motors: Class F temperature rise; Class H insulation.
e. Thermal Protection: Comply with NEMA MG 1 requirements for thermally protected motors.

3. Severe-Duty Motors: Comply with IEEE 841, with 1.15 minimum service factor.

E. Single-Phase Motors:

1. Select motors with service factor of 1.15.

2. Motors larger than 1/20 hp shall be one of the following, to suit starting torque and requirements of specific motor application:

a. Permanent-split capacitor.
b. Split phase.
c. Capacitor start, inductor run.
d. Capacitor start, capacitor run.

3. Motors for HVAC exhaust, transfer, and supply fans larger than 1/12 hp and smaller than 1 hp shall be the following:

a. Electronically Commutated motor (EC type): Motor shall be electronically commutated type specifically designed for applications, with heavy duty ball

bearings. The motor shall be speed controllable down to 20% of full speed and 85% efficient at all speeds.

1) Exceptions:

a) Motors in fan-coils and terminal units that operate only when providing heating to the space served.
b) Motors installed in space conditioning equipment certified under 2013 California Energy Code Section 110.1 or 110.2.

4. Contractor's Option: Motors scheduled on Drawings as single-phase, and larger than 1/12 hp and smaller than 1 hp, for applications other than HVAC fans, may be EC type.
5. Multispeed Motors: Variable-torque, permanent-split-capacitor type.
6. Bearings: Prelubricated, antifriction ball bearings or sleeve bearings suitable for radial and thrust loading.
7. Motors 1/20 HP and Smaller: Shaded-pole type.
8. Thermal Protection: Internal protection to automatically open power supply circuit to motor when winding temperature exceeds a safe value calibrated to temperature rating of motor insulation. Thermal-protection device shall automatically reset when motor temperature returns to normal range.

2.4 JOINING MATERIALS

A. Refer to Division 22 and 23 piping sections for special joining materials not listed below.

B. Brazing Filler Metals:
1. Refrigerant Piping:

a. Joining copper to copper: AWS A5.8, BCup-5 Series, copper-phosphorus unless otherwise indicated. Sil-Fos 15, or equal.
b. Joining copper to bronze or steel: AWS A5.8, Bag-1, silver alloy unless otherwise indicated.

2.5 ACCESS DOORS

A. Where floors, walls, or ceilings must be penetrated for access to mechanical equipment, provide access doors, 14 inch by 14 inch minimum size in usable opening. Where entrance of a serviceman may be required, provide 20 inch by 30 inch minimum usable opening. Locate access doors/panels for non-obstructed and easy reach.

1. All access doors less than 7'-0" above floors and exposed to public access shall have keyed locks.

B. Access doors shall match those supplied in Division 08 in all respects, except as noted herein.

C. Provide stainless steel access doors for use in toilet rooms, shower rooms, kitchens and other damp areas. Provide steel access doors with prime coat of baked-on paint for all other areas.

D. Where panels are located on ducts or plenums, provide neoprene gaskets to prevent air leakage, and use frames to set door out to flush with insulation.

E. Provide insulated doors where located in internally insulated ducts or casings.

F. Do not locate access doors in highly visible public areas such as lobbies, waiting areas, and primary entrance areas. Coordinate with the Architect when access is required in these areas.

G. Where specific information or details relating to access panels different from the above is shown or given on the Drawings or other Divisions of work, then that information shall supersede this specification.

H. Manufacturers: Subject to compliance with requirements, available manufacturers offering products which may be incorporated into the Work include Milcor, Karp, Nystrom, or Cesco, equal to the following:

1. Milcor

a. Style K (plaster)
b. Style DW (gypsum board)
c. Style M (Masonry)
d. Style "Fire Rated" where required.

2.6 EQUIPMENT IDENTIFICATION

A. Identify each piece of equipment with a permanently attached engraved bakelite plate, 1/2 inch high white letters on black background.

2.7 PIPE IDENTIFICATION

A. Identify each piping system and indicate the direction of flow by means of Seton, Inc., Marking Services Inc., Reef Industries, Inc., or equal, pre-tensioned, coiled semi-rigid plastic pipe labels formed to circumference of pipe, requiring no fasteners or adhesive for attachment to pipe.

B. The legend and flow arrow shall conform to ASME A13.1.

2.8 INSULATION WORK

A. General:

1. Insulation products, including insulation, insulation facings, jackets, adhesives, sealants and coatings shall not contain polybrominated diphenyl ethers (PBDEs) in penta, octa, or deca formulations in amounts greater than 0.1 percent (by mass).
2. Adhesives and sealants shall comply with testing and product requirements of South Coast Air Quality Management District, Rule 1168.
3. The term "piping" used herein includes pipe, air separators, valves, strainers and fittings.
4. Apply insulating cement to fittings, valves and strainers and trowel smooth to the thickness of adjacent covering. Cover with jacket to match piping. Extend covering on valves up to the bonnet. Leave strainer cleanout plugs accessible.
5. Provide pre-formed PVC valve and fitting covers for indoor piping.
6. Provide factory-fabricated aluminum valve and fitting covers for outdoor piping.

7. Provide Calcium Silicate rigid insulation and sheet metal sleeve, 18 inch minimum length at each pipe hanger. Seal ends of insulation to make vapor tight with jacket.
8. Urethane insulation will not be allowed above ground or on hot water piping.
9. Test insulation, jackets, and lap-seal adhesives as a composite product and confirm flame spread of not more than 25 and a smoke developed rating of not more than 50 when tested in accordance with UL723, ASTM E84, or NFPA 255.
10. Clean thoroughly, test and have approved, all piping and equipment before installing insulation and/or covering.
11. Repair all damage to existing pipe and duct insulation whether or not caused during the work of this contract, to match existing adjacent insulation for thickness and finish, but conforming to flame spread and smoke ratings specified above.

B. Insulation of Piping:
1. Insulate refrigerant suction piping, including fittings, with 3-1/2 pound per cubic foot minimum density fiberglass with factory-applied ASJ-SSL jacket Insulate valves and irregular surfaces to match adjacent insulation and cover with two layers of Glasfab saturated in Foster Sealfas 30-36, 3M, or equal, carried 3 inches over the adjoining pipe insulation. Finish with a coat of Foster Sealfas 30-36, 3M, or equal. The 3 inch wide SSL end laps furnished with the insulation shall be adhered over the end joints. Seal entire surface of insulation vapor tight, including joints and ends of PVC or aluminum fitting covers. Insulation thicknesses per application follow:

a. Indoor refrigerant suction piping 3/4 inch diameter and smaller: 1 inch thick.
b. Indoor refrigerant suction piping 1 inch diameter and larger: 1-1/2 inches thick.

2. In lieu of the above, refrigerant suction piping, including fittings, may be insulated with Armacell LLC; AP Armaflex, or equal. Seal all joints with Armaflex 520 BLV adhesive, or equal. Apply insulation in strict accordance with manufacturer's recommendations. Insulation thicknesses follow:

a. Indoor refrigerant suction piping 3/4 inch diameter and smaller: 1/2 inch thick.
b. Indoor refrigerant piping 1 inch diameter and larger: 1 inch thick.

3. When equipment manufacturers' instructions indicate that refrigerant liquid and hot-gas gas piping be insulated, insulation thickness shall be equal to, and applied as described herein for refrigerant suction piping.

C. Duct Insulation:

1. All duct insulation shall meet minimum R-value of R-8 at 3 inch thickness 3/4 pound per cubic foot density for ductwork installed outside the building insulation envelope. For ductwork installed within the building insulation envelope, duct insulation shall have a minimum R-value of R-4.2 at 2 inch thickness, 3/4 pound per cubic foot density.
2. General: Insulation applied to the exterior surface of ducts located in buildings shall have a flame spread of not more than 25 and a smoke-developed rating of not more than 50 when tested as a composite installation including insulation, facing materials, tapes and adhesives as normally applied. Material exposed within ducts or plenum shall have a flame-spread rating of not more than 25 and a smoke-developed rating of not more than 50.
3. Wrap all unlined concealed supply and return ducts with fiberglass duct wrap, manufactured as a blanket of glass fibers factory laminated to a reinforced foil/kraft vapor retarding facing. Provide 2 inch stapling and taping flange. Wrap insulation entirely around duct and secure with outward clinching staples on 6 inch centers. Provide mechanical fasteners at maximum 18 inch centers for all bottoms of duct which are greater than 24 inches. Lap all insulation joints 3" minimum. Insulate ducts installed tight against other work before hanging in place. Seal all seams, both longitudinal and transverse, and all staple and mechanical fastener penetrations of facing with scrim backed foil tape or recommended sealant, to provide a vapor tight installation.
4. Provide internal duct lining in accordance with specification section 23 80 00. PART 3 - EXECUTION

3.1 MECHANICAL DEMOLITION

A. Refer to Division 01 Sections "Cutting and Patching" and "Selective Demolition" for general demolition requirements and procedures.

B. Disconnect, dismantle and remove mechanical systems, equipment, and components indicated to be removed. Coordinate with all other trades.

1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping to remain with same or compatible piping material. Refrigerant system must be evacuated per EPA requirements.
3. Ducts to Be Removed: Remove portion of ducts indicated to be removed and cap remaining ducts with same or compatible ductwork material.
4. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
5. Equipment to Be Removed: Drain down and cap remaining services and remove equipment.
6. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
7. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

3.2 ELECTRICAL REQUIREMENTS

A. Provide adequate working space around electrical equipment in compliance with the California Electrical Code. Coordinate the Mechanical Work with the Electrical Work to comply.

B. Furnish necessary control diagrams and instructions for the controls. Before permitting operation of any equipment which is furnished, installed, or modified under this Section, review all associated electrical work, including overload protection devices, and assume complete responsibility for the correctness of the electrical connections and protective devices. Motors and control equipment shall conform to the Standards of the National Electrical Manufacturers' Association. All equipment and connections exposed to the weather shall be NEMA IIIR with factory-wired strip heaters in each starter enclosure and temperature control panel where required to inhibit condensation.

C. All line voltage and low voltage wiring and conduit associated with the Temperature Control System are included in this Section. Wiring and conduit shall comply with Division 26.

3.3 PIPING SYSTEM REQUIREMENTS

A. Drawing plans, schematic and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.

3.4 PRIMING AND PAINTING

A. Perform all priming and painting on the equipment and materials as specified herein.

B. Priming:

1. Exposed ferrous metals, including piping, which are not galvanized or factory-finished shall be primed. Black steel pipe exposed to the weather shall be painted one coat of Rust-Oleum #1069 primer for black steel piping or Rust-Oleum #5260, Kelly Moore, or equal, primer for galvanized piping.
2. Metal surfaces of items to be jacketed or insulated except ductwork and piping shall be given two coats of primer unless furnished with equivalent factory finish. Items to be primed shall be properly cleaned by effective means free of rust, dirt, scale, grease and other deleterious matter and then primed with the best available grade of zinc rich primer. After erection or installation, all primed surfaces shall be properly cleaned of any foreign or deleterious matter that might impair proper bonding of subsequent paint coatings. Any abrasion or other damage to the shop or field prime coat shall be properly repaired and touched up with the same material used for the original priming.
3. Where equipment is provided with nameplate data, the nameplate should be masked off prior to painting. When painting is completed, remove masking material.

C. See Painting Section for detailed requirements.

3.5 INSTALLATION OF PIPING AND DUCT SYSTEMS

A. General:

1. All piping shall be concealed unless shown or otherwise directed. Allow sufficient space for ceiling panel removal.
2. Installation of piping shall be made with appropriate fittings. Bending of piping will not be accepted.
3. Install piping to permit application of insulation and to allow valve servicing.
4. Where piping, conduit, or ductwork is left exposed within a room, the same shall be run true to plumb, horizontal, or intended planes. Where possible, uniform margins are to be maintained between parallel lines and/or adjacent wall, floor, or ceiling surfaces.
5. Horizontal runs of pipes, conduits, or ductwork suspended from ceilings shall provide for a maximum headroom clearance. The clearance shall not be less than 6'-6" without written approval from the Architect.
6. Close ends of pipe immediately after installation. Leave closure in place until removal is necessary for completion of installation.
7. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component opening shall be covered with tape, plastic, sheet metal, or other methods acceptable to the enforcing agency.
8. Each piping system shall be thoroughly flushed and proved clean before connection to equipment.
9. Install exposed polished or enameled connections with special care showing no tool marks or threads at fittings.
10. Install horizontal valves with valve stem above horizontal.
11. Use reducing fittings; bushings shall not be allowed. Use eccentric reducing fittings wherever necessary to provide free drainage of lines and passage of air.
12. Verify final equipment locations for roughing-in.
13. Where piping is installed in walls within one inch of the face of stud, provide a 16 gauge sheet metal shield plate on the face of the stud. The shield plate shall extend a minimum of 1-1/2 inches beyond the outside diameter of the pipe.

B. Sleeves:

1. Install Adjus-to-Crete, Pipeline Seal and Insulator, or equal, pipe sleeves of sufficient size to allow for free motion of pipe, 24 gauge galvanized steel. The space between pipe and sleeves through floor slabs on ground, through outside walls above or below grade, through roof, and other locations as directed shall be caulked with oakum and mastic and

made watertight. The space between pipe and sleeve and between sleeve and slab or wall shall be sealed watertight.

2. At Contractor's option, Link-Seal, Metraflex Metraseal, or equal, casing seals may be used in lieu of caulking. Wrap pipes through slabs on grade with 1 inch thick fiberglass insulation to completely isolate the pipe from the concrete.

C. Floor, Wall, and Ceiling Plates:

1. Fit all pipes with or without insulation passing through walls, floors, or ceilings, and all hanger rods penetrating finished ceilings with chrome-plated or stainless escutcheon plates.

D. Firestopping:

1. Pack the annular space between the pipe sleeves and the pipe and between duct openings and ducts through all floors and walls with UL listed fire stop, and sealed at the ends. All pipe penetrations shall be UL listed, Hilti, 3M Pro-Set, or equal.

a. Install fire caulking behind mechanical services installed within fire rated walls, to maintain continuous rating of wall construction.

2. Provide SpecSeal Systems UL fire rated sleeve/coupling penetrators for each pipe penetration or fixture opening passing through floors, walls, partitions or floor/ceiling assemblies. All Penetrators shall comply with UL Fire Resistance Directory (Latest Edition), and in accordance with CBC requirements.
3. Sleeve penetrators shall have a built in anchor ring for waterproofing and anchoring into concrete pours or use the special fit cored hole penetrator for cored holes.
4. Copper and steel piping shall have SpecSeal plugs on both sides of the penetrator to reduce noise and to provide waterproofing.
5. All above Firestopping systems to be installed in strict accordance with manufacturer's instructions.
6. Alternate firestopping systems are acceptable if approved equal. However, any deviation from the above specification requires the Contractor to be responsible for determining the suitability of the proposed products and their intended use, and the Contractor shall assume all risks and liabilities whatsoever in connection therewith.

E. Hangers and Supports:

1. General: Support all ductwork, equipment and piping so that it is firmly held in place by approved iron hangers and supports, and special hangers as required. All components shall support weight of ductwork, equipment and pipe, fluid, and pipe insulation based on spacing between supports with minimum factor of safety of five based on ultimate strength of material used. Do not exceed manufacturer's load rating. Pipe attachments or hangers, of same size as pipe or tubing on which used, or nearest available. Rigidly fasten hose faucets, fixture stops, compressed air outlets, and similar items to the building construction. The Architect shall approve all hanger material before installation. Do not support piping or ductwork with plumbers' tape, wire rope, wood, or other makeshift devices. Where building structural members do not match piping and ductwork support spacing, provide all "bridging" support members as required firmly attached to building structural members in a fashion approved by the Structural Engineer.

a. Materials, design, and type numbers for support of piping per Manufacturers' Standardization Society (MSS), Standard Practice (SP)-58.
b. Materials and design for ductwork support shall be per SMACNA "HVAC Duct Construction Standards, Metal and Flexible."

2. All hanger components shall be provided by one manufacturer: B-Line, Grinnell, Uni- Strut, Badger, or equal.
3. Pipe Hanger and Support Spacing:
a. Horizontal piping, hanger and support spacing: Locate hangers and supports at each change of direction, within one foot of elbow, and spaced at or within following maximum limits.

Pipe Diameter				
	Steel Fluid	Steel Vapor	Copper Fluid	Copper Vapor
1/2 - 1"	6	6	5	6
1-1/4 - 2"	7	10	6	6

4. Suspended Piping:

a. Individually suspended piping: B-Line B3690 J-Hanger or B3100 Clevis, complete with threaded rod, or equal.

Pipe Size	Rod Size
2" and Smaller	3/8"

b. Trapeze Suspension: B-Line 1-5/8 inch width channel in accordance with manufacturers' published load ratings. No deflection to exceed 1/180 of a span.
c. Trapeze Supporting Rods: Shall have a safety factor of five; securely anchor to building structure.
d. Pipe Clamps and Straps: B-Line B2000, B2400; isolate copper pipe with two thicknesses of 2 inches wide 10-mil polyvinyl tape. Where used for seismic support systems, provide B-Line B2400 series pipe straps.
e. Concrete Inserts: B-line B22-I continuous insert or B2500 spot insert. Do not use actuated fasteners for support of overhead piping unless approved by Architect.
f. Above Roof: H frame made from Uni-Strut hot-dipped galvanized 1-5/8 inch single or double channel with P-2072A or P-2073A foot secured to roof and surrounded with waterproof roofed-in sleeper. Secure to sleeper with lag screws, and secure sleeper to blocking under roof.
g. Steel Connectors: Beam clamps with retainers.

5. Duct Hanger and Support Spacing: Conform to Requirements of CMC and SMACNA "HVAC Duct Construction Standards, Metal and Flexible."

6. Support to Structure:

a. Steel Structure: Provide and install additional steel bracing as required to suit structure. Provide through bolts with length to suit requirements of the structural components. Burning or welding on any structural member may only be done if approved by the Architect.

7. Rubber Neoprene Pipe Isolators:

a. Pipe isolators shall comprise an internal rubber or neoprene material that isolates pipe from hanger and structure. Install at all piping located in acoustical walls. Refer to Architectural Drawings for location of acoustical walls.
b. Isolation material shall be either a rubber or neoprene material that prevents contact between the pipe and the structure. The rubber shall have between a 45 to 55 durometer rating and a minimum thickness of 1/2 inch.

c. Acceptable Suppliers:

1) Vertical runs: Acousto-Plumb or equal.

2) Horizontal runs: B-Line, Vibraclamp; Acousto-Plumb or equal.

8. Provide rigid insulation and a 12 inch long, 18 gauge galvanized sheet iron shield between the covering and the hanger whenever hangers are installed on the outside of the pipe covering.

9. Insulate copper tubing from ferrous materials and hangers with two thicknesses of 3 inch wide, 10 mil polyvinyl tape wrapped around pipe.

10. Provide a support or hanger close to each change of direction of pipe either horizontal or vertical and as near as possible to concentrated loads.

11. Suspend rods from concrete inserts with removable nuts where suspended from concrete decks. Power actuated inserts will not be allowed.

12. On chilled or combination hot and chilled water or refrigerant pipes, install the hangers on the outside of the pipe covering and not in contact with the pipe. Provide rigid insulation and a 12 inch long, 18 gauge galvanized sheet iron shield between the covering and the hanger whenever hangers are installed on the outside of the pipe covering.

3.6 PIPE JOINTS AND CONNECTIONS

A. General:

1. Cutting: Cut pipe and tubing square, remove rough edges or burrs. Bevel plain ends of steel pipe.
2. Remove scale, slag, dirt and debris from inside and outside of pipe before assembly.
3. Boss or saddle type fittings or mechanically extracted tube joints will not be allowed.

B. Threaded Pipe: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply thread compound to external pipe threads: Rectorseal No. 5, Permatex No. 1, or equal.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.

C. Flanged Joints: Select appropriate asbestos-free, nonmetallic gasket material in size, type, and thickness suitable for type of water conveyed by pipe. Join flanges with gasket and bolts according to ASME B31.9.

D. Copper Pipe and Tubing: All joints shall be brazed according to ASME Section IX, Welding and Brazing Qualifications, except pneumatic control piping, and hydronic piping having grooved- end fittings and couplings.

E. Flexible Connections:

1. Furnish and install Thermo Tech., Inc. F/J/R, Metraflex, or equal, flexible couplings with limiter bolts on piping connections to all equipment mounted on anti-vibration bases, except fan coil units under 2000 cfm, on each connection to each base mounted pump and where shown. Couplings shall be suitable for pressure and type of service.
2. Flexible connections in refrigerant lines; Flexonic, Anaconda or equal, metal hose, full size.
3. Anchor piping securely on the system side of each flexible connection.

F. Grooved-End Fittings and Couplings: Assemble joints with coupling and gasket, lubricant, and bolts. Cut or roll grooves in ends of pipe based on pipe and coupling manufacturer's written instructions for pipe wall thickness. Use grooved-end fittings and rigid, grooved-end couplings.

3.7 ACCESS DOOR

A. Furnish and install access doors wherever required whether shown or not for easy maintenance of mechanical systems; for example, at concealed valves, strainers, traps, cleanouts, dampers, motors,

controls, operating equipment, etc. Access doors shall provide for complete removal and replacement of equipment.

3.8 PIPE IDENTIFICATION

A. Provide temporary identification of each pipe installed, at the time of installation. Temporary identification shall be removed and replaced with permanent identification as part of the work.

B. Apply the legend and flow arrow at all valve locations; at all points where the piping enters or leaves a wall, partition, cluster of piping or similar obstruction, at each change of direction, and at approximately 20'-0" intervals on pipe runs. Variations or changes in locations and spacing may be made with the approval of the Architect. There shall be at least one marking in each room. Markings shall be located for maximum visibility from expected personnel approach.

C. Wherever two or more pipes run parallel, the markings shall be supplied in the same relative location on each.

D. Apply the markings after painting and cleaning of piping and insulation is completed.

3.9 EXPANSION ANCHORS IN HARDENED CONCRETE

A. Refer to Structural Drawings.

3.10 TESTS AND ADJUSTMENTS

A. Test the installations in accordance with the following requirements and all applicable codes:

1. Notify the Architect at least seven days in advance of any test.
2. Inspector of Record should witness all tests of piping systems.
3. All piping shall be tested at completion of roughing-in, or at other times as directed by the Architect.
4. Furnish all necessary materials, test pumps, gases, instruments and labor required for testing.
5. Isolate from the system all equipment that may be damaged by test pressure.

B. Should any material or work fail in any of these tests, it shall be immediately removed and replaced for new material, and portion of the work replaced shall again be tested by Contractor at his own expense.

C. Lubricate each item of equipment, including motors, before operation.

D. Testing, Evacuating, Charging and Lubrication of Refrigeration Systems:

1. Pressurize with dry nitrogen and/or refrigerant to 300 psig and test all joints with an electronic detector or halide torch. Release the pressure and attach a high vacuum pump. Evacuate to 4 mm (4000 microns) and hold for 30 minutes. Break to 5 psig with dry nitrogen and allow to remain in the system for ten minutes. Evacuate to 2 mm (2000

microns) and hold for 30 minutes. Use a mercury manometer or electronic vacuum gauge. Do not start timing until recommended vacuum range is reached.
2. At the end of the evacuation, if the system has been proved leak-free, charge with refrigerant and fill the crankcase to the oil level specified by the manufacturer. All refrigerant oil shall be delivered to the location in sealed containers.
3. Replenish for a period of one year without cost to the Owner all refrigerant and oil required to maintain the proper levels.

3.11 OPERATION OF SYSTEMS

A. Do not operate any mechanical equipment for any purpose, temporary or permanent, until all of the following has been completed:

1. Complete all requirements listed under "Check, Test and Start Requirements."
2. Ductwork and piping has been properly cleaned. Piping systems shall be flushed and treated prior to operation.
3. Filters, strainers etc. are in place.
4. Bearings have been lubricated, and alignment of rotating equipment has been checked.
5. Equipment has been run under observation, and is operating in a satisfactory manner.

B. Provide test and balance agency with one set of Contract Drawings, Specifications, Addenda, Change orders issued, applicable shop drawings and submittals and temperature control drawings.

3.12 CHECK, TEST AND START REQUIREMENTS

A. An authorized representative of the equipment manufacturer shall perform check, test and start of each piece of mechanical equipment. The representative may be an employee of the equipment manufacturer, or a manufacturer-certified contractor. Submit written certification from the manufacturer stating that the representative is qualified to perform the check test and start of the equipment.

1. As part of the submittal process, provide a copy of each manufacturer's printed startup form to be used.
2. Some items of specified equipment may require that check, test and start of equipment must be performed by the manufacturer, using manufacturer's employees. See specific equipment Articles in these Specifications for this requirement.
3. Provide all personnel, test instruments, and equipment to properly perform the check, test and start work.
4. When work has been completed, provide copies of reports for review, prior to final observation of work.

B. Provide copies of the completed check, test and start report of each item of equipment, bound with the Operation and Maintenance Manual.

C. Upon completion of the work, provide a schedule of planned maintenance for each piece of equipment. Indicate frequency of service, recommended spare parts (including filters and lubricants), and methods for adjustment and alignment of all equipment components. Provide a copy of the schedule with each Operation and Maintenance Manual. Provide a copy of certification from the Owner's representative indicating that they have been properly instructed in maintenance requirements for the equipment installed.

3.13 PRELIMINARY OPERATIONAL REQUIREMENTS AND TESTS

A. Prior to observation to determine final acceptance, put HVAC, plumbing, and fire protection systems into service and check that work required for that purpose has been done, including but not limited to the following condensed check list. Provide indexed report to tabulating the results of all work.

1. All equipment has been started, checked, lubricated and adjusted in accordance with the manufacturer's recommendations, including modulating power exhausts if present.
2. Correct rotation of motors and ratings of overload heaters are verified.
3. Specified filters are installed and spare filters have been turned over to Owner.
4. All manufacturers' certificates of start-up specified have been delivered to the Owner.
5. All equipment has been cleaned, and damaged painted finishes touched up.
6. Damaged fins on heat exchangers have been combed out.
7. Missing or damaged parts have been replaced.

8. Flushing and chemical treatment of piping systems has been completed and water treatment equipment, where specified, is in operation.
9. Equipment labels, pipe marker labels, ceiling markers and valve tags are installed.
10. Valve tag schedules, corrected control diagrams, sequence of operation lists and start- stop instructions have been posted.
11. Preliminary test and balance work is complete, and reports have been forwarded for review.
12. Automatic control set points are as designated and performance of controls checks out to agree with the sequence of operation.
13. Operation and Maintenance Manuals have been delivered and instructions to the operating personnel have been made.

B. Prior to the observation to determine final acceptance, operate all mechanical systems as required to demonstrate that the installation and performance of these systems conform to the requirements of these specifications.

1. Operate and test all mechanical equipment and systems for a period of at least five consecutive 8 hour days to demonstrate the satisfactory overall operation of the project as a complete unit.
2. Include operation of heating and air conditioning equipment and systems for a period of not less than two 8 hour days at not less than 90 percent of full specified heating and cooling capacities in tests.
3. Commence tests after preliminary balancing and adjustments to equipment have been checked. Immediately before starting tests, install air filters and lubricate all running equipment. Notify the Architect at least seven calendar days in advance of starting the above tests.
4. During the test period, make final adjustments and balancing of equipment, systems controls, and circuits so that all are placed in first class operating condition.
5. Where Utility District rebates are applicable, demonstrate that the systems meet the rebate program requirements.

C. Before handing over the system to Owner replace all filters with complete new set of filters.

D. Review of Contractor's Tests:

1. All tests made by the Contractor or manufacturers' representatives are subject to observation and review by the Owner. Provide timely notice prior to start of each test, in order to allow for observation of testing. Upon the completion of all tests, provide a letter to confirm that all testing has been successful.

E. Test Logs:

1. Maintain test logs listing the tests on all mechanical systems showing dates, items tested, inspectors' names, remarks on success or failure of the tests.

F. Preliminary Operation:

1. The Owner reserves the right to operate portions of the mechanical system on a preliminary basis without voiding the guarantee.

G. Operational Tests:

1. Before operational tests are performed, demonstrate that all systems and components are complete and fully charged with operating fluid and lubricants.
2. Systems shall be operable and capable of maintaining continuous uninterrupted operation during the operating and demonstration period. After all systems have been completely installed, connections made, and tests completed, operate the systems continuously for a period of five working days during the hours of a normal working day.

3. This period of continuous systems operation may be coordinated with the removal of Volatile Organic Compounds (VOCs) from the building prior to occupancy should the Owner decide to implement such a program.
4. Control systems shall be completely operable with settings properly calibrated and adjusted.
5. Rotating equipment shall be in dynamic balance and alignment.
6. If the system fails to operate continuously during the test period, the deficiencies shall be corrected and the entire test repeated.

3.14 ACCEPTANCE REQUIREMENTS

A. The contractor shall complete the Acceptance Requirements of the California Building Energy Efficiency Standards, including but not limited to Air Distribution Systems, Outside Air systems, Packaged HVAC Systems, VFD Systems, Hydronic System Controls, Space Conditioning Controls, Demand Control Ventilation and Air Economizers. Contractor shall perform required acceptance tests and shall complete the appropriate "Certificates of Acceptance" and submit such certificates to the authorities having jurisdiction for approval and issuance of final occupancy permit.

3.15 DEMONSTRATION AND TRAINING

A. An authorized representative of the equipment manufacturer shall train Owner-designated personnel in maintenance and adjustment of equipment. The representative may be an employee of the equipment manufacturer, or a manufacturer-certified contractor. Submit written certification from the manufacturer stating that the representative is qualified to perform the Owner training for the equipment installed.

1. As part of the submittal process, provide a training agenda outlining major topics and time allowed for each topic.
2. Some items of specified equipment require that training must be performed by the manufacturer, using manufacturer's employees. See specific equipment Articles in these Specifications for this requirement.
3. Contractor shall provide three copies of certification by Contractor that training has been completed, signed by Owner's representative, for inclusion in Operation and Maintenance Manual. Certificates shall include:

a. Listing of Owner-designated personnel completing training, by name and title.
b. Name and title of training instructor.
c. Date(s) of training.

d. List of topics covered in training sessions.

4. Refer to specific equipment Articles for minimum training period duration for each piece of equipment.

END OF SECTION 230050

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

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. Balancing Air Systems:

a. Constant-volume air systems.
b. Dual-duct systems.
c. Variable-air-volume systems.

1.3 REFERENCES

A. Associated Air Balance Council (AABC)

1. National Standards for Total System Balance, latest edition.

B. National Environmental Balancing Bureau (NEBB)

1. Procedural Standards for Testing and Balancing of Environmental Systems, latest edition.

1.4 DEFINITIONS

A. The intent of this Section is to use the standards pertaining to the TAB specialist engaged to perform the Work of this Contract, with additional requirements specified in this Section. Contract requirements take precedence over corresponding AABC or NEBB standards requirements. Differences in terminology between the Specifications and the specified TAB organization standards do not relieve the TAB entity engaged to perform the Work of this Contract of responsibility from completing the Work as described in the Specifications.

B. Similar Terms: The following table is provided for clarification only:

Similar Terms		
Contract Term	AABC Term	NEBB Term
TAB Specialist	TAB Agency	NEBB Certified Firm

TAB Standard	National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems	Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems
TAB Field Supervisor	Test and Balance Engineer	Test and Balance Supervisor

C. AABC: Associated Air Balance Council.

D. NEBB: National Environmental Balancing Bureau.

E. TAB: Testing, adjusting, and balancing.

F. TAB Organization: Body governing practices of TAB Specialists.

G. TAB Specialist: An entity engaged to perform TAB Work.

1.5 ACTION SUBMITTALS

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: Within 30 days of Contractor's Notice to Proceed, submit documentation that the TAB specialist and this Project's TAB team members meet the qualifications specified in "Quality Assurance" Article.

1. Provide list of similar projects completed by proposed TAB field supervisor.
2. Provide copy of completed TAB report, approved by mechanical engineer of record for a completed project with similar system types and of similar complexity.

B. Contract Documents Examination Report: Within 30 days of Contractor's Notice to Proceed, submit the Contract Documents review report as specified in Part 3.

1. Submit examinations report with qualifications data.

C. Strategies and Procedures Plan: Within 60 days of Contractor's Notice to Proceed, submit TAB strategies and step-by-step procedures as specified in "Preparation" Article.

D. Interim Reports. Submit interim reports as specified in Part 3. Include list of system conditions requiring correction and problems not identified in Contract Documents examination report.

E. Certified TAB reports.
1. Provide three printed copies of final TAB report. Provide one electronic file copy in PDF format.

F. Sample report forms.

G. Instrument calibration reports, to include the following:

1. Instrument type and make.

2. Serial number.
3. Application.
4. Dates of use.
5. Dates of calibration.

a. Instruments to be used for testing and balancing shall have been calibrated within a period of one year, or less if so recommended by instrument manufacturer. and be checked for accuracy prior to start of work.

1.7 QUALITY ASSURANCE

A. Independent TAB Specialist Qualifications: Engage a TAB entity certified by AABC or NEBB.

1. The certification shall be maintained for the entire duration of TAB work for this Project. If TAB specialist loses certification during this period, the Contractor shall immediately notify the Architect and submit another TAB specialist for approval. All work specified in this Section and in other related Sections performed by the TAB specialist shall be invalidated if the TAB specialist loses certification, and shall be performed by an approved successor.

B. To secure approval for the proposed TAB specialist, submit information certifying that the TAB specialist is either a first tier subcontractor engaged and paid by the Contractor, or is engaged and paid directly by the Owner. TAB specialist shall not be affiliated with any other entity participating in Work of

this Contract, including design, furnishing equipment, or construction. In addition, submit evidence of the following:

1. TAB Field Supervisor: Full-time employee of the TAB specialist and certified by AABC or NEBB.

a. TAB field supervisor shall have minimum 10 years supervisory experience in TAB work.

2. TAB Technician: Full-time employee of the TAB specialist and who is certified by AABC or NEBB as a TAB technician.

a. TAB technician shall have minimum 4 years TAB field experience.

C. TAB Specialist engaged to perform TAB work in this Project shall be a business limited to and specializing in TAB work, or in TAB work and Commissioning.

D. TAB specialist engaged to perform TAB work shall not also perform commissioning activities on this Project.

E. Certified TAB field supervisor or certified TAB technician shall be present at the Project site at all times when TAB work is performed.

1. TAB specialist shall maintain at the Project site a minimum ratio of one certified field supervisor or technician for each non-certified employee at times when TAB work is being performed.

F. Contractor shall notify Architect in writing within three days of receiving direction resulting in reduction of test and balance scope or other deviations from Contract Documents. Deviations from the TAB plan shall be approved in writing by the mechanical engineer of record for the Project.

G. TAB Standard:

1. Perform TAB work in accordance with the requirements of the standard under which the TAB agencies' qualifications are approved unless Specifications contain different or more stringent requirements:

a. AABC National Standards for Total System Balance, or

b. NEBB Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems.

2. All recommendations and suggested practices contained in the TAB standard are mandatory. Use provisions of the TAB standard, including checklists and report forms, to the extent to which they are applicable to this Project.
3. Testing, adjusting, balancing procedures, and reporting required for this Project, and not covered by the TAB standard applicable to the TAB specialist engaged to perform the Work of this Contract, shall be submitted for approval by the design engineer.

H. TAB Conference: Meet with Architect and mechanical engineer on approval of the TAB strategies and procedures plan to develop a mutual understanding of the project requirements. Require the participation of the TAB field supervisor. Provide seven days' advance notice of scheduled meeting time and location. TAB conference shall take place at location selected by Architect.

1. Agenda Items:

a. The Contract Documents examination report.
b. The TAB plan.
c. Coordination and cooperation of trades and subcontractors.

d. Coordination of documentation and communication flow, including protocol for resolution tracking and documentation.

2. The requirement for TAB conference may be waived at the discretion of the mechanical engineer of record for the Project.

I. Certify TAB field data reports and perform the following:

1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
2. Certify that the TAB team complied with the approved TAB plan and the procedures specified and referenced in this Specification.

J. TAB Report Forms: Use standard TAB specialist's forms approved by Architect .

K. Instrumentation Type, Quantity, Accuracy, and Calibration: As described in ASHRAE 111, Section 5, "Instrumentation."

1.8 WARRANTY

A. Provide workmanship and performance warranty applicable to TAB specialist engaged to perform Work of this Contract:

1. AABC Performance Guarantee.
2. NEBB Quality Assurance Program.

B. Refer to Division 01 Specifications for additional requirements.

1.9 COORDINATION

A. Notice: Provide seven days' advance notice for each test. Include scheduled test dates and times.

B. Perform TAB after leakage and pressure tests on air distribution systems have been satisfactorily completed.

C. Coordinate TAB work with work of other trades.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Contract Documents Examination Report:

1. TAB specialist shall review Contract Documents, including plans and specifications. Provide report listing conditions that would prevent the system(s) from operating in accordance with the sequence of operations specified, or would prevent accurate testing and balancing:

a. Identify each condition requiring correction using equipment designation shown on Drawings. Provide room number, nearest building grid line intersection, or other information necessary to identify location of condition requiring correction.
b. Proposed corrective action necessary for proper system operation.

B. Examine systems for installed balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are accessible.

C. Examine the approved submittals for HVAC systems and equipment.

D. Examine design data including HVAC system descriptions, statements of design assumptions for environmental conditions and systems' output, and statements of philosophies and assumptions about HVAC system and equipment controls.

E. Examine equipment performance data including fan and pump curves.

1. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.

F. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.

G. Examine test reports specified in individual system and equipment Sections.

H. Examine HVAC equipment and filters and verify that bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.

I. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible and their controls are connected and functioning.

J. Examine heat-transfer coils for correct piping connections and for clean and straight fins.

K. Examine operating safety interlocks and controls on HVAC equipment.

L. Report conditions requiring correction discovered before and during performance of TAB procedures.

M. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

3.2 PREPARATION

A. Prepare a TAB plan that includes strategies and step-by-step procedures. TAB plan shall be specific to Project and include the following:

1. General description of each air system and sequence(s) of operation.
2. Complete list of measurements to be performed.
3. Complete list of measurement procedures. Specify types of instruments to be utilized and method of instrument application.
4. Qualifications of personnel assigned to Project.
5. Single-line CAD drawings reflecting all test locations (terminal units, grilles, diffusers, traverse locations, etc.
6. Air terminal correction factors for the following:

a. Air terminal configuration.
b. Flow direction (supply or return/exhaust).
c. Effective area of each size and type of air terminal.
d. Air density.

B. Complete system-readiness checks and prepare reports. Verify the following:

1. Permanent electrical-power wiring is complete.
2. Automatic temperature-control systems are operational.

3. Equipment and duct access doors are securely closed.
4. Balance, smoke, and fire dampers are open.
5. Isolating and balancing valves are open and control valves are operational.
6. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
7. Windows and doors can be closed so indicated conditions for system operations can be met.

3.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

A. Perform testing and balancing procedures on each system according to the procedures contained in AABC's "National Standards for Total System Balance" or NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" and in this Section.

B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures.

1. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts.
2. Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish according to Section 230713 "Duct Insulation," Section 238000 Heating, Ventilating, and Air Conditioning."

C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.

D. Take and report testing and balancing measurements in inch-pound (IP) units.

3.4 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.

B. Test each system to verify building or space operating pressure, including all stages of economizer cycle. Maximum building pressure shall not exceed 0.03 inches of pressure.

C. Except as specifically indicated in this Specification, Pitot tube traverses shall be made of each duct to measure airflow. Pitot tubes, associated instruments, traverses, and techniques shall conform to ASHRAE Handbook, HVAC Applications, and ASHRAE Handbook, HVAC Systems and Equipment.
1. Use state-of-the-art instrumentation approved by TAB specialists governing agency..
2. Where ducts' design velocity and air quantity are both less than 1000 fpm/CFM, air quantity may be determined by measurements at terminals served.

D. Test holes shall be placed in straight duct, as far as possible downstream from elbow, bends, take-offs, and other turbulence-generating devices.

E. Determine the best locations in main and branch ducts for accurate duct-airflow measurements.

F. Check airflow patterns from the outdoor-air louvers and dampers and the return- and exhaust- air dampers through the supply-fan discharge and mixing dampers.

G. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.

H. Verify that motor starters are equipped with properly sized thermal protection.

I. Check dampers for proper position to achieve desired airflow path.

J. Check for airflow blockages.

K. Check condensate drains for proper connections and functioning.

L. Check for proper sealing of air-handling-unit components.

M. Verify that air duct system is sealed as specified in Section 233113 "Metal Ducts." Section 238000 "Heating, Ventilating, and Air Conditioning."

N. Provide for adjustments or modifications to fan and motor sheaves, belts, damper linkages, and other components as required to achieve specified air balance at no additional cost to Owner.

O. Automatically operated dampers shall be adjusted to operate as indicated in Contract Documents. Controls shall be checked for proper calibration.

3.5 PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS

A. Adjust fans to deliver total indicated airflows within the maximum allowable fan speed listed by fan manufacturer.

1. Measure total airflow.

a. Where sufficient space in ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow. Alternative methods shall be examined for determining total CFM, i.e., Pitot-tube traversing of branch ducts, coil or filter velocity profiles, prior to utilizing airflow values at terminal outlets and inlets.

2. Measure fan static pressures as follows to determine actual static pressure:

a. Measure outlet static pressure as far downstream from the fan as practical and upstream from restrictions in ducts such as elbows and transitions.
b. Measure static pressure directly at the fan outlet.
c. Measure inlet static pressure of single-inlet fans in the inlet duct as near the fan as possible, upstream from the flexible connection, and downstream from duct restrictions.
d. Measure inlet static pressure of double-inlet fans through the wall of the plenum that houses the fan.

3. Measure static pressure across each component that makes up an air-handling unit, rooftop unit, and other air-handling and -treating equipment.

a. Report the cleanliness status of filters and the time static pressures are measured.

4. Measure static pressures entering and leaving other devices, such as sound traps, heat- recovery equipment, and air washers, under final balanced conditions.
5. Review Record Documents to determine variations in design static pressures versus actual static pressures. Calculate actual system-effect factors. Recommend adjustments to accommodate actual conditions.
6. Obtain approval from Architect for adjustment of fan speed higher or lower than indicated speed. Comply with requirements in HVAC Sections for air-handling units for adjustment of fans, belts, and pulley sizes to achieve indicated air-handling-unit performance.

7. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan- motor amperage to ensure that no overload will occur. Measure amperage in full-cooling, full-heating, economizer, and any other operating mode to determine the maximum required brake horsepower.

B. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows within specified tolerances.

1. Measure airflow of submain and branch ducts.

a. Where sufficient space in submain and branch ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow for that zone.

2. Measure static pressure at a point downstream from the balancing damper, and adjust volume dampers until the proper static pressure is achieved.
3. Remeasure each submain and branch duct after all have been adjusted. Continue to adjust submain and branch ducts to indicated airflows within specified tolerances.

C. Measure air outlets and inlets without making adjustments.

1. Measure terminal outlets using a direct-reading digital backflow compensating hood. Use outlet manufacturer's written instructions and calculating factors only when direct-reading hood cannot be used due to physical obstruction or other limiting factors. Final report shall indicate where values listed have not been obtained by direct measurement.

D. Adjust air outlets and inlets for each space to indicated airflows within specified tolerances of indicated values. Make adjustments using branch volume dampers rather than extractors and the dampers at air terminals.

1. Adjust each outlet in same room or space to within specified tolerances of indicated quantities without generating noise levels above the limitations prescribed by the Contract Documents, if included.
2. Adjust patterns of adjustable outlets for proper distribution without drafts. Terminal air velocity at five feet above finished floor shall not exceed 50 feet per minute in occupied air conditioned spaces.

E. Do not overpressurize ducts.

3.6 PROCEDURES FOR DUAL-DUCT SYSTEMS

A. Comply with applicable requirements for constant-volume air systems in addition to those listed below.

B. Verify that the cooling coil is capable of full-system airflow, and set mixing boxes at full-cold airflow position for fan volume.

C. Measure static pressure in both hot and cold ducts at the end of the longest duct run to determine that sufficient static pressure exists to operate controls of mixing boxes and to overcome resistance in the ducts and outlets downstream from mixing boxes.

1. If insufficient static pressure exists, increase airflow at the fan.

D. Test and adjust the constant-volume mixing boxes as follows:

1. Verify both hot and cold operations by adjusting the thermostat and observing changes in air temperature and volume.
2. Verify sufficient inlet static pressure before making volume adjustments.

3. Adjust mixing boxes to indicated airflows within specified tolerances. Measure airflow by Pitot-tube traverse readings or by measuring static pressure at mixing-box taps if provided by mixing-box manufacturer.

E. Remeasure static pressure in both hot and cold ducts at the end of the longest duct run to determine that sufficient static pressure exists to operate controls of mixing boxes and to overcome resistance in the ducts and outlets downstream from mixing boxes.

F. Adjust variable-air-volume, dual-duct systems in the same way as constant-volume, dual-duct systems; adjust maximum- and minimum-airflow setting of each mixing box.

3.7 PROCEDURES FOR MOTORS

A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:

1. Manufacturer's name, model number, and serial number.
2. Motor horsepower rating.
3. Motor rpm.
4. Efficiency rating.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter manufacturer's name, model number, size, type, and thermal-protection-element rating.

a. Starter strip heater size, type, and rating.

B. Motors Driven by Variable-Frequency Controllers: Test for proper operation at speeds varying from minimum to maximum. Test the manual bypass of the controller to prove proper operation. Record observations including name of controller manufacturer, model number, serial number, and nameplate data.

3.8 PROCEDURES FOR CONDENSING UNITS

A. Verify proper rotation of fans.

B. Measure entering- and leaving-air temperatures.

C. Record compressor data.

3.9 PROCEDURES FOR HEAT-TRANSFER COILS

A. Measure, adjust, and record the following data for each refrigerant coil:

1. Dry-bulb temperature of entering and leaving air.
2. Wet-bulb temperature of entering and leaving air.
3. Airflow.
4. Air pressure drop.

3.10 TOLERANCES

A. Set HVAC system's air flow rates and water flow rates within the following tolerances:

1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus 10 percent and minus 0 percent .
2. Air Outlets and Inlets: Plus 5 percent and minus 5 percent .

3. Multiple outlets within single room: Plus 5 percent and minus 0 percent for total airflow within room. Tolerance for individual outlets within a single room having multiple outlets shall be as for "Air Outlets and Inlets".

a. Room shall be balanced to create pressure relationship (positive, negative, or neutral) with adjacent spaces as indicated on Drawings. Maintain airflow differentials between supply, return, and exhaust indicated on Drawings.

B. Set plumbing systems water flow rates within plus or minus 10 percent.

3.11 REPORTING

A. Initial Construction-Phase Report: Based on examination of the Contract Documents as specified in "Examination" Article, prepare a report on the adequacy of design for systems' balancing devices. Recommend changes and additions to systems' balancing devices to facilitate proper performance measuring and balancing. Recommend changes and additions to HVAC systems and general construction to allow access for performance measuring and balancing devices.

B. Interim Reports: Prepare periodic lists of conditions requiring correction and problems found in systems being tested and balanced. Prepare a separate report for each system and each building floor for systems serving multiple floors.

3.12 FINAL REPORT

A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.

1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing field supervisor. Report shall be co-signed by the Contractor, attesting that he has reviewed the report, and the report has been found to be complete and accurate.
2. The certification sheet shall be followed by sheet(s) listing items for which balancing objectives could not be achieved. Provide explanation for failure to achieve balancing objectives for each item listed.
3. Include a list of instruments used for procedures, along with proof of calibration.

B. Final Report Contents: In addition to certified field-report data, include the following:
1. Manufacturers' test data.
2. Field test reports prepared by system and equipment installers.
3. Other information relative to equipment performance; do not include Shop Drawings and product data.

C. General Report Data: In addition to form titles and entries, include the following data:

1. Title page.
2. Name and address of the TAB specialist.
3. Project name.
4. Project location.
5. Project Performance Guaranty
6. Architect's name and address.
7. Engineer's name and address.
8. Contractor's name and address.

9. Report date.
10. Signature of TAB supervisor who certifies the report.
11. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
12. Summary of contents including the following:

a. Indicated versus final performance.
b. Notable characteristics of systems.
c. Description of system operation sequence if it varies from the Contract Documents.

13. Nomenclature sheets for each item of equipment.
14. Data for terminal units, including manufacturer's name, type, size, and fittings.
15. Test conditions for fans and pump performance forms including the following:
a. Conditions of filters.
b. Cooling coil, wet- and dry-bulb conditions.
c. Fan drive settings including settings and percentage of maximum pitch diameter.
d. Inlet vane settings for variable-air-volume systems.
e. Settings for supply-air, static-pressure controller.
f. Other system operating conditions that affect performance.

D. System Diagrams: Include schematic layouts of air and hydronic distribution systems. Present each system with single-line diagram and include the following:

1. Quantities of outdoor, supply, return, and exhaust airflows.
2. Duct, outlet, and inlet sizes.
3. Pipe and valve sizes and locations.
4. Terminal units.
5. Balancing stations.
6. Position of balancing devices.

E. Air distribution outlets and inlets shall be shown on keyed plans with designation for each outlet and inlet matching designation used in Contract Documents and TAB test reports. Room numbers shall be included in keyed plans and test reports. Where multiple outlets and inlets are installed within a single room, a designation shall be assigned and listed for each outlet and inlet in addition to room number.

F. Test Reports – General:

1. All test reports containing air or liquid flow data shall record flow values prior to system adjustment in addition to required data listed for each test report.

G. Apparatus-Coil Test Reports:

1. Coil Data:

a. System identification.
b. Location.
c. Coil type.
d. Number of rows.
e. Fin spacing in fins per inch o.c.
f. Make and model number.
g. Face area in sq. ft.
h. Tube size in NPS.
i. Tube and fin materials.

j. Circuiting arrangement.

2. Test Data (Indicated and Actual Values):

a. Air flow rate in cfm.
b. Average face velocity in fpm.

c. Air pressure drop in inches wg.
d. Outdoor-air, wet- and dry-bulb temperatures in deg F.
e. Return-air, wet- and dry-bulb temperatures in deg F.
f. Entering-air, wet- and dry-bulb temperatures in deg F.
g. Leaving-air, wet- and dry-bulb temperatures in deg F.
h. Refrigerant expansion valve and refrigerant types.

H. Fan Test Reports: For supply, return, and exhaust fans, include the following:

1. Fan Data:

a. System identification.
b. Location.
c. Make and type.
d. Model number and size.
e. Manufacturer's serial number.
f. Arrangement and class.
g. Sheave make, size in inches, and bore.
h. Center-to-center dimensions of sheave, and amount of adjustments in inches.

2. Motor Data:

a. Motor make, and frame type and size.
b. Horsepower and rpm.
c. Volts, phase, and hertz.
d. Full-load amperage and service factor.
e. Sheave make, size in inches, and bore.
f. Center-to-center dimensions of sheave, and amount of adjustments in inches.
g. Number, make, and size of belts.

3. Test Data (Indicated and Actual Values):

a. Total airflow rate in cfm.
b. Total system static pressure in inches wg.
c. Fan rpm.
d. Discharge static pressure in inches wg.
e. Suction static pressure in inches wg.

I. Round, Flat-Oval, and Rectangular Duct Traverse Reports: Include a diagram with a grid representing the duct cross-section and record the following:

1. Report Data:

a. System and air-handling-unit number.
b. Location and zone.
c. Traverse air temperature in deg F.
d. Duct static pressure in inches wg.
e. Duct size in inches.
f. Duct area in sq. ft..

g. Indicated air flow rate in cfm.
h. Indicated velocity in fpm.
i. Actual air flow rate in cfm.
j. Actual average velocity in fpm.
k. Barometric pressure in psig.

J. Air-Terminal-Device Reports:

1. Unit Data:

a. System and air-handling unit identification.
b. Location and zone.
c. Apparatus used for test.
d. Area served.
e. Make.
f. Number from system diagram.
g. Type and model number.
h. Size.
i. Effective area in sq. ft.

2. Test Data (Indicated and Actual Values):

a. Air flow rate in cfm.
b. Air velocity in fpm.
c. Preliminary air flow rate as needed in cfm.
d. Preliminary velocity as needed in fpm.
e. Final air flow rate in cfm.
f. Final velocity in fpm.
g. Space temperature in deg F.

K. Instrument Calibration Reports:

1. Report Data:

a. Instrument type and make.
b. Serial number.
c. Application.
d. Dates of use.
e. Dates of calibration.

3.13 INSPECTIONS

A. Initial Inspection:

1. After testing and balancing are complete, operate each system and randomly check measurements to verify that the system is operating according to the final test and balance readings documented in the final report.

2. Check the following for each system:

a. Measure airflow of at least 10 percent of air outlets.
b. Measure water flow of at least 5 percent of terminals.
c. Measure room temperature at each thermostat/temperature sensor. Compare the reading to the set point.
d. Verify that balancing devices are marked with final balance position.

e. Note deviations from the Contract Documents in the final report.

B. Final Inspection:

1. After initial inspection is complete and documentation by random checks verifies that testing and balancing are complete and accurately documented in the final report, request that a final inspection be made by Architect .
2. The TAB specialist's test and balance engineer shall conduct the inspection in the presence of Architect .
3. Architect shall randomly select measurements, documented in the final report, to be rechecked. Rechecking shall be limited to either 10 percent of the total measurements recorded or the extent of measurements that can be accomplished in a normal 8-hour business day.
4. If rechecks yield measurements that differ from the measurements documented in the final report by more than 10 percent, the measurements shall be noted as "FAILED."
5. If the number of "FAILED" measurements is greater than 10 percent of the total measurements checked during the final inspection, the testing and balancing shall be considered incomplete and shall be rejected.

C. TAB Work will be considered defective if it does not pass final inspections. If TAB Work fails, proceed as follows:

1. Recheck all measurements and make adjustments. Revise the final report and balancing device settings to include all changes; resubmit the final report and request a second final inspection.
2. If the second final inspection also fails, Owner may contact the TAB specialists' governing organization for remedial action by the governing organization under the workmanship and performance warranty. See article, Warranty.
3. If remedial action is not provided by the TAB specialists' governing organization in a timely manner, Owner may contract the services of another TAB specialist to complete the TAB Work according to the Contract Documents and deduct the cost of the services from the original TAB specialists' final payment.

D. Prepare test and inspection reports.

3.14 ADDITIONAL TESTS

A. Seasonal Periods: If initial TAB procedures were not performed during near-peak summer and winter conditions, perform additional TAB during near-peak summer and winter conditions.

END OF SECTION 230593

SECTION 238000 – HEATING, VENTILATING AND AIR CONDITIONING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Split system air conditioning units.

B. Refrigeration piping and fittings.

C. Air inlets and outlets.

D. Terminal Units.

E. Dampers.

F. Ductwork.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 23 00 50, Basic HVAC Materials and Methods.

C. 23 05 93, Testing, Adjusting, and Balancing for HVAC.

1.3 ADDITIONAL REQUIREMENTS

A. Furnish and install any incidental work not shown or specified which is necessary to provide a complete and workable system.

B. Coordinate all of work in this Section with all of the Trades covered in other Sections of the Specifications to provide a complete, operable and sanitary installation of the highest quality workmanship.

1.4 DESCRIPTION OF WORK

A. Work of this section includes, but is not necessarily limited to Heating, Ventilating and Air Conditioning work indicated on the drawings and described herein.

1.5 QUALITY ASSURANCE

A. Design Criteria:

1. All equipment and accessories to be the product of a manufacturer regularly engaged in its manufacture. All gas-fired equipment shall be UL, ETL or CSA listed.

2. Supply all equipment and accessories in accordance with requirements of applicable national, state and local codes.
3. All items of a given type shall be products of the same manufacturer.
4. Scheduled equipment performance is minimum capacity required.
5. Scheduled electrical capacity shall be considered as maximum available.
6. Scheduled gas BTU input shall be considered as maximum available.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, including rated capacities of selected model clearly indicated, dimensions, weight, corner or mounting point weights, furnished specialties and accessories; and installation and start-up instructions. Product data shall include applicable product listings and standards. Refer to Section 23 00 50, Basic HVAC Material and Methods for additional requirements.

1. Upon approval of submittal, provide manufacturer's installation and operating instructions to the Project inspector for the following:

a. Fire dampers, smoke dampers, and combination smoke-fire dampers.

B. Engineering Data: Submit fan curves and sound power level data for each fan unit. Data shall be at the scheduled capacity. Data shall include the name of the rating agency or independent laboratory.

C. Maintenance Data: Submit maintenance data and parts list for each piece of equipment, control, and accessory; including "trouble-shooting guide," in Operation and Maintenance Manual.

D. Record Drawings: At project close-out, submit Record Drawings of installed ductwork, duct accessories, and outlets and inlets in accordance with requirements of Division 01.

E. Product Data for California Green Building Standards Code Compliance: For adhesives and sealants, including primers, documentation of compliance including printed statement of VOC content and chemical components.

1.7 COORDINATED LAYOUT

A. Coordinated layouts are required to amplify, expand and coordinate the information contained in the Contract Documents.

B. Provide minimum 1/4 inch equals one foot scaled coordination drawings showing plan and pertinent section or elevation views of all piping, ductwork and electrical systems. Drawings shall be on vellum or sepia mylar, reproducible and the work represented shall be fully coordinated with the structure, other disciplines, and with all finishes. Drawings shall all be presented on a single size sheet. Contractor may use either size D (24 inch x 36 inch) or E (36 inch x 42 inch). Drawings graphics shall fully comply with A.I.A. Architectural Graphic Standards and ANSI Y14. Drawings may be hand drawn or computer generated using AutoCad or "Quick Pen". All drawings shall have title block, key plan, north arrow and sufficient grid lines to provide cross-reference to the design drawings.

1. Provide a stamp or title block on each drawing with locations for signatures from all contractors involved, including but not limited to the General, HVAC, Plumbing, Fire Protection, and Electrical contractors. Include statement for signature that the contractor

has reviewed the coordination drawings in detail and has coordinated the work of his trade.
2. Show on drawings the intended elevation of all ductwork in accordance with the following example.
B.O.D. = 9'-0"
OFFSET UP 6"
B.O.D. = 9'-6"
3. Highlight, encircle or otherwise indicate deviations from the Contract Documents on the coordinated layouts. Architect will not be responsible for "finding" changes or deviations to the original Contract Documents.

C. Since scale of contract drawings is small and all offsets and fittings are not shown, contractor shall make allowances in bid for additional coordination time, detailing, fittings, offsets, hangers and the like to achieve a fully coordinated installation. If changes in duct size are required, equivalent area shall be maintained and the aspect ratio shall not be in excess of 2 to 1 unless approved by the engineer. Drawings shall be submitted for review prior to fabrication and installation. Drawings may be submitted in packages representing at least one quarter of the building ductwork.

D. Check routing on all ductwork before fabricating. Report any discrepancies to Architect. No extra cost will be allowed for failure to conform to above.

E. It shall be responsibility of the General Contractor to ensure that the Heating, Ventilating and Air Conditioning Contractor coordinates all of his work with all other trades, including mechanical and electrical trades, so that complete job is neat and in conformity with plans and specifications.

1.8 REFERENCES

A. AABC - Associated Air Balance Council

B. AFBMA - Anti Friction Bearing Manufacturer's Association

C. CSA – Canadian Standards Association International

D. AMCA - Air Moving and Control Association Inc.

1. Standard 210 - Laboratory Methods of Testing Fans

E. ANSI - American National Standards Institute

F. ARI - Air-Conditioning and Refrigeration Institute

G. ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers

H. ASME - American Society of Mechanical Engineers

I. ASTM - American Society of Testing and Materials

J. CCR - California Code of Regulations

K. CSFM - California State Fire Marshal

L. NIST - National Institute of Standards and Technology

M. NEMA - National Electrical Manufacturer's Association

N. NFPA - National Fire Protection Association

O. OSHA - Occupational Safety and Health Act

P. SMACNA - Duct Manuals

Q. CBC - California Building Code

R. UL - Underwriters' Laboratories, Inc.

S. CMC - California Mechanical Code

T. CPC - California Plumbing Code

U. CEC - California Electrical Code

PART 2 - PRODUCTS

2.1 MATERIALS

A. Insulation products, including insulation, insulation facings, jackets, adhesives, sealants and coatings shall not contain polybrominated diphenyl ethers (PBDEs) in penta, octa, or deca formulations in amounts greater than 0.1 percent (by mass).

2.2 SPLIT SYSTEM AC UNIT

A. General: Furnish and install split system air conditioner, with R410A refrigerant, and complete with automatic controls. Equipment shall be shipped factory assembled, wired, tested, and ready for field connections.

B. Quality Assurance:

1. Unit shall be ETL or UL listed and labeled.
2. Unit shall be manufactured in a facility registered to ISO 9001:2000.
3. Unit shall be rated in accordance with ARI standard 210.

C. Delivery, Storage and Handling: Follow manufacturer's recommendations.

D. Cooling System: The total certified cooling capacity shall not be less than scheduled. The compressor power input shall not exceed that of the unit specified.

E. Indoor Section: Wall mounted, as indicated on Drawings.

1. Cabinet:

a. Wall mounted: Molded white high strength plastic.

1) Provide wall mounted unit with factory mounting plate.

2. Fans: Double inlet, forward curved, statically and dynamically balanced.

3. Fan Motor: Direct drive, permanently lubricated, with two or 4 speed operation for unit size scheduled on Drawings.

a. For single-phase fan motors sized larger than 1/12 hp and smaller than 1 hp, refer to Article, Electric Motors, in Section 23 00 50, Basic HVAC Materials and Methods.

4. Air Outlet: With motorized horizontal and vertical vanes.

a. Wall and ceiling surface mounted units: Horizontal vane shall close air outlet upon unit shut-down.

5. Evaporator Coil: Aluminum fins mechanically bonded to copper tubes. Coils shall be pressure leak tested.

6. Insulation: Interior surfaces exposed to the airstream shall be fully insulated.

F. Outdoor Section:

1. Casing: Galvanized steel plate, powder coated with acrylic or polyester.
2. Condenser Fan Grille: ABS plastic.
3. Fan and fan motor: Direct drive, totally enclosed, propeller type, permanently lubricated, horizontal discharge.
4. Compressor: Variable speed rotary type, with crankcase heater and accumulator. Compressor shall be capable of operating at 0 degrees F. Compressor mounted on vibration isolator pads.
5. Coil: Aluminum fins mechanically bonded to copper tubes. Coils shall be pressure leak tested. Provide coil with integral metal guard.

G. Controls: Hard wired, microprocessor based, wall mounted controller with LCD display shall provide the following functions, as a minimum:

1. 7-day programmable timer.
2. Test and check functions.
3. Diagnostic functions.
4. Vane position control.
5. Fan speed adjustment.
6. Temperature adjustment.
7. Automatic restart.
8. Mode selection, including cool/dry/fan.

a. Provide lockable enclosure for wall mounted controller.

H. Safeties: Shall include the following, as a minimum:

1. Five minute compressor anti-recycle timer.
2. High pressure protection.
3. Current and temperature sensing motor overload protection.

I. Filters: Provide 1 inch thick fiberglass throwaway filters with cardboard holding frames for indoor unit. Provide sufficient filters for four complete changes for each unit.

J. Service Access: All components, wiring, and inspection areas shall be completely accessible through removable panels.

K. Refrigerant Piping:

1. Provide factory pre-charged and sealed line set piping, length to suit the location of equipment. Tubing sizes shall be in accordance with manufacturers written instructions.

L. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

Mitsubishi Electric Corporation. Carrier Corporation
Sanyo Electric Co., Ltd.

M. Owner Training: Manufacturer shall provide one on-site 2-hour training session for Owners' maintenance personnel.

2.3 REFRIGERATION PIPE AND FITTINGS

A. Refrigeration gas and liquid piping shall be type ACR hard drawn copper tubing, cleaned and capped in accordance with ASTM B280, with wrought copper fittings. All joints shall be brazed with Sil-fos under nitrogen purge. Relief valve discharge piping shall be full size of relief discharge port.

1. Manufactured, pre-charged and pre-insulated refrigerant line-set refrigerant piping may be utilized at Contractor's discretion.

B. Refrigeration Piping Specialties: Furnish and install Superior, Sporlan, Alco, Henry, or equal, stop valves, solenoid valves, adjustable thermal expansion valves, sight glass, flexible connection, charging valve, and drier with valve bypass in the liquid lines and Superior DFN shell and cartridge suction line filter sized 2-1/2 times tonnage.

1. Install only those refrigeration piping specialties recommended by manufacturer of specific installed equipment.

2.4 AIR INLETS AND OUTLETS

A. Except as otherwise indicated, provide manufacturer's standard outlets and inlets where shown; of size, shape, capacity and type indicated; constructed of materials and components as indicated, and as required for complete installation.

B. Ceiling, wall or floor Compatibility: Provide outlets with border styles that are compatible with adjacent ceiling, wall or floor systems, and that are specifically manufactured to fit into ceiling, wall or floor module with accurate fit and adequate support. Refer to general construction drawings and specifications for types of ceiling systems that will contain each type of air outlet and inlet.

C. Refer to Schedule on Mechanical Drawings for details of inlets and outlets to be used.

2.5 AIR TERMINAL UNITS

A. Shutoff, Dual-Duct Air Terminal Units:

1. Configuration: Volume-damper assembly inside unit casing with control components inside a protective metal shroud.
2. Casing: 0.034-inch-thick galvanized steel, single wall .

a. Casing liner: Fibrous-glass duct liner, complying with ASTM C 1071, NFPA 90A, or NFPA 90B; and with NAIMA AH124, "Fibrous Glass Duct Liner Standard."

1) Minimum Thickness: 1/2 inch .
2) Surface-Burning Characteristics: Maximum flame-spread index of 25 and maximum smoke-developed index of 50 when tested according to UL 723; certified by an NRTL.
3) Antimicrobial Erosion-Resistant Coating: Apply to the surface of the liner that will form the interior surface of the duct to act as a moisture repellent and erosion-resistant coating. Antimicrobial compound shall be tested for
efficacy by an NRTL and registered by the EPA for use in HVAC systems.
4) Water-Based Liner Adhesive: Comply with NFPA 90A or NFPA 90B and with ASTM C 916. Adhesive VOC Content: 80 g/L or less.

a) Inlets and Outlets: Air inlet shall be round or rectangular stub connection or S-slip and drive connections for duct attachment. Air outlet shall be S-slip and drive connections, size matching inlet size.
b. Access: Removable panels for access to parts requiring service, adjustment, or maintenance; with airtight gasket.
c. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.

3. Volume Damper: Galvanized steel with peripheral gasket and self-lubricating bearings.

a. Maximum Damper Leakage: AHRI 880 rated, 2 percent of nominal airflow at 3- inch wg 6-inch wg inlet static pressure.
4. Controls:

a. Control devices shall be compatible with existing building temperature controls system

1) Electronic Damper Actuator: 24 V, powered open, spring closed.

5. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:

Price Limited. Titus.
Johnson Controls, Inc.

2.6 DAMPERS

A. Manual Air and Balance Dampers: Provide dampers of single blade type or multi-blade type constructed in accordance with SMACNA, "HVAC Duct Construction Standards," except as noted herein.

1. Rectangular Ductwork:

a. Single damper blades may be used in ducts up to 10 inches in height. Dampers shall be 16 gauge minimum. Provide self-locking regulators, equal to Ventlok 641. Provide end bearings equal to Ventlok 607 at each damper. Provide continuous solid 3/8 inch square shafts.

b. Multiple blade dampers shall be equal to Ruskin CD35 Standard Control Damper. Maximum width for multiple damper blades for use in rectangular duct shall not exceed 6 inches.
c. Where duct velocity may be expected to exceed 1500 fpm, provide Ruskin CD-50, or equal, low leakage dampers with airfoil blades.

2. Round Ductwork:

a. Single damper blades may be used in ducts up to 12 inches in diameter. Provide multiple blade opposed blade dampers, with connected linkage, for ductwork larger than 12 inches in diameter.
b. Damper blades for round ductwork shall be 20 gauge steel for ducts up to 12 inches diameter and 16 gauge steel for dampers larger than 12 inches damper. Provide self-locking regulators, equal to Ventlok 641, Durodyne, or equal for operation of dampers. Provide end bearings equal to Ventlok 607 and provide continuous solid 3/8 inch square shafts.

3. Where ductwork is externally insulated, provide self-locking regulators equal to Ventlok 644, Durodyne, or equal for rectangular ductwork, and Ventlok 637, Durodyne, or equal for round ducts.

2.7 DUCTWORK

A. Construct and install sheet metal ductwork in accordance with the California Mechanical Code for 4 inches static pressure upstream of terminal units and 2 inches minimum downstream of terminal units for supply air, and 2 inches minimum for return and exhaust air unless otherwise noted on Drawings.

1. Where not in conflict with the California Mechanical Code, construct and install all sheet metal ductwork in accordance with SMACNA HVAC Duct Construction Standards (Metal and Flexible). Where applicable for HVAC work, construct and install sheet metal work in accordance with SMACNA Architectural Sheet Metal Manual.
2. Provide variations in duct size, and additional duct fittings as required to clear obstructions and maintain clearances as approved by the Architect at no extra cost to the Owner.
3. Gauges, joints and bracing shall be in accordance with the California Mechanical Code.
4. Provide beading or cross breaking for all ductwork inside building. Provide cross breaking for ductwork exposed to weather.
5. At the contractor's option, ductwork may be fabricated using the Ductmate, Nexus, Quickduct, Transverse Duct Connection (TDC), Pyramid-Loc duct connection systems, or equal. Fabricate in strict conformance with manufacturer's written installation instructions and in accordance with California Mechanical Code.

a. Seal flanged ends with pressure sensitive high density, closed cell neoprene or polyethylene tape gasket, Thermo 440, or equal.
b. Provide metal clips for duct connections, except at breakaway connections for fire dampers and fire smoke dampers. Provide corner clips at each corner of duct, through bolted, at all locations except at breakaway connections for fire dampers and fire smoke dampers. Where used on locations exposed to weather, provide continuous metal clip at top and sides of duct, with 1 inch overhang for top side.

B. Design and installation standards:

1. SMACNA Compliance: Comply with applicable portions of Sheet Metal and Air Conditioning Contractor's National Association (SMACNA) for all work in this section.
2. NFPA Compliance: Comply with ANSI/NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems," and ANSI/NFPA 90B, "Standard for the Installation of Warm Air Heating and Air Conditioning Systems."
3. California Mechanical Code.

C. Fabricate all ductwork with sheet metal. Fiberglass ductwork will not be accepted for use on this project.

D. Duct sizes indicated are external sizes.

E. Galvanized Sheet Steel: Lock-forming quality, ASTM A924 and ASTM A653, Coating Designation G 90. Provide mill phosphatized finish for exposed surfaces of ducts exposed to view.

1. Provide mill certification for galvanized material at request of the Project Inspector.

F. Duct Sealing:

1. Sealant shall have a VOC content of 250 g/L or less.
2. Sealant shall comply with testing and product requirements of South Coast Air Quality Management District, Rule 1168.
3. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
4. Seal airtight all joints and seams, including standing seams and manufactured joints and seams, of all supply, return and exhaust ducts except those exposed in conditioned space. Provide one part, non-sag, synthetic latex sealant, formulated with a minimum of 68 percent solids. Sealant shall comply with ASTM E84, Surface Burning Characteristics.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

1) Design Polymerics, model DP1010
2) Polymer Adhesive Sealant Systems Inc, model Airseal #11
3) McGill Airseal, LLC

5. Seal airtight and watertight joints and seams of ductwork exposed to weather with 6 ounce canvas bonded to ductwork with Foster 30-36 adhesive; cover canvas with heavy coat of Foster 56-10 coating, no dilution. Provide basis of design product or equal by Mon-Eco Industries, Inc., or McGill Airseal, LLC.

a. Pressure-sensitive tapes or single part sealant not acceptable.
b. Where seams are exposed to weather, paint seams with aluminum paint. Provide cross broken ductwork, and ensure that the ductwork will shed water. Beading of duct work exposed to weather will not be considered acceptable.

G. Provide sheet metal angle frame at all duct penetrations to wall, floor, roof, or ceiling.

H. Duct Support Materials: Except as otherwise indicated, provide hot-dipped galvanized steel fasteners, anchors, straps, trim, and angles for support of ductwork.

I. Rectangular Duct Fabrication:

1. Shop fabricate ductwork of gauges and reinforcement complying with the more stringent of the following standards, except as noted herein.

a. SMACNA HVAC Duct Construction Standards
b. California Mechanical Code

2. Fabricate ducts for 2 inch pressure class with minimum duct gauges and reinforcement as follows, except as otherwise noted:

Duct Dimension	Minimum Gauge	Joint Reinforcement Per CMC
Through 12"	26	Not Required
13" through 18"	24	Not Required
19" through 30"	24	C/4
31" through 42"	22	E/4
43" through 54"	22	F/2
55" through 60"	20	G/4
61" through 84"	20	I/2
85" through 96"	20	J/2
Over 96"	18	K/2

3. Fabricate duct fittings to match adjoining ducts and to comply with duct requirements as applicable to fittings. Except as otherwise indicated, fabricate elbows with center-line radius equal to 1.5 times associated duct width. Fabricate to include single thickness turning vane in elbows where space does not permit the above radius or where square elbows are shown. Limit angular tapers to 30 degrees for contracting tapers and 20 degrees for expanding tapers. Turning vanes shall be E-Z Rail II, Durodyne, or equal.
4. Fabricate round supply connections at rectangular, plenum type fittings using spin-in type fittings, complete with extractor and volume control damper. Refer to Paragraph "DAMPERS" for damper requirements.
5. Provide drive slip or equivalent flat seams for ducts exposed in the conditioned space or where necessary due to space limitations. On ducts with flat seams, provide standard reinforcing on inside of duct. Duct connection to outlet on exposed duct shall be full size of outer perimeter of outlet flange.
6. Ducts exposed in the conditioned space shall be free of dents and blemishes and be mounted tight against adjacent surface with flat hangers. Remove all fabrication labels from ductwork.
7. Provide 20 gauge minimum for ductwork exposed within occupied spaces.

J. Rectangular Internally Insulated Duct Fabrication:

1. Provide internal duct lining where indicated on the Drawings, with a minimum of 10'-0" length in each direction from the fan, fan casing, or unit casing. Line all transfer ducts.

a. Where ductwork is exposed to weather or outside the building insulation envelope, provide 2 inch thick, 1-1/2 pound density internal lining with matte facing, with an R-Value of 8.0 minimum.

b. Where ductwork is within the building insulation envelope, lining shall be 1" thick, 1-1/2 pound density, with R-value of 4.2 minimum.
c. Ducts exposed in the conditioned space shall be free of dents and blemishes and be mounted tight against adjacent surface with flat hangers. Remove all fabrication labels from ductwork.
d. Where installed exposed in the conditioned space, duct shall be minimum 20 gauge with 1 inch insulation layer (minimum R-value – R-4.2).
e. Cement duct liner in place with nonflammable, non-hardening duct adhesive. Seal all raw edges of insulation inside ductwork with adhesive, including longitudinal liner edges.
f. Provide metal nosing at all locations where liner is preceded by unlined metal.
g. Provide sheet metal weld pins and washers or clinch pins and washers on all ductwork on 12 inch intervals with the first row within 3 inches of the leading edge of each piece of insulation and within 4 inches of corners. No use of adhesive mounted pins will be considered.

1) Install clinched pin fasteners with properly adjusted automatic fastening equipment. Manual installation will not be considered.
2) Install weld pins with properly adjusted automatic fastening equipment. Installation shall not damage the galvanized coating on the outside of the duct.

h. All ductwork, adhesives, lining, sealant, flex duct and the like shall have a flame spread of 25 or less and developed smoke rating of 50 or less when tested in accordance with one of the following test methods: NFPA 255, ASTM E84, or UL 723.
i. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

Manufacturer:	Product:		
Johns Manville	Duct Liner PM	CertainTeed Corporation	ToughGard
Fosters Adhesive	85-62		
Swifts Adhesive	7336		

K. Round and Oval Ductwork Fabrication:

1. Round and oval duct and fittings shall be spiral lockseam or longitudinal seam as indicated in table below. Provide couplings to join each length of duct.

a. At contractors' option, round or oval ductwork may be utilized in place of rectangular ductwork shown on Drawings, provided available space allows installation of round or oval ductwork without compromising space required for installation of products and systems of other trades.

1) Round or oval ductwork utilized in place of rectangular ductwork shown on Drawings shall be sized to have a static pressure loss equivalent to rectangular duct shown on Drawings.
2) Unlined round or oval duct shall not be utilized in place of rectangular internally lined ductwork shown on Drawings.

2. Fabricate duct fittings to match adjoining ducts and to comply with duct requirements as applicable to fittings. Except as otherwise indicated, fabricate elbows with center-line radius equal to 1.5 times associated duct width. Provide two-piece, die-stamped, 45-degree to 90-degree elbows for sizes up to 12 inches; five-piece, 90-degree elbows for sizes 12 inches and above; conical tees; and conical laterals. All reducers shall be placed after a tap has been made on the duct main. Reducers shall be long-taper style.
3. Round Ductwork: Construct of galvanized sheet steel complying with ANSI/ASTM A 653 by the following methods and in minimum gauges listed.

Diameter	Minimum Gauge	Methodof Manufacture
Up to 14"	26	Spiral Lockseam
15" to 23"	24	Spiral Lockseam
24" to 36"	22	Spiral Lockseam
37" to 50"	20	Spiral Lockseam
51" to 60"	18	Spiral Lockseam
Over 60"	14	Longitudinal Seam

4. Provide locked seams for spiral duct; fusion welded butt seam for longitudinal seam duct.

5. Fittings and Couplings: Construct of minimum gauges listed. Provide continuous welds along seams at exposed ducts. Provide spot weld bonded seams at concealed ducts.

Diameter	MinimumGauge
3" to 36"	20
38" to 50"	18
Over 50"	16

6. Ducts exposed in the conditioned space shall be free of dents and blemishes and be mounted tight against adjacent surface with flat hangers. Remove all fabrication labels from ductwork.
7. Provide 20 gauge minimum for ductwork exposed within occupied spaces.

L. Duct Access Doors:

1. Duct Access: Provide hinged access door in rectangular ducts for access to fire dampers, control equipment, etc. Access door size shall be duct diameter wide by duct diameter high for all ducts under 24 inches. Ducts over 24 inches in diameter shall have 24-inch by 18-inch access doors. Minimum size access doors shall be 6 inches by 6 inches.
2. Provide hinged style access doors for round ductwork, NCA Manufacturing, Inc., Model AD-RD-87, Pottorff Series 60, or equal. Access doors shall be 16 gauge galvanized steel with continuous piano hinge. Locks shall be plated steel strike and catch. Provide 1" x 3/8" Polyethylene "Perma Stik" gasket all around door.

M. Flexible Air Ducts:

1. Provide exterior reinforced laminated vapor barrier, fiberglass insulation, encapsulated spring steel wire Helix, and impervious, smooth, non-perforated interior vinyl liner.

Individual lengths of flexible ducts shall contain factory fabricated steel connection collars.

a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following, or equal:

C.A. Schroeder, Inc., Cal Flex model 2PMJ ThermaFlex model M KC

2. Factory made air ducts shall be approved for the use intended and shall conform to the requirements of UL 181 and NFPA 90A. Each portion of a factory-made air duct system shall be identified by the manufacturer with a label or other suitable identification indicating compliance with UL 181, Class 1. Ducts shall be UL listed Class 1, maximum 25/50 smoke and flame spread and shall be installed in accordance with the terms of their listing and the requirements of SMACNA HVAC Duct Construction Standards (Metal and Flexible). Factory-made air ducts shall have the following minimum R-values: R-6.0 for ductwork installed within the building insulation envelope, R-8.0 for ductwork installed outside the building insulation envelope.
3. Flexible ductwork shall be maximum of 8 feet long, and shall be extended to the fullest possible length, in order to minimize pressure drop in the duct.
4. Flexible ducts shall be selected for minimum of 6 inch positive static pressure and minimum of 1 inch negative static pressure.

5. Duct Access Panels:

a. Provide duct access panel assembly of the same material and gauge used for the duct. Duct access panels shall conform to the following:

1) Fasteners: Black steel or stainless steel to match material used for the duct.

Panel fasteners shall not penetrate duct wall.
2) Gasket: Comply with NFPA 96, grease-tight, high temperature ceramic fiber, rated for minimum 1500 °F.

PART 3 - EXECUTION

3.1 INSTALLATION OF SPLIT SYSTEM AC UNITS

A. General:

1. Install units level and plumb.
2. Install evaporator-fan components as detailed on Drawings.
3. Install condensing units indoors as detailed on Drawings.
4. Install seismic restraints as required by applicable codes. Refer to Article, Submittals, in Section 23 00 50, Basic HVAC Materials and Methods, for delegated design requirements for seismic restraints.
5. Install and connect refrigerant piping as detailed in unit manufacturers' literature. Install piping to allow access to unit.
6. Install cooling coil condensate primary drain pan piping, and overflow, if provided, and run to nearest code-compliant receptacle, or as indicated on Drawings. Install secondary drain pan for units installed over permanent and suspended-tile ceilings. Install secondary drain pan piping and terminate 1/2 inch below ceiling, with escutcheon, in a readily visible location or as shown on Drawings.

7. Install air filters at each indoor unit. Install washable, permanent filters at indoor units designed to accept washable, permanent filters. Refer to Drawings schedule, and Article, Air Filters, in this Section, for filter requirements for ducted, above-ceiling units incorporating mixing boxes.
8. Duct Connections: Duct installation requirements are specified in Article, Ductwork, in this Section. Drawings indicate the general arrangement of ducts. Connect supply and return ducts to split-system air-conditioning units with flexible duct connectors. Flexible duct connectors are specified in Article, Ductwork, in this Section.

3.2 REFRIGERANT PIPING INSTALLATION

A. General:

1. Install refrigerant piping according to ASHRAE 15. Install and connect refrigerant piping as detailed in unit manufacturers' literature. Install piping to allow access to unit.
2. Install piping straight and free of kinks, restrictions or traps.
3. Install piping as short and direct as possible, with a minimum number of joints, elbows, and fittings.
4. Slope horizontal suction piping 1 inch/10 feet towards compressor.
5. Install fittings for changes in direction and branch connections.
6. Piping under raised floors shall be kept 6 inches minimum above ground; excavate as necessary.
7. Install locking caps on refrigerant access valves located outside building, including valves located on roofs.
8. Insulate refrigerant piping, including liquid and hot gas pipes when required by system manufacturer, and including headers, branches, and other components as detailed in unit manufacturers' literature. Refer to Article, Insulation Work, in Section 23 00 50, Basic HVAC Materials and Methods.

B. Factory Pre-charged and sealed line set piping:

1. Keep the entire system clean and dry during installation.
2. All tubing shall be evacuated and sealed at the factory. The seal must not be broken until ready for assembly.
3. If there is any evidence of dust, moisture, or corrosion, the tubing must be cleaned out by drawing a swab soaked with methyl alcohol through the tubing as many times as necessary to thoroughly clean the tubing.
4. Where line set piping is used, enclose in iron or steel piping and fittings or in EMT conduit.

3.3 AIR INLETS AND OUTLETS

A. Provide all air inlets and outlets with gaskets and install so that there will be no streaking of the walls or ceilings due to leakage. Duct connection to outlet on exposed duct shall be full size of outer perimeter of outlet flange.

B. Unless otherwise indicated on Drawings, provide rectangular plenum on top of each diffuser and ceiling return for connection to ductwork. Line plenum with internal insulation as indicated for lined ductwork. Size plenum to allow full opening into air terminal.

C. Ceiling-mounted air terminals or services installed in T-Bar type ceiling systems shall be positively attached to the ceiling suspension main runners or to cross runners with the same carrying capacity as the main runners.

1. Terminals or services weighing not more than 56 pounds shall have two No. 12 gauge hangers connected from the terminal or service to the structure above. These wires may be slack.
2. Support terminals or services weighing more than 56 pounds directly from the structure above by approved hangers. Provide 4 taut 12 gauge wires each, attached to the fixture and to the structure above. The 4 taut 12 gauge wires, including their attachment to the structure above must be capable of supporting 4 times the weight of the unit.
3. Secure air inlets and outlets to main runners of ceiling suspension system with two #8 sheet metal screws at opposing corners.

D. Furnish all air inlets and outlets with a baked prime coat unless otherwise noted. Provide off-white baked enamel finish on ceiling-mounted air inlets and outlets. Paint exposed mounting screws to match the material being secured.

E. Air inlets and outlets shall match all qualities of these specified including appearance, throw, noise level, adjustability, etc.

3.4 AIR TERMINAL UNIT INSTALLATION

A. Install air terminal units according to NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems."

B. Install air terminal units level and plumb. Maintain sufficient clearance for normal service and maintenance.

C. Where installing piping adjacent to air terminal unit, allow space for service and maintenance.

D. Connect heating coils to supply with shutoff valve, strainer, control valve, and union or flange; and to return with balancing valve and union or flange, or as detailed on Drawings.

3.5 DAMPERS

A. Provide opposed blade manual air dampers at each branch duct connection and at locations indicated on the drawings and where necessary to control air flow for balancing system. Provide an opposed blade balancing damper in each zone supply duct. Provide an access panel or Ventlok flush type damper regulator on ceiling or wall for each concealed damper.

B. Provide 18 inch x 12 inch minimum hinged access doors in ductwork and furring for easy access to each fire damper; insulated access doors in insulated ducts. Label access doors with 1/2 inch high red letters.

1. Provide Ventlok Series 100, Durodyne, or equal access doors with hardware for convenient access to all automatic dampers and other components of the system, insulated type in insulated ducts. Provide Ventlok #202 for light duty up to 2 inch thick doors, #260 heavy-duty up to 2 inch thick doors and #310 heavy-duty for greater than 2 inch thick doors. Provide #260 hinges on all hinged and personnel access doors; include gasketing.

3.6 INSTALLATION OF DUCTWORK

A. Assemble and install ductwork in accordance with recognized industry practices which will achieve air tight and noiseless (no objectionable noise) systems capable of performing each

indicated service. Install each run with minimum of joints. Align ductwork accurately at connections within 1/8 inch misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers, and anchors of type which will hold ducts true to shape and to prevent buckling. Where possible, install ductwork to clear construction by 1/4 inch minimum, except at air inlets and outlets. Where ductwork will not clear construction, secure duct firmly to eliminate noise in the system.

B. Duct Joints: Install duct sealers, pop rivets or sheet metal screws at each fitting and joint. Duct sealer shall be fire retardant. Sheet metal screw for joints shall be minimum #10 size galvanized.

C. Applicable Leakage Classes:

PressureClass	LeakageClass	
	Round Duct	Rectangular Duct
2"W.G. or less	12	12
4"W.G. or greater	3	6

D. Install concrete inserts for support of ductwork in coordination with formwork as required to avoid delays in work.

E. Where ducts pass through interior partitions and exterior walls, conceal space between construction opening and duct or duct plus insulation with sheet metal flanges of same gauge as duct. Overlap opening on four sides by at least 1-1/2 inches.

F. Support ductwork in manner complying with SMACNA "HVAC Duct Construction Standards," hangers and supports sections. Where special hanging of ductwork is detailed or shown on Drawings, Drawings shall be followed. Angles shall be attached to overhead construction in a manner so as to allow a minimum of 2 inches of movement in all directions with no bending or sagging of the angle.

1. Except where modified in individual paragraphs of this Section, provide hanger support with minimum 18 gauge straps, 1 inch wide. Fold duct strap over at bottom of duct.
2. Install duct supports to rectangular ducts with sheet metal screws. Provide one screw at top of duct and one screw into strap at bottom of duct.

G. Installation of Flexible Ductwork:

1. Provide flexible ducts with supports at 30 inch centers with 2 inch wide, 26 gauge steel hanger collar attached to the structure with an approved duct hanger. Installation shall minimize sharp radius turns or offsets.

a. Supports shall be in accordance with SMACNA HVAC Duct Construction Standards (Metal and Flexible).
b. Make bends to maintain R/W-1.5.

2. Make connections to rigid duct and units with Panduit style draw band at inner liner material, and a second draw band over the outer vapor barrier material.
3. Make connection to duct with spin-in fittings, with air scoop and balance damper.

3.7 DUCTWORK SEALING AND LEAK TESTING

A. Retrofit Construction, including alterations to existing duct system or space conditioning equipment: All duct systems (supply, return, outside air intake and exhaust), except those exposed in the conditioned space, shall be sealed and leak tested in strict conformance with the requirements of the 2013 California Building Energy Efficiency Standards. See drawings for extent of this work and leakage rate requirements. The leakage rate shall be confirmed through field verification and diagnostic testing in accordance with the procedures set forth in the 2013 California Building Energy Efficiency Standards Reference Appendices. Contractor shall also complete the Acceptance Requirements in the standards for duct sealing/leak testing. Refer to Section 23 00 50 for additional information on Acceptance Requirements.

3.8 TEMPERATURE CONTROL SYSTEM

A. Provide thermostats where indicated on drawings. Provide all relays, transformers and the like to render the control system complete and fully operable. Conform with existing building control system installation requirements.

3.9 EQUIPMENT START-UP

A. Initial start-up of the systems and pumps shall be under the direct supervision of the Contractor.

B. Equipment start-up shall not be performed until the piping systems have been flushed and treated and the initial water flow balance has been completed.

C. It shall be the responsibility of the Contractor to assemble and supervise a start-up team consisting of controls contractor, start-up technician, and test and balance contractor; all to work in concert to assure that the systems are started, balanced, and operate in accordance with the design.

D. After start-up is complete, instruct the Owner's personnel in the operation and maintenance of the systems. Obtain from the Owner's representative a signed memo certifying that instruction has been received.

3.10 TESTING AND BALANCING

A. For testing and balancing requirements, refer to Section 23 05 93, Testing and Balancing for HVAC.

3.11 CLEANING AND PROTECTION

A. As each duct section is installed, clean interior of ductwork of dust and debris. Clean external surfaces of foreign substances that might cause corrosive deterioration of metal or where ductwork is to be painted.

B. Strip protective paper from stainless steel ductwork surfaces, and repair finish wherever it has been damaged.

C. Temporary Closure: At ends of ducts that are not connected to equipment or air distribution devices at time of ductwork installation, provide temporary closure of polyethylene film or other covering that will prevent entrance of dust and debris until connections are to be completed.

D. As each internally lined duct section is installed, check internal lining for small cuts, tears, or abrasions. Repair all damage with fire retardant adhesive.

3.12 ACCEPTANCE REQUIREMENTS

A. In addition to the testing and balancing requirements specified in Section 23 05 93, the Contractor shall also be responsible to complete the Acceptance Requirements of the 2013 California Building Energy Efficiency Standards. Refer to Section 23 00 50 for additional information on Acceptance Requirements.

3.13 EQUIPMENT MOUNTING

A. Mount and anchor equipment in strict compliance with Drawings details. Alternate anchorage methods will not be considered for roof mounted equipment.

END OF SECTION 238000

SECTION 26 05 00 – COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under Division 26.

B. Related work under this section

1. Labor and materials required to furnish and install the electrical systems in a complete and operational fashion.

2. Carpentry, masonry, steel and concrete materials and labor required for construction of proper stands, bases and supports for electrical materials and equipment.

3. Cutting and patching of holes required by installation including flashing and counter-flashing of roof and exterior wall penetrations.

4. Excavating, pumping and backfilling required for installation.

5. Repair of damage to the premises resulting from construction activities under this Section to Owner's satisfaction.

6. Removal of work debris from construction activities to Owner's satisfaction.

7. Testing and cleaning of equipment installed.

C. Work not under this section

1. Furnishing of motors, fans, compressors, water heaters, thermostats and motor starters included under Division 23, or as noted otherwise.

2. Furnishing of motors, fans, compressors, water heaters, thermostats and motor starters included under Division 23, or as noted otherwise.

3. Electrical Contractor shall provide connections to mechanical equipment where voltage exceeds 50 V and all necessary raceways for low voltage controls.

D. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and nature of related work and properly coordinate work specified herein with that specified elsewhere to provide a complete and working installation.

a. The General Conditions and General Requirements, Division 1, are a part of and are to apply to all the work of this Division.

b. Site Construction –Division 31: Earthwork, Boring

c. Concrete –Division 3: All sections

d. Metals –Division 5: Structural Metal Framing

e. Wood and Plastic –Division 6: Rough Carpentry

f. Thermal and Moisture Protection – Division 7:Dampproofing and Waterproofing, Flashing, Fire and Smoke Protection

g. Doors and Windows – Division 8: Access Doors

h. Finishes – Division 9: Painting and Coatings

i. Equipment – Division 11: As provided

j. Special Construction – Division 13: As provided

k. Mechanical –Division 23:Heat-Generation Equipment, Refrigeration Equipment, HVAC Equipment, HVAC Instrumentation and Controls

1.2 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:\

1. CCR –California Code of Regulations

a. Title 8 –Industrial Relations; Division 1 –Department of Industrial Relations

1) Chapter 3.2 -California Occupational Safety and Health Regulations (CAL/OSHA)

2) Chapter 4 –Division of Industrial Safety

a) Subchapter 4 -Construction Safety Orders (CSO)

b) Subchapter 5 -Electrical Safety Orders (ESO)

b. Title 24 –California Building Standards

1) Part 1 -Building Standards Administrative Code

2) Part 2 -California Building Code (CBC); International Building Code (IBC) with California amendments

3) Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

4) Part 4 -California Mechanical Code (MEC); IAPMO Uniform Mechanical Code (UMC) with California amendments

5) Part 5 -California Plumbing Code; IAPMO Uniform Plumbing Code (UPC) with California amendments

6) Part 6 -California Energy Code

7) Part 7 -California Elevator Safety Construction Code

8) Part 9 -California Fire Code; WFCA Uniform Fire Code (UFC) with California amendments

9) Part 12 -California Reference Standards Code

2. CPUC –California Public Utilities Commission

a. GO-95; Rules for Overhead Electric Line Construction

b. GO-128; Rules for Construction of Underground Electric Supply and Communication Systems

3. IEEE –Institute of Electrical and Electronic Engineers

a. C2; National Electrical Safety Code (NESC)

4. NECA –National Electrical Contractors Association

a. 1; Standard Practices for Good Workmanship in Electrical Contracting

b. 4090; Manual of Labor Units

5. All applicable local municipal codes and ordinances.

6. Applicable rules and regulations of local utility companies.

1.3 SUBMITTALS

A. Product data

1. Prior to commencement of work and within 35 days after award of Contract, submit in ample time for approval in accordance with Division 1 a complete list of furnished equipment, material and shop drawings, including all substitutions. Partial or incomplete lists of materials will not be considered. Substitutions will be considered thereafter.

a. Where it is in the best interest of Owner, Engineer may give written consent to a submittal received after expiration of designated time limits or for an additional re-submittal.

B. Closeout submittal

1. Furnish three complete sets of maintenance and operating instructions bound in a binder and indexed to Owner. Start compiling data upon approval of materials and equipment. Final inspection will not be made until Engineer approves binders. Refer also to Division 1 for additional requirements.

2. Provide one of each tool required for proper equipment operation and maintenance provided under this Section. All tools shall be delivered to the Owner at project completion.

3. Provide two keys to Owner for each lock furnished under Division 26.

4. Record drawings

a. Upon completion of Work, furnish Engineer with complete sets of plans (not marked blueprints) upon which shall be shown all work installed under Contract, which are not in accordance with the Construction Documents. Refer to Division 1 requirements.

b. All symbols and designations used in preparing Record Drawings shall match those used in Construction Documents.

1.4 SUBSTITUTIONS

A. If it is desired to make a substitution, the Contractor shall clearly identify each substitution on the submittal, and to submit complete information or catalog data to show equality of equipment or material offered to that specified. Substitutions will be interpreted to be all manufacturers other than those specifically listed by model or catalog number within these Specifications and Drawings. No substitution

will be allowed unless identified, requested and approved in writing. Materials of equal merit and appearance, in the opinion of the Engineer, will be approved for use. Architect and Engineer reserve the right to require originally specified items at no additional costs to Owner. Only one request for substitutions will be considered on each item of material or equipment.

B. Acceptance of a substitute is not to be considered a release from the Specifications. Correct any deficiencies in an item, even though approved at the Contractor's expense.

C. Responsibility for installation of approved substitution is included herein. Make any changes required for installation of approved substituted equipment without additional costs.

D. Failure to comply with any of the requirements of the above will necessitate that the specified materials be submitted and supplied.

1.5 CHANGE ORDER PROPOSALS

A. Shall comply with the requirements set forth by the General Conditions

B. All change order proposals and requests, both additive and deductive, shall be accompanied by a detailed materials and labor breakdown for each specific task and/or item.

1. All change order proposals and change orders, both additive and deductive, shall be based upon and be accompanied by a detailed materials and labor breakdown for each specific task and/or item. The breakdown shall include actual materials costs plus overhead and profit, as well as labor units base upon the most recent NECA Manual of Labor Units (NECA Index #4090) or equivalent publication for each specific task and item. Labor costs shall be computed as outlined within the General Conditions, based upon the NECA labor tables for each task required. Materials costs shall include actual Contractor invoice plus no more than 15% markup. The Owner and Contractor agree to the above change order cost procedure, for both additive and deductive change orders.

1.6 QUALITY ASSURANCE

A. References to codes, standards, specifications and recommendations of technical societies, trade organizations and governmental agencies shall mean that latest edition of such publications adopted and published prior to bid submittal. Such codes or standards shall be considered a part of this Specification as though fully repeated herein.

B. Work and materials shall be in full accordance with the latest rules and regulations of applicable state of local laws or regulations and standards of following:

1. National Fire Protection Association (NFPA)
2. California Electrical Code (CEC)
3. California Occupational Safety Health Act (Cal-OSHA)
4. California State Fire Marshall (CSFM)
5. California Code of Regulations (CCR)
6. Electrical Safety Orders, CAC Title 8 (ESO)
7. California Public Utilities Commissions, General Order 95 (GO-95)
8. Applicable rules and regulations of local utility companies.
9. NECA 1-2000, Standard Practices for Good Workmanship in Electrical Contracting

C. All electrical equipment and material furnished under Division 26 shall conform to all CEC/NEC requirements and bear the Underwriters' Laboratories (UL) label where applicable.

D. Nothing in the Construction Documents shall be construed to permit work not conforming to these Codes. Whenever the indicated material, workmanship, arrangement or construction is of high

quality or capacity than that required by the above rules and regulations, the Construction Documents shall take precedence. Should there be any direct conflict between the rules and regulations and Construction Documents, the rules shall govern.

E. All electrical equipment and material furnished under this Section shall conform to NEMA and ASTM standards, NEC/CEC and bear the Underwriters' Laboratories (UL) label where such label is applicable.

F. All electrical work shall conform to manufacturer's written instruction, and the NECA Standard Practices for Good Workmanship in Electrical Contracting and all published recommended practices at the time of project. The Contractor shall use the requirements within the Specifications whenever they exceed NECA guidelines.

G. Follow manufacturer's direction where these direction cover points not included with the Construction Documents.

1.7 DELIVERY, STORAGE AND HANDLING

A. Packing, shipping, handling and unloading

1. Damage to the equipment delivered to the site or in transit to the job shall be the responsibility of the Electrical Contractor.

2. Equipment and material delivery of shall be scheduled as required for timely, expeditious progress of work.

B. Storage and protection of job equipment is the responsibility Contractor.

C. Comply with Division 1 requirements with regards to waste management and disposal.

1.8 PROJECT CONDITIONS

A. Discrepancies

1. In the event of discrepancies with the Contract Documents, Engineer shall be notified with sufficient time as stated within Division 1 to allow the issuing of an addendum prior to the bid opening.

2. If, in the event that time does not permit notification of clarification of discrepancies prior to the bid opening, the following shall apply:

a. The drawings govern in matters of quantity and specifications govern in matters of quality.

b. In the event of conflict within the drawings and specifications involving quantities or quality, the greater quantity or higher quality shall apply. Such discrepancies shall be noted and clarified within the contractor's bid. No additional allowances will be made because of errors, ambiguities or omissions which reasonably should have been discovered during the bid preparation.

B. Verify all power and communication utilities' requirements prior to commencement of any utility work. Make proper adjustments to the construction to satisfy the serving utility.

C. Information shown relative to services is based upon available records and data, but shall be regarded as approximate only. Make minor deviations found necessary to conform to actual locations and conditions without extra cost. Verify locations and elevations of utilities prior to commencement of excavation for new underground installation.

D. Exercise extreme care in excavating near existing utilities to avoid any damage thereto; be responsible for any damage caused by such operations. Contact all utility companies to obtain exact locations prior to commencement of construction.

E. The electrical plans indicate the general layout and arrangement; the architectural drawings and field conditions shall determine exact locations. Field verify all conditions and modify as required to satisfy design intent. Maintain all required working clearances.

F. Fees, permits and utility services

1. Obtain and pay for all permits and service charges required for the installation of this work. Arrange for required inspections and secure approvals from authorities having jurisdiction. Arrange for all utility connections and pay charges incurred including excess service charges if any.

2. Extra charges imposed by the electrical and communication utility companies shall be included in the bid, if available. Unless otherwise stated, these charges will be assumed to be included in the bid.

G. Provide and maintain temporary construction power. The General Contractor or Owner will pay for electric energy charges; refer to Division 1 for details. Should the Electrical Contractor be the prime contractor, the Electrical Contractor shall pay for energy charges unless negotiated with Owner.

1.9 SEQUENCING

A. Coordinate work within phasing plans as provided by the Owner.

1.10 WARRANTY

A. Furnish one-year minimum guarantee in accordance with and in form required under Division 1. Repair or replace as may be necessary any defective work, material, or part without cost to the Owner, include repair or replacement of other work, furnishing, equipment or premises caused by such repair or replacement of defective work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials mentioned herein or on Drawings require that the items be provided and of quality noted or an approved equal. All materials shall be new, full weight, standard in all respects and in first-class condition. Insofar as possible, all materials used shall be of the same brand or manufacturer throughout for each class of material or equipment.

B. Trade names or catalog numbers stated herein indicts grade or quality of material desired. Materials, where applicable, shall UL labeled and in accordance with NEMA standards.

C. Dimensions, sizes and capacities shown are a minimum. Do not make changes without written permission of Engineer

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine Construction Documents and Site; be familiar with types of construction where electrical installation is involved. Note carefully other sections of Specifications with their individual cross-references, standard details, etc.

B. Any electrical work or materials shown either in Construction Documents, but not mentioned herein, or vice versa, shall be executed the same as if mentioned herein,

in a workmanlike manner in accordance with all published NECA Standards of Installation.

C. Coordinate work with other crafts to avoid conflicts, and check all outlet locations with Architectural and Mechanical drawings and specifications. Make minor adjustments without additional cost to Owner.

D. Engineer will make clarifications and rulings concerning any obvious discrepancies or omissions in work prior and after bidding. Perform all work involved in correcting obvious errors or omissions after award of contract as directed by Engineer at Contractor's expense.

E. Examine site dimensions and locations against Drawings and become informed of all conditions under which work is to be done before submitting proposals. No allowance will be made for extra expense due to error.

F. Layouts of equipment, accessories and wiring systems are diagrammatic (not pictorial), but shall be followed as closely as possible. Construction Documents are for assistance and guidance, and exact locations, distance, levels, etc., will be governed by construction; accept same with this understanding.

G. Horsepower of motors or wattage of equipment indicated in Construction Documents is estimated horsepower or wattage requirement of equipment furnished under other sections of Specifications. Size all feeders (conduit and wiring), motor starters, overload protection and circuit breakers to suit horsepower of motors or wattage of equipment actually furnished under various sections of specifications. However, in no case shall feeders and branch circuits (conduit and wiring) and circuit breakers be of smaller capacities or sizes than those indicated on Drawings or specified, unless approved in writing by Engineer.

3.2 PREPARATION

A. Seal all exterior wall penetrations in an approved watertight manner and to the satisfaction of Engineer and Architect.

B. Channels, joiners, hangers, caps, nuts and bolts and associated parts shall be plated electrolytically with zinc followed immediately thereafter by treating freshly deposited zinc surfaces with chromic acid to obtain a surface which will not form a white deposit on surface for an average of 120 hours when subjected to a standard salt spray cabinet test, or shall be hot dipped galvanized

3.3 INSTALLATION

A. Equipment identification

1. Properly identify panelboards, remote control switches, push buttons, terminal boxes, etc. with a descriptive nameplate. Make nameplate with 3/32" laminated plastic with black background and white letters. Machine engraved letters 1/8" high for equipment in device box(es) and 1/4" high for panelboards, terminal cabinets or larger items. Punched strip type nameplates and cardholders in any form are not acceptable. Fasten nameplates with oval head machine screws, tapped into front cover/panel.

B. Working spaces

1. Provide adequate working space around electrical equipment in compliance with Article 4 of Electrical Safety Orders and CEC/NEC 110.26. In general provide 78" of headroom and 30" wide minimum clear workspace in front of panelboards and controls. In addition to the above, provide the following minimum working clearances:

a. 0V – 150V (line-to-ground) provide 36" minimum clear distance.

b. 151V – 600V (line-to-ground) provide 42" minimum clear distance.

C. Equipment supports

1. Anchor all electrical equipment to structure. Support systems shall be adequate to withstand seismic forces per CBC.

D. Excavating and backfilling

1. Excavate and backfill as required for installation of Work. Restore all surfaces, roadways, walks, curbs, walls existing underground installations, etc., cut by installations to original condition in an acceptable manner. Maintain all warning signs, barricades, flares and lanterns as required by ESO and local ordinances.

2. Dig trenches straight and true to line and grade, with bottom clear of any rock points. Support conduit for entire length on undisturbed original earth. Minimum conduit depth of pipe crown shall be 24" below finished or natural grade, unless otherwise noted.

E. Forming, cutting and patching

1. In new construction, General Contractor shall provide any special forming, recesses, chased, etc., and provide wood blocking, backing and grounds as necessary for the proper installation of electrical work. Be responsible for notifying General Contractor that such provision is necessary; layout work and check to see that it suits his requirements.

a. Provide metal backing plates, anchor plates and such that are required for anchorage of electrical work under Division 26; securely weld or bolt to metal framing. Wood blocking or backing will not be permitted in combination with metal framing.

2. Be responsible for proper placement of pipe sleeves, hangers, inserts and supports for this Work.

F. Concrete work

1. Provide concrete work related solely to electrical work. Concrete work, including forming and reinforcing steel installed for all electrical work, shall comply with all applicable requirements of Division 3, or in accordance with the State of California Standard Specifications issued by the Department of Transportation (CALTRANS).

3.4 REPAIR/RESTORATION

A. Cutting, patching and repairing of existing construction to permit installation of work under Division 26 is the responsibility of Contractor. Repair or replace all damage to existing work in kind to Owner's satisfaction.

B. Obtain Engineer's approval prior to performing any cutting or patching of concrete, masonry, wood or steel structure within building.

3.5 FIELD QUALITY CONTROL

A. Inspection of work

1. Working parts shall be readily accessible for inspection, repair and renewal. The right is reserved to make reasonable changes in equipment location shown on Drawings prior to rough in without additional costs to the Owner.

2. During construction all work will be subject to observation by the Engineer and his representatives. Assist in ascertaining any information that maybe required.

3. Do not allow or cause any work installed hereunder to be covered up or enclosed before it has been inspected and approved. Should any work be enclosed or covered prior to approval, uncover work, and after it has been inspected and approved, restore work of all others to the condition in which it was found at the time of cutting, all without additional costs to Owner.

B. Furnish all testing equipment as maybe required.

C. Test all wiring and connections for continuity and grounds; where such tests indicate faulty insulation or other defects, locate, repair and re-test.

D. Check rotation of all motors and correct if necessary.

3.6 CLEANING

A. Repair or replace all broken, damaged or otherwise defective parts without additional cost to Owner, and leave entire work in a condition satisfactory to Engineer. At completion, carefully clean and adjust all equipment, fixtures and trim installed as part of this work; leave systems and equipment in satisfactory operating condition.

B. Clean out and remove from the site all surplus materials and debris resulting from this work; this includes surplus excavated materials.

3.7 DEMONSTRATION

A. At project completion, Contractor shall allot a period of not less than 8 hours for instruction of operating and maintenance personnel in the use of all systems installed under this Section. This time is in addition to any instruction time stated in the Specifications of other sections for other equipment (i.e., fire alarm, security, intercom, etc.). All personnel shall be instructed at one time, the Contractor shall make all necessary arrangements with manufacturer's representatives as may be required. Contractor, if any, for the above services shall pay all costs.

3.8 PROTECTION

A. In performance of work, protect work of other trades as well as work under this Section from damage.

B. Protect electrical equipment, stored and installed, from dust, water or other damage.

END OF SECTION 26 05 00

SECTION 26 05 26 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the item specified under this Section, including but not limited to power system grounding

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24

a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

2. IEEE –Institute of Electrical and Electronic Engineers

a. 142; Recommend Practices for Grounding of Industrial and Commercial Power Systems

3. NFPA –National Fire Protection Association

a. 780; Lightning Protection Code

4. UL –Underwriters Laboratories, Inc.

a. 467; Grounding and Bonding Equipment

1.3 SYSTEM DESCRIPTION

A. This Section provides for the grounding and bonding of all electrical and communication apparatus, machinery, appliances, components, fittings and accessories where required to provide a permanent, continuous, low impedance, grounded electrical system.

B. Ground the electrical service system neutral at service entrance equipment as shown on the Drawings.

C. Ground each separately derived system, as defined in CEC/NEC 250-5(d) and on the Drawings, unless specifically noted otherwise.

D. Except as otherwise indicated, the complete electrical installation including the neutral conductor, equipment and metallic raceways, boxes and cabinets shall be

completely and effectively grounded in accordance with all CEC/NEC requirements, whether or not such connections are specifically shown or specified.

1.4 SUBMITTALS

A. Submit manufacturer's data for equipment and materials specified within this Section in accordance to Section 26 05 00.

1.5 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

PART 2 - PRODUCTS

2.1 GROUND CONDUCTOR

A. Ground conductor shall be code size UL labeled, Type THWN insulated copper wire, green in color.

2.2 MAIN BUILDING REFERENCE GROUND BUS (BGB)

A. Provide 1 24"x4"x1/4" TK copper bus bar mounted on wall with insulating stand-offs at +18" AFF. Furnish complete with cast copper alloy body Thomas Betts Series 310 or equal lugs for connecting grounding conductors. Attach lugs to bus with appropriate size bronze bolt, flat washer and Belleville washer. All connections shall be torque, and all holes shall be drilled and tapped for single hole lugs. Provide 4 spare lugs with respective spaces.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Grounding electrode conductor

1. Provide grounding electrode conductors per CEC/NEC Table 250-94 or as shown on Drawings, whichever is greater.

B. Power system grounding

1. Connect the following items using code size copper grounding conductors to BGB or as shown on Drawings:

a. Concrete encased electrode (Ufer ground)

b. Ground rod(s)

c. Incoming cold and fire water pipes

d. Gas pipe

e. Structural steel

f. Distribution transformer secondary

C. Equipment Bonding/Grounding

1. Provide a code sized copper ground conductor, whether indicated or noted on the drawings, in each of the following:

a. All power distribution conduits and ducts

b. Distribution feeders

c. Motor and equipment branch circuits\

d. Device branch circuits

2. Provide a separate grounding bus at distribution panelboards, loadcenters, switchboards and motor control centers. Connect all metallic enclosed equipment so that with maximum fault current flowing, shall be maintained at not more than 35V above ground.

3. Metallic conduits terminating in concentric, eccentric or oversized knockouts at panelboards, cabinets, gutters, etc. shall have grounding bushings and bonding jumpers installed interconnecting all such conduits.

4. Provide bonding jumpers across expansion and deflection coupling in conduit runs, pipe connections to water meters and metallic cold water dielectric couplings.

5. Provide ground wire in flexible conduit connected at each end via grounding bushing.

6. Provide bonding jumpers across all cable tray joints.

7. Bond each end of metallic conduit longer than 36" in length to grounding conductor using a #6 AWG pigtail.

3.2 FIELD QUALITY CONTROL

A. Contractor using test equipment expressly designed for that purpose shall perform all ground resistance tests in conformance with IEEE quidelines. Contractor shall submit typewritten records of measured resistance values to Engineer for review and approval prior to energizing the system.

B. Obtain and record ground resistance measurements both from electrical equipment ground bus to the ground electrode and from the ground electrode to earth. Furnish and install additional bonding and add grounding electrodes as required to comply with the following resistance limits:

1. Resistance from ground bus to ground electrode and to earth shall not exceed 5 ohms unless otherwise noted.

2. Resistance from the farthest panelboard, loadcenter, switchboard or motor control center ground bus to the ground electrode and to earth shall not exceed 20 ohms maximum.

C. Inspection

1. The Engineer or Inspector prior to encasement, burial or concealment thereto shall review the grounding electrode and connections.

END OF SECTION 26 05 26

SECTION 26 05 33 – RACEWAYS AND BOXES

PART 1 - GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to electrical conduits; outlet, junction and pull boxes; and related supports.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

a. 26 05 26 – Grounding and Bonding for Electrical Systems

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. ANSI –American National Standards Institute

a. C33.91; Specification for Rigid PVC Conduit

b. C80.1; Specification Rigid Steel Conduit, Zinc-Coated

c. C80.3; Specification for Electrical Metallic Tubing, Zinc-Coated

d. C80.6; Intermediate Metal Conduit (IMC), Zinc-Coated

2. CCR –California Code of Regulations, Title 24

a. Part 2 -California Building Code (CBC); ICBO Uniform Building Code (UBC) with California amendments

b. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

3. NECA –National Electrical Contractors Association

a. 101, Standard for Installing Steel Conduit (Rigid, IMC, EMT)

b. 111, Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) (ANSI)

4. NEMA –National Electrical Manufacturer's Association

a. FB 1; Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable

b. FB 2.10; Selection and Installation Guidelines for Fittings for Use with Non- flexible Electrical Metal Conduit or Tubing (Rigid Metal Conduit, Intermediate Metal Conduit, and Electrical Metallic Tubing)

c. FB 2.20; Selection and Installation Guidelines For Fittings for Use With Flexible Electrical Conduit and Cable

d. OS 1; Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports

e. OS 3; Selection and Installation Guidelines for Electrical Outlet Boxes

f. RN 1; Polyvinyl-Chloride Externally Coated Galvanized Rigid Steel Conduit and Electrical Metallic Tubing

g. TC 2; Electrical Plastic Tubing and Conduit

h. TC 3; PVC Fittings for Use with Rigid PVC Conduit and Tubing

i. TC 14; Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

5. OSHPD Anchorage Pre-approvals

a. OPA-0003; Superstrut Seismic Restraint System

b. OPA-0114; B-Line Seismic Restraints

c. OPA-0120; Unistrut Seismic Bracing System

d. OPA-0242; Power-Strut Seismic Bracing System

6. UL –Underwriter's Laboratories, Inc.

a. 1; Standard for Flexible Metal Conduit

b. 6; Rigid Metal Electrical Conduit

c. 360; Standard for Liquid-Tight Flexible Steel Conduit

d. 514A; Metallic Outlet Boxes, Electrical

e. 514B; Fittings for Conduit and Outlet Boxes

f. 651; Schedule 40 & 80 PVC Conduit

g. 797; Electrical Metallic Tubing

h. 1242; Intermediate Metal Conduit

i. 1684; Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

1.3SYSTEM DESCRIPTION

A. Furnish, assemble, erect, install, connect and test all electrical conduits and related raceway apparatus required and specified to form a complete installation.

1.4SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.5QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

B. Installation shall conform to the NECA installation guidelines unless otherwise indicated within this Section

PART 2 - PRODUCTS

2.1MATERIALS

A. Conduits and Fittings

1. Rigid steel conduit (RMC)

   a. Conduit: Standard weight, mild steel pipe, and zinc coated on both inside and outside by a hot dipping or shearardizing process manufactured in accordance with UL 6 and ANSI C80.1 specifications.

   b. Fittings (couplings, elbows, bends, etc.)

      1) Shall be steel or malleable iron.

      2) Coupling and unions shall be threaded type, assembled with anti-corrosion, conductive and anti-seize compound at joints made absolutely tight to exclude water.

   c. Bushings

      1) Insulating bushings: Threaded polypropylene or thermosetting phenolic rated at 150□C minimum.

      2) Insulating grounding bushing: Threaded cast body with insulating throat and steel "lay-in" ground lug.

      3) Insulating metallic bushing: Threaded cast body with plastic insulated throat rated at 150□C minimum.

2. Intermediate metallic conduit(IMC)

   a. Conduit: Intermediate weight, mild steel pipe, meeting the same requirements for finish and material as rigid steel conduit manufactured in accordance with UL 1242 and ANSI C80.6 specifications

   b. Fittings (couplings, elbows, bends, etc.) equivalent to RMC above.

   c. Bushing equivalent to RMC above.

3. Electrical metallic tubing (EMT)

   a. Conduit: Cold rolled steel tubing with zinc coating on outside and protective enamel on inside manufactured in accordance with UL 797 and ANSI C80.3 specifications.

   b. Couplings: Steel or malleable iron with compression type fastener via a nut.

   c. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150□C minimum.

4. Rigid non-metallic conduit (PVC)

   a. Conduit: PVC composed Schedule 40, 90□C manufactured in accordance with NEMA TC 2 and UL 651 specifications.

   b. Fittings: Molded PVC, slip on solvent welded type in accordance to NEMA TC 3.

5. Flexible metallic conduit (FMC)

a. Conduit: Continuous, flexible steel spirally wound with zinc coating on both inside and outside in accordance with UL 1.

b. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150□C minimum.

6. Miscellaneous Fittings and Products

a. Conduit sealing bushings: Steel or cast malleable iron body and pressure clamps with PVC sleeve, neoprene sealing grommets and PVC coated steel pressure rings. Supplied with neoprene sealing rings between body and PVC sleeve.

b. Watertight cable terminators: One piece, compression molded sealing ring with PVC coated steel pressure disks, stainless steel screws and zinc plated cast iron locking collar.

c. Watertight cable/cord connectors: Liquidtight steel or cast malleable iron body with sealing neoprene bushing and stainless steel retaining ring.

d. Expansion fittings: Multi-piece unit of hot dip galvanized malleable iron or steel body and outside pressure bussing design to allow a maximum of 4" movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. UL listed for both wet and dry locations.

e. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve, internal flexible tinned copper braid attached to bronze end couplings with stainless steel bands. Coupling to provide minimum of 3/4" movement and 30 degrees deflection from normal. UL listed for both wet and dry locations.

f. Conduit bodies: Raintight, malleable iron, hot-dip galvanized body with threaded hubs, stamped steel cover, stainless steel screws and neoprene gasket.

g. Other couplings, connectors and fittings shall be equal in quality, material and construction to items specified herein.

B. Boxes

1. Outlet boxes

a. Standard: Galvanized one-piece of welded pressed steel type in accordance with NEMA OS 1 and UL 514. Boxes shall not be less than 4" square and at least 1 1/2" deep.

b. Concrete: Galvanized steel, 4" octagon ring with mounting lug, backplate and adapter ring type in accordance with NEMA OS 1 and UL 514. Depth as required by application.

c. Masonry: Galvanized steel, 3.75" high gang box in accordance with NEMA OS 1 and UL 514.

d. Surface cast metal: Cast malleable iron body, surface mounted box with threaded hubs and mounting lugs as required in accordance with NEMA OS 1 and UL 514. Furnish with ground flange, steel cover and neoprene gasket.

2. Pull and junction boxes

a. Sheet metal boxes: Standard or concrete outlet box wherever possible; otherwise use 16 gauge galvanized sheet metal, NEMA 1 box sized per CEC with machine screwed cover.

b. Cast metal boxes: Install standard cast malleable iron outlet or device box when possible.

c. Flush mounted boxes: Install overlapping cover with flush head screws.

d. In-ground mounted pull holes/boxes: Install pre-cast concrete box, sized per Drawing or CEC with pre-cast or traffic rated lid.

3. Floor boxes

a. Floor boxes shall be adjustable, cast metal body with threaded conduit openings, adjustable rings, brass flange or Lexan ring and cover plate with threaded plug. Include provisions to accommodate surface mounted telephone or receptacle outlet, or flush floor mounted telephone or receptacle outlet where shown on Drawings.

C. Pull line/cord

1. Polypropylene braided line or Let-line #232 or equal of 1/8" diameter with a minimum break strength of 200 pounds.

PART 3 - EXECUTION

3.1EXAMINATION

A. Thoroughly examine site conditions for acceptance of wire and cable installation to verify conformance with manufacturer and specification tolerances. Do not commence with work until all conditions are made satisfactory.

3.2PREPARATION

A. Conduit

1. Provide all necessary conduit fittings, connectors, bushings, etc. required to complete conduit installation to meet the CEC/NEC and intended application whether noted, shown or specified within.

2. Location of conduit runs shall be planned in advance of the installation and coordinated with other trades.

3. Where practical, install conduits in groups in parallel vertical or horizontal runs that avoid unnecessary offsets.

4. All conduits shall be parallel or at right angles to columns, beams and walls whether exposed or concealed.

5. Conduits shall not be placed closer than 12" to a flue, parallel to hot water, steam line or other heat sources; or 3" when crossing perpendicular to the above said lines when possible.

6. Install exposed conduit as high as practical to maintain adequate headroom. Notify Engineer if headroom will be less than 102".

7. Do not obstruct spaces required by Code in front of electrical equipment, access doors, etc.

8. The largest trade size conduit in concrete floors and walls shall not exceed 1/3 thickness or be spaced a less than three conduit diameters apart unless permitted by Engineer. All conduits shall be installed in the center of slab or wall, and never between reinforcing steel and bottom of floor slab.

9. Install additional pull boxes, not shown on Drawings, in sufficient quantities to facilitate pulling of conductors and cables such that total spacing does not exceed 150 feet or 270 degrees, total; and maximum pulling tension will not be exceeded.

10. When installing underground conduits to specified depth; depth shall be taken from finished grade as it will be at project completion. Should finish grade be above existing grade by an amount equal to or greater than specified depth, conduit shall be installed not less than 6" below existing grade.

11. Verify that information concerning finish grade is accurate, for should the underground run be less than the specified depth, Contractor may be required to re-install conduit to meet the required depth.

12. Unless otherwise specified, underground conduits shall be installed with top side not less than 24" below finished grade; this depth applies to all conduits outside of building foundations including those under walks, open corridors or paved areas.

13. Utility company service conduits installation depth shall be as directed by their respective specifications and requirements.

B. Boxes

1. Before locating outlet boxes, check Construction Documents for type of construction and make sure that there is no conflict with other equipment. Locate outlet boxes as shown and locate so as not to interfere with other Work or equipment.

2. Install all outlet boxes flush within walls, ceiling and floors except where installed within non-finished rooms, cabinetry, attic spaces or as indicated on Drawings.

3. Locate pull boxes and junction boxes within concealed, accessible locations where possible.

4. Do not install outlet boxes back-to-back with same stud space. Where shown back-to-back, offset as required, and fill void with sound dampening material where requested by Owner.

5. In fire rated walls separate boxes by 24" minimum and with stud member.

6. Adjust position of outlet boxes within masonry wall to accommodate course lines.

3.3 INSTALLATION

A. Conduit

1. Minimum conduit size shall be 3/4" unless otherwise indicated.

2. All conduit work shall be concealed unless otherwise indicated. Exposed conduits shall be permitted within unfinished rooms/spaces to facilitate installation.

3. Install conduit in complete runs prior to installing conductors or cables.

4. Make long radius conduits bends free from kink, indentations or flattened surfaces. Make bends carefully to avoid injury or flattening. Bends 1 1/4" size and larger shall be factory made ells, or be made with a manufactured mechanical bender. Heating of steel conduit to facilitate bending or that damage galvanized coating will not be permitted.

5. Remove burrs and sharp edges at end of conduit with tapered reamer.

6. Protect and cover conduits during construction with metallic bushings and bushing "pennies" to seal exposed openings.

7. Assemble conduit threads with anti-corrosion, conductive, anti-seize compound and tighten securely.

8. Install conduits shall that no traps to collect condensation exist.

9. Fasten conduit securely to boxes with locknuts and bushings to provide good grounding continuity.

10. Install pull cords/line within any spare or unused conduits of sufficient length to facilitate future cable installation.

11. Penetrations

a. Locate penetrations within structural members as shown on Drawings and as directed by Architect or Engineer. Should it be necessary to notch any framing member, make such notching only at locations and in a manner as approved by Engineer.

b. Do not chase concrete or masonry to install conduit unless specifically approved by Engineer.

c. Cutting or holes

1) Install sleeves for cast-in-place concrete floors and walls. After installing conduit through penetration, seal using dry-pack grouting compound (non-iron bearing, chloride free and non-shrinking) or fire rated assembly if rated floor or wall. Use escutcheon plate on floor underside to contain compound as necessary.

2) Cut holes with a hole saw for penetrations through non-concrete or non- masonry members.

3) Provide chrome plated escutcheon plates at all publicly exposed wall, ceiling and floor penetrations.

d. Sealing

1) Non-rated penetration openings shall be packed with non-flammable insulating material and sealed with gypsum wallboard taping compound.

2) Fire rated penetration shall be sealed using a UL classified fire stop assembly suitable to maintain the equivalent fire rating prior to the penetration.

3) Use escutcheon plates to hold sealing or fire rated compound as necessary.

e. Waterproofing

1) Make penetrations through any damp-proofed/waterproofed surfaces within damp/wet locations as such as to maintain integrity of surface.

2) Install specified watertight conduit entrance seals at all below grade wall and floor penetrations.

3) At roof penetrations furnish roof flashing, counter flashing and pitch-pockets compatible to roof assembly.

4) Where possible conduits that horizontally penetrate a waterproof membrane shall fall away from and below the penetration's exterior side.

5) Make penetrations through floors watertight with mastic, even when concealed within walls or furred spaces.

12. Supports

a. Conduits shall be support and braced per OSHPD pre-approved anchorage systems when those methods are implemented and installed.

b. Sizes of rods and cross channels shall be capable of supporting 4 times and 5 times actual load, respectively. Anchorage shall support the combined weight of conduit, hanger and conductors.

c. Support individual horizontal conduit 1 1/2" and smaller by means of 2 hole straps or individual hangers.

d. Galvanized iron hanger rods sizes 1/4" diameter and larger with spring steel fasteners, clips or clamps specifically design for that purpose for 1 1/2" conduits and larger.

e. Support multi-parallel horizontal conduits runs with trapeze type hangers consisting of 2 or more steel hanger rods, preformed cross channels, 'J' bolts, clamps, etc.

f. Support conduit to wood structures by means of bolts or lag screws in shear, to concrete by means of insert or expansion bolts and to brickwork by means of expansion bolts.

g. Support multi-parallel vertical conduits runs with galvanized Unistrut, Power- Strut or approved equal type supports anchored to wall. Where multi-floored conduits pass through floors, install riser clamps at each floor.

h. Maximum conduit support spacing shall be in accordance with NECA Standard of Installation:

1) Horizontal runs:

a) 3/4" and smaller at 60" on centers, unless building construction prohibits otherwise, then 84" on centers.

b) 1" and larger at 72" on centers, unless building construction prohibits otherwise or any other condition, then 120" on centers.

2) Vertical runs:

a) 3/4" and smaller @ 84" on centers.

b) 1" and 1 1/4" @ 96" on centers.

c) 1 1/2" and larger @ 120" on centers.

d) Any vertical condition such as shaftways and concealed locations for any sized conduit, 120" on centers.

i. Anchorage for RMC/IMC supports unless otherwise specified:

1) < 1" IMC/RMC = #10 bolt/screw.

2) 1" IMC/RMC = 1/4" bolt/screw.

3) 1 1/2" and 2" IMC/RMC = 3/8" bolt/screw.

4) 3" IMC/RMC, 4" EMT = 1/2" bolt/screw.

5) > 3"IMC/RMC = 5/8" bolt/screw.

j. Anchorage for EMT supports unless otherwise specified:

1) < 1 1/2" EMT = #10 bolt/screw.

2) 1 1/2" EMT = 1/4" bolt/screw.

3) 2, 2 1/2" and 3" EMT = 3/8" bolt/screw.

4) 4" EMT = 1/2" bolt/screw.

5) > 4"EMT = 5/8" bolt/screw.

B. Boxes

1. Install boxes as shown on Drawings and as required for splices, taps, wire pulling, equipment connections and Code compliance.

2. Install additional pull boxes, not shown on Drawings, in sufficient quantities to facilitate pulling of conductors and cables such that total spacing does not exceed 150 feet or 270 degrees, total; and maximum pulling tension will not be exceeded.

3. Install plaster rings on all outlet boxes in stud walls or in furred, suspended or exposed ceilings. Covers shall be of a depth suited for installation.

4. Provide gasketed cast metal cover plates where boxes are exposed in damp or wet locations

5. Install access door for boxes installed within concealed locations without access.

6. Install approved factory made knockout seal where knockouts are not present.

7. Refer to Architectural interior elevations and details shown for exact mounting heights of all electrical outlets. In general, locate outlets as shown or specific and complies with Americans with Disabilities Act:

a. Convenience outlets: +18"AFF or +6" above counter or splash.

b. Local switches: +48"AFF or +6" above counter or splash.

c. Telecommunication outlets: +18"AFF or +48"AFF for wall telephone or intercom device.

d. Verify all mounting heights with Architectural Drawings, and where heights are not suited for construction or finish please consult Engineer or Architect.

8. Use conduit bodies to facilitate pulling of conductor or cables or change conduit direction. Do not splice within conduit bodies.

9. Enclose pull box with additional rated gypsum board as necessary to maintain wall's original fire rating.

10.Install galvanized steel coverplates on all open boxes within dry listed areas.

11.Install in-ground pull holes/boxes flush to grade finish at finished areas or 1" above finished landscaped grade. Seal all conduits terminating in pull hole/box watertight. Install and grout around bell ends where shown. Cover and lids shall be removable without damage to adjacent finish surfaces.

12.Support

a. Accurately place boxes for finish, independently and securely supported by adequate blocking or manufacturer channel type heavy-duty box hangers for stud walls. Do not use nails to support boxes.

b. Support boxes independent of conduit system.

c. Mount boxes installed within ceilings to 16 gauge metal channel bars attached to main runners or joists.

d. Support boxes within suspended acoustical tile ceilings directly from structure above when light fixture are to be installed from box.

e. Use auxiliary plates, bar or clips and grouted in place for masonry, block or pour-in-place concrete construction.

3.4APPLICATION

A. Conduit

1. RMC/IMC suitable for all damp, dry and wet locations except when in contact with earth. IMC not suitable for hazardous locations as stated within CEC/NEC.

2. EMT suitable for exposed or concealed dry, interior locations.

3. PVC suitable for beneath ground floor slab, except when penetrating, and direct earth burial. Do not run exposed within concrete walls or in floor slab unless indicated on Drawings or per Engineer's permission.

4. FMC suitable for dry locations only for connections to motors, transformers, vibrating equipment/machinery, controllers, valves, switches and light fixtures in less than 6 foot lengths.

B. Termination and joints

1. Use raceway fittings compatible with associated raceway and suitable for the location.

2. Raceways shall be joined using specified couplings or transitions where dissimilar raceway systems are joined.

3. Conduits shall be securely fastened to cabinets, boxes and gutters using (2) two locknuts and insulating bushing or specified insulated connector. Where joints cannot be made tight and terminations are subject to vibration, use bonding jumpers, bonding bushings or wedges to provide electrical continuity of the raceway system. Use insulating bushings to protect conductors where subjected to vibration or dampness. Install grounding bushings or bonding jumpers on all conduits terminating at concentric or eccentric knockouts.

4. Terminations exposed at weatherproof enclosures and cast outlet boxes shall be made watertight using specified connectors and hubs.

5. Stub freestanding equipment conduits through concrete floors for connections with top of coupling set flush with finished floor. Install plugs to protect threads and entrance of debris.

6. Install specified cable sealing bushings on all conduits originating outside the building walls and terminating within interior switchboard, panel, cabinet or gutters. Install cable sealing bushings or raceway seal for conduit terminations in all grade level or below grade exterior pull, junction or outlet boxes.

7. Where conduits enter building from below grade inject into filled raceways pre-formulated rigid 2 lbs. density polyurethane foam suitable for sealing against water, moisture, insects and rodents.

8. Install expansion fitting or expansion/deflection couplings per manufacturer's recommendations where:

a. Any conduit that crosses a building structure expansion joint; secure conduit on both sides to building structure and install expansion fitting at joint.

b. Any conduit that crosses a concrete expansion joint; install expansion/deflection at joint.

c. Any conduit greater than 1-1/4" is routed along roof top in runs greater than 100 feet; install expansion fittings every 100 feet.

d. Engineer may allow FMC or LFMC in lieu of expansion fitting or expansion/deflection couplings on conduits 2" and smaller within accessible locations upon further review and written consent.

C. Boxes

1. Standard type suitable for all flush installations and all dry concealed locations.

2. Concrete type suitable for all flush concrete installations.

3. Masonry type suitable for all flush concrete and block installations.

4. Surface cast metal type suitable for all exposed damp and wet surface mounted locations, and dry surface mounted locations less than 96" from finished floor

END OF SECTION 26 05 33

SECTION 26 09 23 – LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to non-networked lighting control devices.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24

a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

2. NEMA –National Electrical Manufacturer's Association

a. ICS 1; Industrial Control and Systems: General Requirements

b. ICS 6; Industrial Control and Systems: Enclosures

3. UL -Underwriters Laboratories, Inc.

a. 50; Cabinets and Boxes

b. 508; Standard for Industrial Control Equipment

c. 773A; Standard for Nonindustrial Photoelectric Switches for Lighting Control

d. 916; Standard for Energy Management Equipment

1.3SYSTEM DESCRIPTION

A. Lighting Control Devices

1. Devices include occupancy sensors and automatic time clock line voltage devices.

1.4SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

B. Operating, maintenance and instruction manuals shall be furnished in accordance with General Conditions and Section 26 05 00.

C. Operating instruction manuals outlining the step-by-step procedures required for system start-up and operation shall be furnished. The instructions shall include manufacturer's name, model number, service manual parts list, and brief description of all equipment and their basic operating features.

D. Maintenance instruction manuals outlining maintenance procedures shall be furnished. The manual shall include a troubleshooting guide listing possible breakdowns and repairs and a simplified connection wiring diagram for the system as installed.

1.5QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

1.6DELIVERY, STORAGE AND HANDLING

A. Handle carefully to avoid damage to internal components, enclosure and finish.

B. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional cover to protect enclosure in harsh environments.

1.7WARRANTY

A. Furnish guarantee in accordance with and in form required under Section 26 05 00.

1.8SYSTEM STARTUP

A. Refer to manufacturer's documentation to start-up procedures and requirements. PART 2 - PRODUCTS

2.1LIGHTING CONTROL DEVICES

A. General

1. Dual voltage rated for 120 and 277Vac.

2. Compatible with all electronic ballasts, incandescent and motor rated type loads.

3. Utilizes advance electronic circuitry which increases relay life, protects from the effects of inrush current, and increases sensor's longevity.

4. All devices shall have a LED or LCD indicating light.

5. All switches shall fit behind a decorator style faceplate.

B. Occupancy Wall Switches

1. Digital Time Wall Switch

a. Manufacturers

1) Hubbell TD200, WattStopper TS-400 or approved equal.

b. General

1) The digital time switch shall be programmable to turn lights off after a preset time and capable of operating as an ON/OFF switch.

2) Time switch shall have no minimum load requirement and shall be capable of controlling 800W at 100/120Vac, 1,200W at 230/277Vac, and 1/6 hp at 125Vac.

3) Time scroll feature shall allow manual overriding of the preset time-out period.

4) Time switch shall have the option for audible and visual alerts 1 minute prior to timeout.

5) Time switch shall have an LCD that shows the timer's countdown.

6) Time-out period shall be adjustable in settings of

a) 5, 15, and 30 minutes.

b) 1, 3, 6, 9, and 12 hours.

2. Multi-Technology Wall Switch (Infrared and Ultrasonic Technologies)

a. Manufacturers

1) Hubbell LHM, Wattstopper DSW-100 or approved equal.

b. General

1) The passive adaptive infrared and ultrasonic wall switch sensor shall be a self contained control system that replaces a standard toggle switch.

2) Microprocessor technology shall be utilized to avoid false ON activations and to provide high sensitivity to minor occupant motion by detecting infrared energy changes and doppler shifts in transmitted ultrasound within the controlled space.

3) Infrared sensor shall utilize a temperature compensated, dual element sensor and a multi-element fresnel lens.

4) Ultrasonic senor shall utilize a 40kHz signal.

5) Sensor shall cover up to 1,000SF for walking motion, with a field of view of 180 degrees.

6) Sensor shall be capable of controlling 600W at 100/120Vac and 1,200W at 230/277Vac electronic ballasts and incandescent loads.

7) Sensor shall have a built-in adjustable light level feature that holds load off when a desired footcandle level is present.

8) Sensor shall timeout at 8 minutes initially and will self-adjust based on occupancy.

3. Multi-Technology, Dual Circuit Wall Switch (Infrared and Ultrasonic Technologies)

a. Manufacturers

1) Hubbell LHMTD2, Wattstopper DSW-200 or approved equal.

b. General

1) Same as the Multi-Technology Wall Switch above, but with dual input, independent circuit switching capability.

4. Automatic Wall Switch (Infrared Technology)

a. Manufacturers

1) Hubbell WS1200AT, WattStopper WS-200 or approved equal.

b. General

1) The passive adaptive infrared wall switch sensor shall be a self contained control system that replaces a standard toggle switch.

2) Microprocessor technology shall be utilized to avoid false ON activations and to provide high sensitivity to minor occupant motion by detecting infrared energy changes within the controlled space.

3) Sensor shall utilize a temperature compensated, dual element sensor and a multi-element fresnel lens.

4) Sensor shall cover up to 900SF for walking motion, with a field of view of 180 degrees.

5) Sensor shall have no minimum load requirement and shall be capable of controlling 800W at 100/120Vac and 1,200W at 230/277Vac electronic ballasts and incandescent loads.

6) Sensor shall have a built-in adjustable light level feature that holds load off when a desired footcandle level is present.

7) Sensor shall have a time delay adjustable from 5 to 30 minutes.

C. Ceiling and Wall Mounted Sensors

1. General

1) Microprocessor technology shall be utilized to avoid false ON activations and to provide high sensitivity to minor occupant motion by detecting changes in sensor readings within the controlled space.

2) The sensor shall have a single pole, double throw isolated relay rated for 1.0A at 24Vdc.

3) Sensor shall have a built-in adjustable light level feature that holds load off when a desired footcandle level is present.

4) For accuracy and consistency, sensor shall have a controlled, digital time delay adjustable from 8 to 30 minutes.

5) Provide power packs for sensors as required with the following characteristics:

a) For ease and speed of installation, power and auxiliary relay pack shall have 1/2" snap-in nipple for 1/2" knockouts and mounting on outside of enclosure.

b) Power and auxiliary relay packs shall have dry contacts capable of switching 20A ballast 120/277Vac load, 13A incandescent, 1 hp at 120/240Vac

c) Power packs shall use 120Vac or 277Vac input and provide a 24Vdc, 100mA output.

d) Auxiliary relay packs shall be identical in physical size of power packs and contain no transformer power supply and shall have similar rated contacts.

e) Power pack can be used as a stand alone, low voltage switch, or can be wired to sensor for auto control.

f) Power and auxiliary relay packs shall have low voltage teflon coated leads, rated for 300V, suitable for use in plenum applications.

2. Infrared Sensor

a. Manufacturers

1) Ceiling Only Mount: Hubbell OMNI-IR-RP series, WattStopper CI series or approved equal.

2) Wall Mount: Hubbell LO-DIA-RP, WattStopper CX series or approved equal.

b. General

1) The passive infrared sensor shall be capable of detecting presence in the control area by changes in the infrared energy.

2) Sensor shall utilize a temperature compensated dual element sensor and a multi-element fresnel lens.

3) Sensor with a 120" mounting height shall have the following typical coverage zones:

a) Ceiling only mounts: 450 SF or 1,500SF areas at 360 degrees.

b) Wall/ceiling mounts: 1,600SF area at 110 degrees.

3. Ultrasonic Sensor

a. Manufacturers

1) Hubbell OMNI-US-RP series, WattStopper WT series or approved equal.

b. General

1) The ultrasonic sensor shall be capable of detecting presence in the control area by doppler shifts in transmitted ultrasound within the controlled space.

2) Sensors of varying frequencies shall not be allowed so as to prevent sensors from interfering with each other and to assure compatibility in the event more sensors are added.

3) Sensor with a 120" mounting height shall have the following minimum rectangular coverage zones:

a) 500 SF at 180 degrees

b) 1,000SF or 2,000SF areas at 360 degrees.

4. Dual Technology Sensor (Infrared and Ultrasonic Technologies)

a. Manufacturers

1) Hubbell LO-DT-RP or OMNI-DT-RP series, WattStopper DT series or approved equal.

b. General

1) The passive adaptive infrared and ultrasonic sensor shall be capable of detecting presence in the control area by changes in the infrared energy and doppler shifts in transmitted ultrasound within the controlled space.

2) Sensors of varying frequencies shall not be allowed so as to prevent sensors from interfering with each other and to assure compatibility in the event more sensors are added.

3) Sensor shall utilize a temperature compensated dual element sensor and a multi-element fresnel lens.

4) Ceiling sensors with a 120" mounting height shall have the following minimum coverage zones:

a) 500 SF at 180 degrees

b) 1,000SF or 2,000SF areas at 360 degrees.

5) Wall sensor with a 120" mounting height shall have a 1,600SF minimum coverage area at nearly 180 degrees.

PART 3 - EXECUTION

3.1INSTALLATION

A. Work shall be installed as shown on the Drawings in accordance with the manufacturer's diagrams and recommendations, except where otherwise indicated.

B. Contractor shall provide initial setup and programming for all devices and software installed under this Section for a complete and operational system. System interfaces shall be coordinated with Owner, where appropriate.

C. All cable runs shall comply with the requirements of this Division and manufacturer's specifications, and shall be continuous between devices and equipment. All control cabling shall meet CEC/NEC 725 or 800 as required and be UL listed for its application.

D. Set sensor's time delays and sensitivity adjustments in accordance to manufacturer's guidelines and Owner's direction.

E. Provide appropriate power pack for each ceiling or wall mounted occupancy sensor, whether shown or not on Drawings, unless otherwise noted.

F. Where drawings indicate slave sensors provide necessary raceway and cabling to connect sensor such that input from either master or slave sensor will activate load.

G. Locate photoelectric switches (photocell), when required, at one of the following locations with a northern or western exposure:

1. Route ½" conduit to roof and penetrate deck and locate +18" above finish floor. Seal penetration per Specifications.

2. Route ½" conduit to nearest service or support exterior doorway and mount +8" above door frame in a flush weatherproof outlet box.

H. Orient photocell toward north. If northern orientation cannot be obtained, orient the device west.

I. Provide the following items for a complete and operational low voltage lighting control system as required by the manufacturer's specifications:

1. Auxiliary cabinets and boxes for all modules and devices not mounted within relay panel.

2. Install network modules and repeaters necessary to extend the dataline to all modules and devices within the network as required by manufacturer's specifications.

3. Provide ADIMs of sufficient quantities to connect all analog devices shown on Drawings.

4. Coordinate interface with BMS/BAS with other trades and vendors to provide functionality contained herein (i.e., time clock scheduling and relay status).

5. All low voltage cables between system components, sensors and input devices shall meet manufacturer's specifications.

J. Contractor shall coordinate programming of time clock schedules and relay groups not shown in Drawings with Owner.

3.2FIELD QUALITY CONTROL

A. The Contractor shall demonstrate the system functionality to manufacturer's specifications and requirements after completion of installation.

B. The Engineer or Owner may order any changes, adjustments or further tests deemed necessary to assure that the system and its components are complete and operational in accordance with the Specifications.

3.3ADJUSTING

A. After 60 days of Owner occupancy provide labor to adjust time delays and sensitivity adjustments on each occupancy and photocell sensor.

3.4DEMONSTRATION

A. The Contractor shall properly instruct the Owner to the operational procedures of the system.

B. Within the first 30 days from system startup, the equipment supplier shall provide no less than four (4) hours for instruction and training.

END OF SECTION 26 09 23

SECTION 26 27 26 – WIRING DEVICES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to wiring devices.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

a. 26 05 26 – Grounding and Bonding for Electrical Systems

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. Federal Specification

a. W-C-596; Connector, Electrical, Power, General Specification for

b. W-S-896; Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification)

2. NEMA –National Electrical Manufacturer's Association

a. WD 1; General Color Requirements for Wiring Devices

b. WD 6; Wiring Devices-Dimensional Requirements

3. UL -Underwriters Laboratories, Inc.

a. 20; General-Use Snap Switches

b. 498; Standard for Attachment Plugs and Receptacles

c. 943; Standard for Ground-Fault Circuit-Interrupters

d. 1449; Standard for Transient Voltage Surge Suppressors

1.3 SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.4 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

PART 2 – PRODUCTS

2.1 SWITCHES

A. Wall switches

1. Specification grade, quiet, AC rated, mechanical, snap type with silver alloy contacts, and shall comply with NEMA WD-1 and Fed. Spec W-S-896.

2. Rating shall be 20A at 120/277Vac, unless otherwise shown.

3. Handles shall be nylon; color shall be compatible with adjacent wall finish.

4. Manufacturers and types

a. Single pole, single throw

1) Cooper Wiring Devices #CSB120, Hubbell #CSB120, or equal.

b. Double pole, single throw

1) Cooper Wiring Devices #CSB220, Hubbell #CSB220, or equal.

c. Three way

1) Cooper Wiring Devices #CSB320, Hubbell #CSB320, or equal.

B. Wall dimmer switches

1. Linear slide type dimmer with smooth and continuous square law dimming curve that complies with UL 20 and is UL listed for the specified load.

2. Dimmers shall have power failure memory to bring lights back on at same level prior to power interruption.

3. Dimmers shall incorporate air-gap switch accessible with wall plate installed.

4. Furnish dimmer switch of rating to connected loads; de-rate as required by manufacturer's information for ganged installations.

5. Coverplate shall be snap-on type with no visible attachments or fins. Color shall be compatible with adjacent wall finish.

6. Manufacturer and type

a. Lutron Nova series or approved equal.

2.2 RECEPTACLES

A. Standards

1. Specification grade, NEMA 5-15R configuration grounding type, rated 15A at 125/250Vac that conform to NEMA WD-6 and Fed. Spec W-C-596.

2. At dedicated receptacle locations and as otherwise noted, use specification grade, NEMA 5-20R configuration grounding type, rated 20A at 125/250Vac that conform to NEMA WD-6 and when possible Fed. Spec W-C-596.

3. Specialty receptacles shall conform to NEMA WD-6 and UL standards as applicable.

B. Color

1. General purpose receptacle face shall be nylon; color shall be compatible with adjacent wall finish, unless otherwise indicated.

C. Receptacle types

1. General purpose single

a. Provide self-grounding back and side wired with binding head staked terminal screw.

b. Use Cooper Wiring Devices #5261, Hubbell #5261, or equal for NEMA 5- 15R.

c. Use Cooper Wiring Devices #5361, Hubbell #5361, or equal for NEMA 5- 20R.

2. General purpose duplex

a. Provide self-grounding back and side wired with binding head staked terminal screws and break-off strip for two circuit wiring.

b. Use Cooper Wiring Devices #5262, Hubbell #5262, or equal for NEMA 5- 15R.

c. Use Cooper Wiring Devices #5362, Hubbell #5362, or equal for NEMA 5- 20R.

3. Transient voltage surge suppressor (TVSS) duplex

a. Provide 20A, 125Vac receptacle consisting of NEMA 5-20R duplex device with integral TVSS protection circuit.

b. Provide LED indicator to verify surge protection and ground, and audible alarm to notify bad ground connection or surge protection expiration.

c. TVSS characteristics:

1) 400V clamping voltage.

2) 280J energy rating.

3) 150Vac RMS MOV rating

4) 18kA maximum surge current in all modes (L-N, L-G and N-G)

d. Use Cooper Wiring Devices #5362_S, no known equal.

4. Isolated ground

a. Provide receptacle specified within this Section with equipment grounding contacts connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap.

5. Ground fault circuit interrupter (GFCI) duplex

a. Provide 20A, 125Vac receptacle consisting of NEMA 5-20R duplex device with integral solid state sensing and signaling circuitry capable of detecting and interrupting a maximum 5mA line-to-ground fault current in approximately 1/40th of a second per UL 943.

b. Provide visual device with trip indication, manual reset and test mechanisms per UL 943.

c. Device shall be capable of point of use and multi-outlet protection.

d. Use Cooper Wiring Devices #XGF20, Hubbell #GF53, or equal.

6. Special purpose

a. Provide specification grade devices with NEMA configuration, voltage, ampacity, poles and ground provisions as noted on Drawings.

2.3 WALL PLATES

A. Interior locations

1. Finished Areas: 0.032" stainless steel, brushed or satin finish with required number of openings for location.

2. Exposed Areas: galvanized, raised type.

B. Exterior: die-cast copper-free aluminum, gasketed, raintight cover UL listed for exterior and wet locations while in use. Use Hubbell #WP8M (duplex), #WP26M (GFCI) or equal.

C. Screws shall match plate.

D. Individual, gangable wall plates are not acceptable where two or more devices are installed at one location.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate device heights with architectural drawings and details.

B. Locate switches on latch side of door, unless otherwise indicated.

3.2 INSTALLATION

A. Mount and align device and wall plates level and plumb. Insure wall plates fit flat against wall and tight against device without strain on plate.

B. Comply with manufacturer's instructions regarding termination of conductors to wiring device.

C. Derate ganged dimmer switches as instructed by manufacturer and use dedicated neutrals within all dimmer circuits.

D. Provide wall plates for all outlet boxes with devices.

E. Install blank wall plates on all outlet boxes in which no device is present or installed.

END OF SECTION 26 27 26

SECTION 26 28 11 – OVERCURRENT PROTECTION DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to overcurrent protection devices.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24

a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

2. Federal Specification

a. W-C-375; Circuit Breakers, Molded Case, Branch Circuit And Service

3. NEMA –National Electrical Manufacturer's Association

a. AB 1; Molded-Case Circuit Breakers, Molded Case Switches, and Circuit-Breaker Enclosures

b. PB 2.2; Application Guide for Ground Fault Protective Devices for Equipment

4. UL -Underwriters Laboratories, Inc.

a. 248; Low Voltage Fuses

b. 468; Wire Connectors

c. 508E; IEC Type "2" Coordination Short Circuit Tests

d. 489; Molded-Case Circuit Breakers and Circuit Breaker Enclosures

e. 943; Standard for Ground-Fault Circuit-Interrupters

1.3 SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

B. Production test of circuit breakers upon request of Engineer.

C. Submittal shall show the following information: circuit breaker numbering, circuit breaker type and short circuit rating, provisions for future circuit breakers, bussing, including neutral and ground, ratings and enclosure dimensions and trims.

1.4 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

B. The manufacturing facility shall be registered by Underwriters Laboratories Inc. to the International Organization for Standardization ISO 9002 Series Standards for quality.

1.5 DELIVERY, STORAGE AND HANDLING

A. Handle carefully to avoid damage to internal components, enclosure and finish.

B. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional cover to protect enclosure in harsh environments.

PART 2 - PRODUCTS

2.1 FUSES

A. All power distribution fuses shall be time-delay, high interrupting (200kAIC minimum) and current limiting type, unless otherwise indicated. All fuses shall be of same manufacturer and model.

1. Motor branch circuit fuses (0 – 600A): UL Class RK5 dual element, time delay type shall be size for UL 508E "Type 2" coordination for the motor controller. Coordinate fuse selection with motor starter overload relay heaters as required.

2. General purpose feeder fuses (0 – 600A): UL Class RK1 dual element, time delay type shall be size per Drawings.

B. Control and instrumentation fuses shall of type and rating as recommended by equipment manufacturer, suitable for fuse blocks or holders installation.

2.2 MOLDED CASE CIRCUIT BREAKERS

A. General

1. Circuit breakers shall be constructed using glass reinforced insulating material.

Current carrying components shall be completely isolated from the handle and the accessory mounting area.

2. Circuit breakers shall have an over center, trip free, toggle operating mechanism which will provide quick-make, quick-break contact action. The circuit breaker shall have common tripping of all poles.

3. The circuit breaker handle shall reside in a tripped position between ON and OFF to provide local trip indication.

4. 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 after installation.

5. Circuit breakers shall have an RMS interrupting capacity not less than shown on Drawings, or if not shown shall not be less than:

a. 25kA for 480V systems

b. 22kA for 240V (or less) systems

6. Each circuit breaker shall be equipped 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.

7. Circuit breakers shall be equipped with UL Listed electrical accessories as noted on Drawing. Circuit breaker handle accessories shall provide provisions for locking handle in the ON and OFF position.

8. All circuit breakers shall be UL Listed for reverse connection without restrictive line and load markings and be suitable for mounting in any position.

9. Circuit breakers shall be constructed with factory installed mechanical lugs. All circuit breakers shall be UL Listed to accept field installable/removable mechanical type lugs. Lug body shall be bolted in place; snap in design not acceptable. All lugs shall be UL Listed to accept solid (not larger than #8 AWG) and/or stranded copper and aluminum conductors. Lugs shall be suitable for 90°C rated wire, sized according to the 75°C temperature rating in the CEC.

10. All circuit breakers shall be capable of accepting bus connections.

B. Thermal-Magnetic Circuit Breakers

1. Circuit breakers shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole.

2. Thermal trip elements shall be factory preset and sealed. Circuit breakers shall be true RMS sensing and thermally responsive to protect circuit conductor(s) in a 40°C ambient temperature.

3. Circuit breaker frame sizes above 100 amperes shall have a single magnetic trip adjustment located on the front of the circuit breaker.

4. Provide equipment ground fault protection where shown on Drawing with the following features.

a. Ground fault sensing system shall be modified zero sequence sensing type and not require any external power to trip the circuit breaker.

b. The ground fault sensing system shall be suitable for use on grounded systems. The ground fault sensing system shall be suitable for use on three-phase, three-wire circuits where the system neutral is grounded but not carried through the system or on three-phase, four-wire systems.

c. Ground fault pickup current setting and time delay shall be field adjustable. A switch shall be provided for setting ground fault pickup point. A means to seal the pickup and delay adjustments shall be provided.

d. The ground fault sensing system shall include a ground fault memory circuit to sum the time increments of intermittent arcing ground faults above the pickup point.

e. A means of testing the ground fault system to meet the on-site testing requirements of CEC/NEC 230-95(c) shall be provided.

f. Local visual ground fault trip indication shall be provided.

g. The ground fault sensing system shall be provided with Zone Selective Interlocking (ZSI) communication capabilities compatible with other thermal magnetic circuit breakers equipped with ground fault sensing, electronic trip circuit breakers with integral ground fault sensing and external ground fault sensing systems as noted on Drawings.

2.3 INSULATED CASE CIRCUIT BREAKERS

A. Circuit breaker trip system shall be a microprocessor-based true RMS sensing design with sensing accuracy through the thirteenth (13th) harmonic. Sensor ampere ratings shall be as indicated on Drawings.

B. The integral trip system shall be independent of any external power source and shall contain no less than industrial grade electronic components.

C. Circuit breakers shall be equipped with back-up thermal and magnetic trip system.

D. Circuit breakers shall have an RMS interrupting capacity not less than shown on Drawings, or if not shown shall not be less than:

1. 100kA for all frame sizes at 208V
2. 65kA for all 800A - 2,000A frames at 480V
3. 100kA for all 3,000A - 4,000A frames at 480V

E. The ampere rating of the circuit breaker shall be determined by the combination of an interchangeable rating plug, the sensor size and the long-time pickup adjustment on the circuit breaker. The sensor size, rating plug and switch adjustments shall be

clearly marked on the face of the circuit breaker. Circuit breakers shall be UL Listed to carry 100% of their ampere rating continuously.

F. The following time/current response adjustments shall be provided. Each adjustment shall have discrete settings and shall be independent from all other adjustments.

a. Instantaneous Pickup

b. Long Time Pickup

c. Long Time Delay

d. Short Time Pickup

e. Short Time Delay

f. Ground Fault Pickup (when specified with ground fault protection)

g. Ground Fault Delay (when specified with ground fault protection)

G. Circuit breakers with adjustable short-time function shall be provided with defeatable instantaneous adjustment and 30 cycle short-time withstand ratings. Short-time withstand ratings shall be specified in RMS symmetrical amperes, as shown on the [drawings] [schedules].

H. A means to seal the rating plug and trip unit adjustments in accordance with CEC/NEC 240-6(b) shall be provided.

I. Local visual trip indication for overload, short circuit and ground fault trip occurrences shall be provided.

J. An ammeter to individually display all phase currents flowing through the circuit breaker shall be provided. [Indication of inherent ground fault current flowing in the system shall be provided on circuit breakers with integral ground fault protection]. All current values shall be displayed in True RMS with 2% accuracy.

K. Long Time Pickup indication to signal when loading approaches or exceeds the adjusted ampere rating of the circuit breaker shall be provided.

L. The trip system shall include a Long Time memory circuit to protect against intermittent overcurrent conditions above the long time pickup point. Means shall be provided to reset Long Time memory circuit during primary injection testing.

M. True two-step stored energy mechanism with five (5) cycle closing time shall be provided. All circuit breakers shall have multiple CHARGE/CLOSE provisions allowing the following sequence: CHARGE, CLOSE, RECHARGE, OPEN/CLOSE/OPEN

N. Local control pushbuttons to OPEN and CLOSE circuit breaker shall be provided. Color coded visual indication of contact position (OPEN or CLOSED) shall be provided on the face of the circuit breaker. Local manual charging following CLOSE operation shall be provided. Color coded visual indication of mechanism CHARGED
and DISCHARGED position shall be provided on the face of the circuit breaker.
Visual indicator shall indicate CHARGED only when closing springs are completely charged.

O. Each circuit breaker shall be electrically operated to permit remote CHARGE, CLOSE, and OPEN capabilities. Electrically operated circuit breaker shall be equipped with charge contact switch for remote indication of mechanism charge status.

P. An ammeter to individually display all phase currents flowing through the circuit breaker shall be provided. [Indication of inherent ground fault current flowing in the system shall be provided on circuit breakers with integral ground fault protection]. All current values shall be displayed in True RMS with 2% accuracy.

Q. All circuit breakers shall be equipped with electrical accessories as noted on Drawings.

R. Provide the following interlocking capabilities:

1. cell door interlock
2. key interlock for main-tie-main
3. lock off

S. Circuit breaker trip system shall be equipped with an externally accessible test port. Disassembly of the circuit breaker shall not be required for testing. Test set shall be capable of verifying the operation of all trip functions with or without tripping the circuit breaker.

T. Equipment Ground Fault Protection shall be provided where noted on Drawings.

1. Circuit breakers shall be provided with integral equipment ground fault protection for grounded systems. The circuit breaker shall be suitable for use on three- phase, three-wire circuits where the system neutral is grounded but not carried through the system or on three-phase, four-wire systems.

2. A separate neutral current transformer shall be provided for three-phase, four- wire systems.

3. Ground fault sensing system shall be residual sensing type.

4. The trip system shall include a ground fault memory circuit to sum the time increments of intermittent ground faults above the pickup point.

5. A means of testing the ground fault system to meet the on-site testing requirements of CEC/NEC 230-95(c) shall be provided.

6. Local visual trip indication for a ground fault trip occurrence shall be provided.

7. The ground fault sensing system shall be provided with Zone Selective Interlocking (ZSI) communication capabilities compatible with other thermal magnetic circuit breakers equipped with ground fault sensing, electronic trip circuit breakers with integral ground fault sensing and external ground fault sensing systems as noted on Drawings.

PART 3 - EXECUTION

3.1 PREPARATION

A. Notify Engineer no later than 10 working days for adjustable circuit breaker settings not shown within Drawings. Submit to Engineer the following information:

1. Panel, switchboard name/ID
2. Circuit breaker identifier (i.e., main circuit breaker, load served, etc.)
3. List of necessary settings (i.e., trip settings, time delays, etc.)

3.2 INSTALLATION

A. Install equipment and their accessories in to manufacturer's instructions, pertinent Codes, and with recognized industry practices to insure device operates properly.

B. Tighten electrical connectors and terminals in accordance to manufacturer's requirements. Where the manufacturer does not have published torque tightening values, comply with the requirements of UL 468.

3.3 FIELD QUALITY CONTROL

A. Check tightness of circuit breaker connections using a calibrated torque wrench or torque screwdriver per manufacturer's written specifications.

B. Obtain the services of an independent testing company who shall provide quality control and adjustments as well as tests for

1. Check each circuit breaker above 100A on a 225A frame for long-time and short- time delay pickup and instantaneous pickup.

a. Instantaneous pickup current shall be determined by 4 cycles or less.

b. Perform timing test with 300% of breaker trip unit rated current.

c. Adjust unit if required, so that the tripping characteristics are within the limits of the published time-current characteristic curves for that particular trip unit.

2. Test and calibrate ground fault protection trip and pickup time on 225A frame breakers and larger.

C. Physically test key interlock systems to check for proper functionality.

D. Check and set where required all protective device settings in accordance with approved coordination study settings and conduct ground fault acceptance tests.

3.4 ADJUSTING

A. Adjust all operating mechanisms for free mechanical movement per manufacturer's specifications.

B. Adjust circuit breaker trip and time delay settings to values indicated as instructed by Engineer.

1. Check each circuit breaker above 100A, long-time and short-time delay pickup and instantaneous pickup. Instantaneous pickup current shall be determined by 4 cycles or less. Perform timing test with 300% of breaker trip unit rated current. Adjust unit if required, so that the tripping characteristics are within the limits of the published time-current characteristic curves for that particular trip unit.

2. Main circuit breaker ground fault setting shall be per CEC/NEC 230-95(a) or as directed by Engineer.

3.5 PROTECTION

A. When directed by Engineer provide physical means to "permanently fix" settings for rotary and DIP type switches with a thin coat of clear lacquer.

3.6 CLEANING

A. Remove marks, dirt and debris from installed equipment surfaces for "new like" appearance.

END OF SECTION 26 28 11

SECTION 26 28 16 – SAFETY SWITCHES AND INDIVIDUAL MOUNTED CIRCUIT BREAKERS

PART 1 — GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to heavy duty fusible, non-fusible and double throw safety switches.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

a. 26 05 26 – Grounding and Bonding for Electrical Systems

b. 26 28 11 – Overcurrent Protection Devices

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24

a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

2. NEMA –National Electrical Manufacturer's Association

a. KS 1; Enclosed Switches

b. 250; Enclosures for Electrical Equipment

3. UL -Underwriters Laboratories, Inc.

a. 98; Enclosed and Dead Front Switches

b. 489; Molded-Case Circuit Breakers and Circuit Breaker Enclosures

1.3SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.4QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

1.5DELIVERY, STORAGE AND HANDLING

A. Handle carefully to avoid damage to internal components, enclosure and finish.

B. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional cover to protect enclosure in harsh environments.

PART 2 -PRODUCTS

2.1MANUFACTURERS

A. Square D, Cutler Hammer or approved equal.

2.2MATERIALS

A. Heavy-duty safety switches

1. Switch interior

a. All switches shall have switch blades which are visible when the switch is OFF and the cover is open.

b. Lugs shall be front removable and UL Listed for 75□C conductors, aluminum or copper.

c. 30A through 100A switches shall be equipped with factory or field installed fuse pullers.

d. Switches required for Type 12, 12K or Type 4-4X-5 stainless steel applications shall have all copper current carrying parts.

e. All current carrying parts shall be plated to resist corrosion.

f. Switches shall have removable arc suppressors to facilitate easy access to line side lugs.

g. Switches shall have provisions for a field installable electrical interlock.

2. Switch mechanism

a. Switch operating mechanism shall be quick-make, quick-break such that, during normal operation of the switch, the operation of the contacts shall not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started.

b. The operating handle shall be an integral part of the box, not the cover.

c. Provisions for padlocking the switch in the OFF position with at least three padlocks shall be provided.

d. The handle position shall travel at least 90° between OFF and ON positions to clearly distinguish and indicate handle.

e. All switches shall have a dual cover interlock mechanism to prevent unintentional opening of the switch cover when the switch is ON and prevent turning the switch ON when the cover is open. The cover interlock mechanism shall have an externally operated override but the override shall not permanently disable the interlock mechanism. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.

3. Switch enclosures

a. All enclosures shall be NEMA 1 general purpose unless otherwise noted.

b. Switch covers shall be attached:

1) with welded pin-type hinges (Type 1, 12, 12K, 4-4X-5 stainless steel).

2) top hinged, attached with removable screws and securable in the open position (Type 3R).

3) by molded hinges and type 316 stainless steel hinge pins (Type 4X polyester).

4) by type 316 stainless steel bolts (Type 7/9).

c. The enclosure shall be finished with:

1) gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated steel (Type 1).

2) gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated galvannealed steel (Type 3R, 12, 12K).

3) a brush finish on type 304 stainless steel (Type 4-4X-5 stainless steel).

4) Gray baked enamel on copper free cast aluminum alloy (Type 7/9).

d. The enclosure shall have ON and OFF markings:

1) stamped into the cover (Type 1, 3R, 4-4X-5 stainless steel, 12, 12K).

2) cast into the cover (Type 7/9).

3) inked on a adhesive label (Type 4X polyester).

e. The operating handle shall be provided with a dual colored, red/black position indication.

f. All switches shall have provisions to accept up to three 3/8" hasp padlocks to lock the operating handle in the OFF position.

4. Switch ratings

a. Switches shall be horsepower rated for ac and/or dc as indicated on Drawings.

b. The UL Listed short circuit current rating of the switches shall be:

1) 10,000 rms symmetrical amperes when used with or protected by Class H or K fuses (30-600A).

2) 200,000 rms symmetrical amperes when used with or protected by Class R or Class J fuses (30-600A switches employing appropriate fuse rejection schemes).

3) 200,000 rms symmetrical amperes when used with or protected by Class L fuses (800-1200A)

B. Individual Mounted Circuit Breakers

1. Circuit Breaker

a. Circuit breakers shall be of type, rating and poles shown on Drawings per Section 26 28 11 – Overcurrent Protection Devices.

2. Enclosure

a. Enclosure shall be galvanized steel constructed in accordance with UL 50 requirements, and be NEMA 1, unless specifically shown or specified otherwise.

PART 3 -EXECUTION

3.1INSTALLATION

A. The equipment shall be installed per the manufacturer's recommendations.

B. Anchor safety switches to structural members and as shown on Drawings. Provide additional support as required.

C. Mount safety switches level and plumb.

3.2FIELD QUALITY CONTROL

A. Inspect complete installation prior to energizing for physical damage, proper alignment, anchorage and grounding.

B. Check tightness of bolted connections per manufacturer's written specifications. END OF SECTION 26 28 16

SECTION 26 50 00 – LIGHTING

PART 1 - GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to fixtures, lamps, standards, bases, hangers, supports, reflectors, glassware, lenses, auxiliary equipment, ballasts and sockets.

B. Related work under this section

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

2. The requirements of this Section apply to all Division 26 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. ANSI -American National Standards Institute

a. C78; American National Standard for Electric Lamps

b. C81; American National Standard for Electric Lampholders

c. C82; American National Standard for Lamp Ballasts

d. C136; American National Standard for Roadway and Area Lighting Equipment

2. California Codes of Regulations

a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

b. Part 6 -California Energy Code

3. IESNA –Illuminating Engineering Society of North America
   a. RP-16; Nomenclature and Definitions for Illuminating Engineering
4. NECA –National Electrical Contractors Association
   a. NECA/IESNA 500, Recommended Practice for Installing Indoor Commercial Lighting Systems
   b. NECA/IESNA 501, Recommended Practice for Installing Exterior Lighting Systems
   c. NECA/IESNA 502, Recommended Practice for Installing Industrial Lighting Systems
5. UL -Underwriter's Laboratories, Inc.
   a. 935; Standard for Fluorescent-Lamp Ballasts

   b. 1029; Standard for High-Intensity-Discharge Lamp Ballasts
   c. 1574; Standard for Track Lighting Systems

1.3SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

B. Substituted fixtures shall be submitted with manufacturer's specification sheet and published photometric reports, verified by testing to IES and NEMA standards under controlled laboratory conditions.

1.4QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

B. Installation shall conform to the following standards:

1. NECA/IESNA 500, Recommended Practice for Installing Indoor Commercial Lighting Systems

2. NECA/IESNA 501, Recommended Practice for Installing Exterior Lighting Systems

3. NECA/IESNA 502, Recommended Practice for Installing Industrial Lighting Systems

1.5DELIVERY, STORAGE AND HANDLING

A. Handle carefully to avoid damage to internal components, enclosure and finish.

B. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional cover to protect enclosure in harsh environments.

1.6WARRANTY

A. Furnish one-year guarantee in accordance with and in form required under Section 26 05 00.

PART 2 - PRODUCTS

2.1GENERAL

A. Fixtures shall be of the types, wattages and voltages shown on Drawings.

B. Fixtures shall be UL listed as an entire assembly and for the installed location.

C. Fixtures' mounting trim shall be compatible with ceiling material, coordinate with Architect Drawings for each location. Fixtures delivered which are not compatible shall be returned and replaced at Contractor's expense.

D. Luminaire recessed in fire rated ceiling shall conform to UL Standards, equipped with yoke where in tee ceiling and field fabricated fire protection box in accordance with latest UL Fire Resistance Directory.

E. Fluorescent luminaire lenses shall be Pattern 12 of 100% virgin acrylic with 0.125" thickness except shown or specified otherwise.

F. Equip exposed fluorescent lamps with safety lamp holders or wire guard.

G. Deliver fixtures and other lighting equipment complete with suspension accessories, canopies, castings, sockets, holders, reflectors, ballasts, diffusing material, louvers, frames, and recessing boxes all wired and assembled.

H. Hangers: Swivel-type to allow for free movement of 45 degrees from vertical at canopy and at luminaire housing. Steel tube hangers shall include a 1/16-inch diameter galvanized wire cord or equivalent (100-pound break strength) in stem assembly attached to luminaire housing and building structure. Attach loop with C-type tool applied compression splice.

I. All metal halide lamp luminaires shall be the enclosed type with diffuser or lens to withstand an arc tube rupture.

J. Louvers for fluorescent luminaires which are removable for re-lamping but not hinged shall be securely fastened near each end between the fixture housing and louvers using No. 16 jack chain.

2.2BALLASTS

A. Ballast(s) in luminaire recessed in fire rated ceiling shall be approved for such use.

B. Ballast installed indoors shall be of encapsulated type for noise control.

C. Use appropriate rated ballast in high or low temperature applications.

D. Compact fluorescent and fluorescent lamp ballasts

1. Ballasts shall be programmed rapid start.
2. Ballasts shall be UL 935 listed, Class P, Type 1 Outdoor, CSA Certified where applicable.
3. The ballast shall meet or exceed ANSI C82.11, where applicable.
4. The ballast shall withstand transients specified within ANSI C62.41 Cat. A.
5. THD (Total Harmonic Distortion) shall be less than 10%.
6. Ballast power factor shall be greater than 98%.
7. The ballast shall have an audible noise rating of Class A or better.

E. High intensity discharge (HID) lamp ballasts

1. Ballasts shall be premium constant wattage (regulator stabilized) type, designed in accordance with all applicable ANSI specifications including ANSI C82.4 and UL 1029.

2. Power factor shall be greater than 90%.

3. Provide protective fusing with HID ballasts or HID fixtures.

F. Lamps

1. Provide lamps in all lighting fixtures shown.

2. Type as noted on the plans, T8 unless noted otherwise.

3. Approved manufacturers are General Electric, Osram Sylvania or equal. PART 3 - EXECUTION

3.1EXAMINATION

A. Locate all lighting fixtures by reference to Drawings, both electrical and architectural.

B. Report proposed changes for luminaire locations found necessary due to interference with structure, pipes, ducts, and other items to Owner's representative for direction before installation. Luminaires specified with overall lengths are subject to change. Adjust as directed by Owner's representative.

C. Contractor shall be responsible to coordinate with ceiling installation trade. This will assure that proper fixture type will be furnished to match ceiling system specified.

3.2INSTALLATION

A. Luminaires shall be properly grounded per CEC Article 410, Parts 17 through 21.

B. Luminaires recessed in fire rated ceilings shall be in accordance with UL Fire Resistance Directory.

C. Install all luminaires true and plumb. Support and mount in accordance manufacturer's instructions and with CEC Article 410, Parts 16 and 76.

D. Install recessed luminaires with separate junction box, flexible conduit, and heat- resisting wire as required by CEC. Set junction box in furred space facing luminaire for maximum accessibility. Furnish and install metal ceiling frame so luminaire can be removed without damaging finish.

E. Suspended ceiling mounting

1. Attach all light fixtures to ceiling grid runners to resist a horizontal force equal to the weight of the fixtures. Use a #10 Tek-screw or approved fastener.

2. Flush or recessed light fixtures weighing less than 56lbs. May be supported directly on runners of a heavy duty grid system, but in addition, they must have a minimum of (2) 12ga slack safety wires attached to the fixtures at diagonal corners and anchored to the structure above in the same fashion as the grid system. All 4'x4' light fixtures must have slack safety wires at each corner.

3. All flush or recessed light fixtures 56lbs. Or greater must be independently supported by not less than (4) taut 12ga wires each attached to the fixture and the structure above regardless of the grid system used. The 4 taut 12ga wires including their attachment to the structure above must be capable of supporting 4 times the fixture weight.

4. All light fixtures supported on intermediate grid system must be independently supported by not less than (4) taut 12ga wires each attached to the fixture and the structure above.

5. Support surface mounted light fixtures by at least 2 positive devices which surround the ceiling runner and which are each supported from the structure above by a 12ga wire. Spring clips or clamps that connect only to the runner are not acceptable. Provide additional supports for 8' or longer fixtures.

6. Support pendant mounted light fixtures directly from the structure above with hanger wires of cables passing through each pendant hanger & capable of supporting 4 times the fixture weight.

3.3ADJUSTING

A. Particular care shall be used to eliminate light leaks around edge of recessed fixture trims.

3.4CLEANING

A. Clean all glass and plastic and polish all visible metal parts before submitting job to Owner's representative for final acceptance. Remove all fingerprints and dirt from exposed surfaces. Replace scratched or damaged components.

END OF SECTION 26 50 00

SECTION 27 05 26 – GROUNDING AND BONDING FOR COMMUNICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes

a. Provide all labor, materials and equipment necessary to complete the installation required for the item specified under this Section, including but not limited to telecommunication system grounding.

B. Related sections

1. Where items specified in other Division 27 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

2. The requirements of this Section apply to all Division 27 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24

a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

2. IEEE –Institute of Electrical and Electronic Engineers

a. 1100; Recommended Practices Powering and Grounding Electronic Equipment

3. NFPA –National Fire Protection Association

a. 780; Lightning Protection Code

4. TIA/EIA – Telecommunications Industry Association/Electronic Industries Alliance

a. 607; Commercial Building Grounding and Bonding Requirements for Telecommunications

5. UL -Underwriters Laboratories, Inc.

a. 467; Grounding and Bonding Equipment

1.3 SYSTEM DESCRIPTION

A. This Section provides for the grounding and bonding of all electrical and communication apparatus, appliances, components, fittings and accessories where required to provide a permanent, continuous, low impedance, grounded electrical system.

B. Except as otherwise indicated, the complete electrical installation including equipment and metallic raceways, boxes and cabinets shall be completely and effectively grounded in accordance with all Code requirements, whether or not such connections are specifically shown or specified.

C. Provide telecommunication system ground bus bars with each building main telecommunications equipment room or cabinet/rack location. Provide connection between the bus bar and main building reference ground bus, the ground bus of the panelboard serving power to telecommunication equipment, and all telecommunication conduit, cable trays, cable ladders and boxes.

1.4 SUBMITTALS

A. Submit manufacturer's data for equipment and materials specified within this Section in accordance to Section 26 05 00.

1.5 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

PART 2 - PRODUCTS

2.1 INSULATED GROUNDING BUSHINGS

A. Plated malleable iron body with 150□C molded plastic insulated throat and lay-in ground lug; OZ/Gedney BLG, Thomas & Betts #TIGB series or equal.

2.2 CONNECTIONS TO STRUCTURAL STEEL, GROUND RODS OR SPICES

A. Where required by the Drawings, grounding conductors shall be spliced together, connected to ground rods or connected to structural steel using exothermic welds, Cadweld or equal, or high pressure compression type connectors, Cadweld, Thomas & Betts or equal.

2.3 BONDING JUMPERS

A. OZ/Gedney Type BJ, Thomas & Betts #3840 series or equal.

2.4 GROUND CONDUCTOR

A. Ground conductor shall be #6 AWG UL labeled, Type THWN insulated copper wire, green in color.

2.5 TELECOMMUNICATION MAIN GROUNDING BUS BAR (TMGB)

A. Provide grounding bus bar at telecommunication backboards, racks and cabinets of the following type:

1. Backboards 4'X8' and greater, floor mounted telecommunication equipment racks/cabinets larger than 60" height or wall mounted cabinets greater than 36"Wx36"H

a. Provide 1 13.5"x2"x1/4" TK copper bus bar mounted on wall with insulating stand-offs at +96" AFF. Furnish complete with cast copper alloy body Thomas Betts Series 310 or equal lugs for connecting grounding conductors. Attach lugs to bus with appropriate size bronze bolt, flat washer and Belleville washer. All connections shall be torque, and all holes shall be drilled and tapped for single hole lugs. Provide 4 spare lugs with respective spaces.

2. Backboards less than 4'X8', floor/wall mounted telecommunication equipment racks/cabinet less than 60" or wall mounted cabinets less than 36"Wx36"H

a. Provide an aluminum loadcenter ground kit with 14 terminals minimum, General Electric TGL2 or equal. A minimum of 3 terminals shall accommodate #6 AWG. Mount within enclosure or on backboard at +96" AFF.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Telecommunication system grounding

1. Bond all telecommunication conduit, cable tray, ladder rack, equipment racks and all other metallic telecommunication infrastructure components to the nearest TMGB using a #6 AWG conductor.

2. Provide #6 AWG ground within ¾" conduit from each secondary backboard, cabinet, rack, etc. to the BGB.

3. Install #6 AWG grounding conductor in nonmetallic underground raceways containing only fiber optic cable.

4. Provide an engraved nameplate mechanically fastened to wall or enclosure adjacent to each TMGB. Nameplate shall be blue with ¼" high white lettering to read "TMGB-(name of enclosure or building)".

3.2 FIELD QUALITY CONTROL

A. Contractor using test equipment expressly designed for that purpose shall perform all ground resistance tests in conformance with IEEE Standard 1100. Contractor shall submit typewritten records of measured resistance values to Engineer for review and approval prior to energizing the system.

B. Obtain and record ground resistance measurements both from electrical equipment ground bus to the ground electrode and from the ground electrode to earth. Furnish and install additional bonding and add grounding electrodes as required to comply with the following resistance limits:

1. Resistance from ground bus to ground electrode and to earth shall not exceed 5 ohms unless otherwise noted.

2. Resistance from the farthest panelboard, loadcenter, switchboard or motor control center ground bus to the ground electrode and to earth shall not exceed 20 ohms maximum.

C. Obtain and record ground resistance measurements (DC, 60Hz, 10MHz, 20MHz, 33 MHz, 66MHz and 100MHz) both from each TMGB to the ground electrode and from the ground electrode to earth.

D. Inspection

1. The Engineer or Inspector prior to encasement, burial or concealment thereto shall review the grounding electrode and connections.

END OF SECTION 27 05 26

SECTION 27 05 28 – PATHWAYS FOR COMMUNICATION SYSTEMS

PART 1 - GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to electrical conduits; outlet, junction and pull boxes; and related supports.

B. Related sections

1. Where items specified in other Division 27 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

a. 27 05 26 – Grounding and Bonding for Electrical Systems

2. The requirements of this Section apply to all Division 27 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. ANSI –American National Standards Institute

a. C33.91; Specification for Rigid PVC Conduit

b. C80.1; Specification Rigid Steel Conduit, Zinc-Coated

c. C80.3; Specification for Electrical Metallic Tubing, Zinc-Coated

d. C80.6; Intermediate Metal Conduit (IMC), Zinc-Coated

2. CCR –California Code of Regulations, Title 24

a. Part 2 -California Building Code (CBC); ICBO Uniform Building Code (UBC) with California amendments

b. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

3. NECA –National Electrical Contractors Association

a. 101, Standard for Installing Steel Conduit (Rigid, IMC, EMT)

b. 111, Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) (ANSI)

4. NEMA –National Electrical Manufacturer's Association

a. FB 1; Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable

b. FB 2.10; Selection and Installation Guidelines for Fittings for Use with Non- flexible Electrical Metal Conduit or Tubing (Rigid Metal Conduit, Intermediate Metal Conduit, and Electrical Metallic Tubing)

c. FB 2.20; Selection and Installation Guidelines For Fittings for Use With Flexible Electrical Conduit and Cable

d. OS 1; Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports

e. OS 3; Selection and Installation Guidelines for Electrical Outlet Boxes

f. RN 1; Polyvinyl-Chloride Externally Coated Galvanized Rigid Steel Conduit and Electrical Metallic Tubing.

g. TC 2; Electrical Plastic Tubing and Conduit

h. TC 3; PVC Fittings for Use with Rigid PVC Conduit and Tubing

i. TC 14; Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

5. OSHPD Anchorage Pre-approvals

a. OPA-0003; Superstrut Seismic Restraint System

b. OPA-0114; B-Line Seismic Restraints

c. OPA-0120; Unistrut Seismic Bracing System

d. OPA-0242; Power-Strut Seismic Bracing System

6. UL –Underwriter's Laboratories, Inc.

a. 1; Standard for Flexible Metal Conduit

b. 6; Rigid Metal Electrical Conduit

c. 360; Standard for Liquid-Tight Flexible Steel Conduit

d. 514A; Metallic Outlet Boxes, Electrical

e. 514B; Fittings for Conduit and Outlet Boxes

f. 651; Schedule 40 & 80 PVC Conduit

g. 797; Electrical Metallic Tubing

h. 1242; Intermediate Metal Conduit

i. 1684; Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

1.3SYSTEM DESCRIPTION

A. Furnish, assemble, erect, install, connect and test all electrical conduits and related raceway apparatus required and specified to form a complete installation.

1.4SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.5QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

B. Installation shall conform to the NECA installation guidelines unless otherwise indicated within this Section

PART 2 - PRODUCTS

2.1MATERIALS

A. Conduits and Fittings

1. Rigid steel conduit (RMC)

a. Conduit: Standard weight, mild steel pipe, and zinc coated on both inside and outside by a hot dipping or shearardizing process manufactured in accordance with UL 6 and ANSI C80.1 specifications.

b. Fittings (couplings, elbows, bends, etc.)

1) Shall be steel or malleable iron.

2) Coupling and unions shall be threaded type, assembled with anti-corrosion, conductive and anti-seize compound at joints made absolutely tight to exclude water.

c. Bushings

1) Insulating bushings: Threaded polypropylene or thermosetting phenolic rated at 150□C minimum.

2) Insulating grounding bushing: Threaded cast body with insulating throat and steel "lay-in" ground lug.

3) Insulating metallic bushing: Threaded cast body with plastic insulated throat rated at 150□C minimum.

2. Intermediate metallic conduit(IMC)

a. Conduit: Intermediate weight, mild steel pipe, meeting the same requirements for finish and material as rigid steel conduit manufactured in accordance with UL 1242 and ANSI C80.6 specifications.

b. Fittings (couplings, elbows, bends, etc.) equivalent to RMC above.

c. Bushing equivalent to RMC above.

3. Electrical metallic tubing (EMT)

a. Conduit: Cold rolled steel tubing with zinc coating on outside and protective enamel on inside manufactured in accordance with UL 797 and ANSI C80.3 specifications.

b. Couplings: Steel or malleable iron with compression type fastener via a nut.

c. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150□C minimum.

4. Rigid non-metallic conduit (PVC)

a. Conduit: PVC composed Schedule 40, 90□C manufactured in accordance with NEMA TC 2 and UL 651 specifications.

b. Fittings: Molded PVC, slip on solvent welded type in accordance to NEMA TC 3.

5. Flexible metallic conduit (FMC)

a. Conduit: Continuous, flexible steel spirally wound with zinc coating on both inside and outside in accordance with UL 1.

b. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150□C minimum.

6. Miscellaneous Fittings and Products

a. Conduit sealing bushings: Steel or cast malleable iron body and pressure clamps with PVC sleeve, neoprene sealing grommets and PVC coated steel pressure rings. Supplied with neoprene sealing rings between body and PVC sleeve.

b. Watertight cable terminators: One piece, compression molded sealing ring with PVC coated steel pressure disks, stainless steel screws and zinc plated cast iron locking collar.

c. Watertight cable/cord connectors: Liquidtight steel or cast malleable iron body with sealing neoprene bushing and stainless steel retaining ring.

d. Expansion fittings: Multi-piece unit of hot dip galvanized malleable iron or steel body and outside pressure bussing design to allow a maximum of 4" movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. UL listed for both wet and dry locations.

e. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve, internal flexible tinned copper braid attached to bronze end couplings with stainless steel bands. Coupling to provide minimum of 3/4" movement and 30 degrees deflection from normal. UL listed for both wet and dry locations.

f. Conduit bodies: Raintight, malleable iron, hot-dip galvanized body with threaded hubs, stamped steel cover, stainless steel screws and neoprene gasket.

g. Other couplings, connectors and fittings shall be equal in quality, material and construction to items specified herein.

B. Boxes

1. Outlet boxes

a. Standard: Galvanized one-piece of welded pressed steel type in accordance with NEMA OS 1 and UL 514. Boxes shall not be less than 4" square and at least 1 1/2" deep.

b. Concrete: Galvanized steel, 4" octagon ring with mounting lug, backplate and adapter ring type in accordance with NEMA OS 1 and UL 514. Depth as required by application.

c. Masonry: Galvanized steel, 3.75" high gang box in accordance with NEMA OS 1 and UL 514.

d. Surface cast metal: Cast malleable iron body, surface mounted box with threaded hubs and mounting lugs as required in accordance with NEMA OS 1 and UL 514. Furnish with ground flange, steel cover and neoprene gasket.

2. Pull and junction boxes

a. Sheet metal boxes: Standard or concrete outlet box wherever possible; otherwise use 16 gauge galvanized sheet metal, NEMA 1 box sized per CEC with machine screwed cover.

b. Cast metal boxes: Install standard cast malleable iron outlet or device box when possible.

c. Flush mounted boxes: Install overlapping cover with flush head screws.

d. In-ground mounted pull holes/boxes: Install pre-cast concrete box, sized per Drawing or CEC with pre-cast or traffic rated lid.

3. Floor boxes

a. Floor boxes shall be adjustable, cast metal body with threaded conduit openings, adjustable rings, brass flange or Lexan ring and cover plate with threaded plug. Include provisions to accommodate surface mounted telephone or receptacle outlet, or flush floor mounted telephone or receptacle outlet where shown on Drawings.

C. Pull line/cord

1. Polypropylene braided line or Let-line #232 or equal of 1/8" diameter with a minimum break strength of 200 pounds.

PART 3 - EXECUTION

3.1EXAMINATION

A. Thoroughly examine site conditions for acceptance of wire and cable installation to verify conformance with manufacturer and specification tolerances. Do not commence with work until all conditions are made satisfactory.

3.2PREPARATION

A. Conduit

1. Provide all necessary conduit fittings, connectors, bushings, etc. required to complete conduit installation to meet the CEC/NEC and intended application whether noted, shown or specified within.

2. Location of conduit runs shall be planned in advance of the installation and coordinated with other trades.

3. Where practical, install conduits in groups in parallel vertical or horizontal runs that avoid unnecessary offsets.

4. All conduits shall be parallel or at right angles to columns, beams and walls whether exposed or concealed.

5. Conduits shall not be placed closer than 12" to a flue, parallel to hot water, steam line or other heat sources; or 3" when crossing perpendicular to the above said lines when possible.

6. Install exposed conduit as high as practical to maintain adequate headroom. Notify Engineer if headroom will be less than 102".

7. Do not obstruct spaces required by Code in front of electrical equipment, access doors, etc.

8. The largest trade size conduit in concrete floors and walls shall not exceed 1/3 thickness or be spaced a less than three conduit diameters apart unless permitted by Engineer. All conduits shall be installed in the center of slab or wall, and never between reinforcing steel and bottom of floor slab.

9. Install additional pull boxes, not shown on Drawings, in sufficient quantities to facilitate pulling of conductors and cables such that total spacing does not exceed 150 feet or 270 degrees, total; and maximum pulling tension will not be exceeded.

10. When installing underground conduits to specified depth; depth shall be taken from finished grade as it will be at project completion. Should finish grade be above existing grade by an amount equal to or greater than specified depth, conduit shall be installed not less than 6" below existing grade.

11. Verify that information concerning finish grade is accurate, for should the underground run be less than the specified depth, Contractor may be required to re-install conduit to meet the required depth.

12. Unless otherwise specified, underground conduits shall be installed with top side not less than 24" below finished grade; this depth applies to all conduits outside of building foundations including those under walks, open corridors or paved areas.

13. Utility company service conduits installation depth shall be as directed by their respective specifications and requirements.

B. Boxes

1. Before locating outlet boxes, check Construction Documents for type of construction and make sure that there is no conflict with other equipment. Locate outlet boxes as shown and locate so as not to interfere with other Work or equipment.

2. Install all outlet boxes flush within walls, ceiling and floors except where installed within non-finished rooms, cabinetry, attic spaces or as indicated on Drawings.

3. Locate pull boxes and junction boxes within concealed, accessible locations where possible.

4. Do not install outlet boxes back-to-back with same stud space. Where shown back-to-back, offset as required, and fill void with sound dampening material where requested by Owner.

5. In fire rated walls separate boxes by 24" minimum and with stud member.

6. Adjust position of outlet boxes within masonry wall to accommodate course lines.

3.3INSTALLATION

A. Conduit

1. Minimum conduit size shall be 3/4" unless otherwise indicated.

2. All conduit work shall be concealed unless otherwise indicated. Exposed conduits shall be permitted within unfinished rooms/spaces to facilitate installation.

3. Install conduit in complete runs prior to installing conductors or cables.

4. Make long radius conduits bends free from kink, indentations or flattened surfaces. Make bends carefully to avoid injury or flattening. Bends 1 1/4" size and larger shall be factory made ells, or be made with a manufactured mechanical bender. Heating of steel conduit to facilitate bending or that damage galvanized coating will not be permitted.

5. Remove burrs and sharp edges at end of conduit with tapered reamer.

6. Protect and cover conduits during construction with metallic bushings and bushing "pennies" to seal exposed openings.

7. Assemble conduit threads with anti-corrosion, conductive, anti-seize compound and tighten securely.

8. Install conduits shall that no traps to collect condensation exist.

9. Fasten conduit securely to boxes with locknuts and bushings to provide good grounding continuity.

10. Install pull cords/line within any spare or unused conduits of sufficient length to facilitate future cable installation.

11. Penetrations

a. Locate penetrations within structural members as shown on Drawings and as directed by Architect or Engineer. Should it be necessary to notch any framing member, make such notching only at locations and in a manner as approved by Engineer.

b. Do not chase concrete or masonry to install conduit unless specifically approved by Engineer.

c. Cutting or holes

1) Install sleeves for cast-in-place concrete floors and walls. After installing conduit through penetration, seal using dry-pack grouting compound (non-iron bearing, chloride free and non-shrinking) or fire rated assembly if rated floor or wall. Use escutcheon plate on floor underside to contain compound as necessary.

2) Cut holes with a hole saw for penetrations through non-concrete or non- masonry members.

3) Provide chrome plated escutcheon plates at all publicly exposed wall, ceiling and floor penetrations.

d. Sealing

1) Non-rated penetration openings shall be packed with non-flammable insulating material and sealed with gypsum wallboard taping compound.

2) Fire rated penetration shall be sealed using a UL classified fire stop assembly suitable to maintain the equivalent fire rating prior to the penetration.

3) Use escutcheon plates to hold sealing or fire rated compound as necessary.

e. Waterproofing

1) Make penetrations through any damp-proofed/waterproofed surfaces within damp/wet locations as such as to maintain integrity of surface.

2) Install specified watertight conduit entrance seals at all below grade wall and floor penetrations.

3) At roof penetrations furnish roof flashing, counter flashing and pitch-pockets compatible to roof assembly.

4) Where possible conduits that horizontally penetrate a waterproof membrane shall fall away from and below the penetration's exterior side.

5) Make penetrations through floors watertight with mastic, even when concealed within walls or furred spaces.

12. Supports

a. Conduits shall be support and braced per OSHPD pre-approved anchorage systems when those methods are implemented and installed.

b. Sizes of rods and cross channels shall be capable of supporting 4 times and 5 times actual load, respectively. Anchorage shall support the combined weight of conduit, hanger and conductors.

c. Support individual horizontal conduit 1 1/2" and smaller by means of 2 hole straps or individual hangers.

d. Galvanized iron hanger rods sizes 1/4" diameter and larger with spring steel fasteners, clips or clamps specifically design for that purpose for 1 1/2" conduits and larger.

e. Support multi-parallel horizontal conduits runs with trapeze type hangers consisting of 2 or more steel hanger rods, preformed cross channels, 'J' bolts, clamps, etc.

f. Support conduit to wood structures by means of bolts or lag screws in shear, to concrete by means of insert or expansion bolts and to brickwork by means of expansion bolts.

g. Support multi-parallel vertical conduits runs with galvanized Unistrut, Power- Strut or approved equal type supports anchored to wall. Where multi-floored conduits pass through floors, install riser clamps at each floor.

h. Maximum conduit support spacing shall be in accordance with NECA Standard of Installation:

1) Horizontal runs:

a) 3/4" and smaller at 60" on centers, unless building construction prohibits otherwise, then 84" on centers.

b) 1" and larger at 72" on centers, unless building construction prohibits otherwise or any other condition, then 120" on centers.

2) Vertical runs:

a) 3/4" and smaller @ 84" on centers.

b) 1" and 1 1/4" @ 96" on centers.

c) 1 1/2" and larger @ 120" on centers.

d) Any vertical condition such as shaftways and concealed locations for any sized conduit, 120" on centers.

i. Anchorage for RMC/IMC supports unless otherwise specified:

1) < 1" IMC/RMC = #10 bolt/screw.

2) 1" IMC/RMC = 1/4" bolt/screw.

3) 1 1/2" and 2" IMC/RMC = 3/8" bolt/screw.

4) 3" IMC/RMC, 4" EMT = 1/2" bolt/screw.

5) > 3"IMC/RMC = 5/8" bolt/screw.

j. Anchorage for EMT supports unless otherwise specified:

1) < 1 1/2" EMT = #10 bolt/screw.

2) 1 1/2" EMT = 1/4" bolt/screw.

3) 2, 2 1/2" and 3" EMT = 3/8" bolt/screw.

4) 4" EMT = 1/2" bolt/screw.

5) > 4"EMT = 5/8" bolt/screw.

B. Boxes

1. Install boxes as shown on Drawings and as required for splices, taps, wire pulling, equipment connections and Code compliance.

2. Install additional pull boxes, not shown on Drawings, in sufficient quantities to facilitate pulling of conductors and cables such that total spacing does not exceed 150 feet or 270 degrees, total; and maximum pulling tension will not be exceeded.

3. Install plaster rings on all outlet boxes in stud walls or in furred, suspended or exposed ceilings. Covers shall be of a depth suited for installation.

4. Provide gasketed cast metal cover plates where boxes are exposed in damp or wet locations

5. Install access door for boxes installed within concealed locations without access.

6. Install approved factory made knockout seal where knockouts are not present.

7. Refer to Architectural interior elevations and details shown for exact mounting heights of all electrical outlets. In general, locate outlets as shown or specific and complies with Americans with Disabilities Act:

a. Convenience outlets: +18"AFF or +6" above counter or splash.

b. Local switches: +48"AFF or +6" above counter or splash.

c. Telecommunication outlets: +18"AFF or +48"AFF for wall telephone or intercom device.

d. Verify all mounting heights with Architectural Drawings, and where heights are not suited for construction or finish please consult Engineer or Architect.

8. Use conduit bodies to facilitate pulling of conductor or cables or change conduit direction. Do not splice within conduit bodies.

9. Enclose pull box with additional rated gypsum board as necessary to maintain wall's original fire rating.

10. Install galvanized steel coverplates on all open boxes within dry listed areas.

11. Install in-ground pull holes/boxes flush to grade finish at finished areas or 1" above finished landscaped grade. Seal all conduits terminating in pull hole/box watertight. Install and grout around bell ends where shown. Cover and lids shall be removable without damage to adjacent finish surfaces.

12. Support

a. Accurately place boxes for finish, independently and securely supported by adequate blocking or manufacturer channel type heavy-duty box hangers for stud walls. Do not use nails to support boxes.

b. Support boxes independent of conduit system.

c. Mount boxes installed within ceilings to 16 gauge metal channel bars attached to main runners or joists.

d. Support boxes within suspended acoustical tile ceilings directly from structure above when light fixture are to be installed from box.

e. Use auxiliary plates, bar or clips and grouted in place for masonry, block or pour-in-place concrete construction.

3.4 APPLICATION

A. Conduit

1. RMC/IMC suitable for all damp, dry and wet locations except when in contact with earth. IMC not suitable for hazardous locations as stated within CEC/NEC.

2. EMT suitable for exposed or concealed dry, interior locations.

3. PVC suitable for beneath ground floor slab, except when penetrating, and direct earth burial. Do not run exposed within concrete walls or in floor slab unless indicated on Drawings or per Engineer's permission.

4. FMC suitable for dry locations only for connections to motors, transformers, vibrating equipment/machinery, controllers, valves, switches and light fixtures in less than 6 foot lengths.

B. Termination and joints

1. Use raceway fittings compatible with associated raceway and suitable for the location.

2. Raceways shall be joined using specified couplings or transitions where dissimilar raceway systems are joined.

3. Conduits shall be securely fastened to cabinets, boxes and gutters using (2) two locknuts and insulating bushing or specified insulated connector. Where joints cannot be made tight and terminations are subject to vibration, use bonding jumpers, bonding bushings or wedges to provide electrical continuity of the raceway system. Use insulating bushings to protect conductors where subjected

to vibration or dampness. Install grounding bushings or bonding jumpers on all conduits terminating at concentric or eccentric knockouts.

4. Terminations exposed at weatherproof enclosures and cast outlet boxes shall be made watertight using specified connectors and hubs.

5. Stub freestanding equipment conduits through concrete floors for connections with top of coupling set flush with finished floor. Install plugs to protect threads and entrance of debris.

6. Install specified cable sealing bushings on all conduits originating outside the building walls and terminating within interior switchboard, panel, cabinet or gutters. Install cable sealing bushings or raceway seal for conduit terminations in all grade level or below grade exterior pull, junction or outlet boxes.

7. Where conduits enter building from below grade inject into filled raceways pre-formulated rigid 2 lbs. density polyurethane foam suitable for sealing against water, moisture, insects and rodents.

8. Install expansion fitting or expansion/deflection couplings per manufacturer's recommendations where:

a. Any conduit that crosses a building structure expansion joint; secure conduit on both sides to building structure and install expansion fitting at joint.

b. Any conduit that crosses a concrete expansion joint; install expansion/deflection at joint.

c. Any conduit greater than 1-1/4" is routed along roof top in runs greater than 100 feet; install expansion fittings every 100 feet.

d. Engineer may allow FMC or LFMC in lieu of expansion fitting or expansion/deflection couplings on conduits 2" and smaller within accessible locations upon further review and written consent.

C. Boxes

1. Standard type suitable for all flush installations and all dry concealed locations.

2. Concrete type suitable for all flush concrete installations.

3. Masonry type suitable for all flush concrete and block installations.

4. Surface cast meta type suitable for all exposed damp and wet surface mounted locations, and dry surface mounted locations less than 96" from finished floor

END OF SECTION 27 05 28

SECTION 27 11 16 – DATA RACKS AND ENCLOSURES

PART 1 - GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to telecommunication cabinets, racks and enclosures.

B. Related sections

1. Where items specified in other Division 27 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

a. 27 05 26 – Grounding and Bonding for Communications

2. The requirements of this Section apply to all Division 27 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24

a. Part 2 -California Building Code (CBC); ICBO Uniform Building Code (UBC) with California amendments

2. EIA –Electronic Industries Alliance

a. 310; Cabinets, Racks, Panels, and Associated Equipment

3. UL -Underwriters Laboratories, Inc.

a. 1863; Standard for Communications-Circuit Accessories

1.3SUBMITTALS

A. Submit manufacturer's data for grounding materials specified within this Section in accordance to Section 26 05 00.

1.4QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

PART 2 - PRODUCTS

2.1EQUIPMENT ENCLOSURE SYSTEMS

A. General:

1. Provide type, size and quantity as shown on Drawings. Unless otherwise noted, completely enclose interior of enclosure, or ensembles of enclosures with equipment, blank or vent panels, including sides and top. Provide rear access

door except at enclosures flush with the wall behind or enclosures which are portable.

2. Provide enclosure systems conforming to the latest CBC requirements for seismic design.

3. The drawings show a scheme of heat management based on generic conventionally packaged components to convey design intent. Coordinate fans, blank panels, vent panels and related heat management provisions with products provided.

4. Equipment Enclosures: Provide each bay with basic frame and pairs of adjustable mounting angles located at front and rear of each bay, angles tapped #10-32, EIA 310-D universally spaced. At each bay, provide pontoon base, solid top panel and with fan where noted or scheduled and locking rear door. Except where otherwise indicated, at each ensemble of bays, provide end (side) panels

to provide complete enclosure.

B. Intermediate Distribution Enclosure

1. Construction

a. Wall mounted, three part sectional, with:

1) Fixed mount wall terminal section.

2) Double hinge design for independent opening/motion of front door and main body.

3) Plexiglas locking front door with 16 gauge steel wall or as shown on Drawings.

b. Fully-adjustable 19" rails.

c. Combined depth of swing-away center section and fixed rear section to be not less than 24".

d. Provide lockable hasp to secure rack sections. Owner will supply padlock.

e. Enclosure shall be phosphate pre-treated and finished in a durable black powder coat finish.

f. Opening, 4" minimum for exhaust fan mounting on main body section. Provide fan and thermostat as described within this Section.

g. Manufacturers

1) Rittal EL Series, B-Line E2 Series or approved equal.

C. Intermediate Distribution Cabinet

1. Drawing Reference: WC##, where ## indicates minimum quantity of rack unit spaces.

2. Construction

a. Wall mounted, two piece design, with:

1) Fixed mount wall terminal section.

2) Solid locking front door with 16 gauge steel construction.

b. Provision for enclosed, integrated duplex receptacle when shown on Drawings.

c. Enclosure shall be phosphate pre-treated and finished in a durable black powder coat finish.

d. Opening, 4" minimum for exhaust fan mounting. Provide fan and thermostat as described within this Section.

e. Manufacturers

1) Hubbell Rebox series, Chatsworth ThinLine II or approved equal.

D. Full Height Equipment Relay Rack, Two Post System

1. Drawing Reference: 2RR##, where ## indicates minimum quantity of rack unit spaces.

2. Construction

a. Channels shall be 12 gauge steel minimum with #10-32 mounting holes.

b. Rack shall be phosphate pre-treated and finished in a durable black powder coat finish.

3. Manufacturers

a. Hubbell, Chatsworth, B-Line or approved equal.

E. Full Height Equipment Relay Rack, Four Post System

1. Drawing Reference: 4RR##, where ## indicates minimum quantity of rack unit spaces.

2. Construction

a. Channels shall be 12 gauge steel minimum with #10-32 mounting holes.

b. Rack shall be phosphate pre-treated and finished in a durable black powder coat finish.

3. Manufacturers

a. Hubbell, Chatsworth, B-Line or approved equal.

F. Full Height Equipment Enclosure

1. Drawing Reference: FE##, where ## indicates minimum quantity of rack unit spaces.

2. Construction

a. Channels shall be 12 gauge steel minimum with #10-32 mounting holes. All steel panels and door shall be 16 gauge CRS minimum.

b. Enclosure shall be phosphate pre-treated and finished in a durable black powder coat finish.

c. Removable front and rear locking doors with universal swing capability. Provide front Plexiglas door and rear steel, vented unless noted otherwise on Drawings.

d. Field removable steel side panels.

e. Install top panel with 2 openings minimum for exhaust fan mounting. Provide 2 fans and thermostat as described within this Section. Install wire guards over unused openings.

f. Adjustable feet for leveling.

g. Capable, with proper option, to comply with CBC Zone 4 seismic requirements.

h. EIA 310-D compliant and UL listed.

3. Manufacturers

a. Hubbell, Chatsworth, B-Line or approved equal.

2.2RACK PANELS AND ACCESSORIES:

A. Rack Mounting Screws:

1. Screws 10-32; length as required for at least ¼" excess when fully seated; oval head with black plastic non marring cup washer or equivalent ornamental head; nickel, cadmium or black plated; Phillips, Allen Hex, Square-Tip or Torx drive. Slotted screws are not acceptable.

B. Vertical Wire Management Section:

1. All Steel construction with black finish.
2. Total cross-sectional area of vertical tray shall be greater than 26 square-inches.
3. Universal hole pattern to bolt to rack channel.
4. Provide matching de-attachable front covers.
5. Manufacturers
   a. Panduit, Hubbell or approved equal.

C. Horizontal Wire Management Panel (1 or 2 Rack Unit(s)):

1. All Steel construction with black finish.
2. Panel without cover will not be accepted.
3. Manufacturers
   a. Panduit, Hubbell or approved equal.

D. Blank Panels:

1. Flanged steel construction with black finish.
2. Manufacturers
   a. Middle Atlantic Products, Atlas/Soundolier or approved equal.

E. Vent Panels:

1. Flanged steel construction with black finish.
2. Manufacturers
   a. Middle Atlantic Products, Atlas/Soundolier or approved equal.

2.3EQUIPMENT ENCLOSURE VENTILATION:

A. Enclosure exhaust fan

1. Characteristics
   a. UL labeled 4 ½" diameter fan of smooth ball bearing design.
   b. Electrical: 115Vac, 60Hz
   c. Air flow: approximately 50CFM
   d. Sound level: <40dBA
2. Supply metal wire guard where exposed.
3. Manufacturers
   a. Comair Rotron, Rittal or approved equal.

B. Enclosure thermostat

1. Characteristics
   a. UL labeled device with bi-metal temperature sensitive element.
   b. Temperature control range from +10□C to +60□C
   c. Electrical

1) Requirements: 115Vac, 60Hz

2) Output Contact: 1A minimum at 120Vac

2. Manufacturers

a. Rittal, Honeywell or approved equal.

2.4EQUIPMENT ENCLOSURE POWER, PROTECTION AND SIGNAL GROUNDING

A. Receptacle Strip, One(1) Circuit.

1. Features/Construction:

a. Receptacles

1) Outlets shall be NEMA 5-15R with isolated ground.

2) Provide 1 duplex receptacle for every 12" of rack height with no fewer than 2 and no greater than 7 duplex receptacles for any one rack/enclosure.

b. Power strip shall be ready for hardwire installation with junction box or 36" minimum flexible whip connection.

c. All steel construction with durable powder coat finish.

d. UL labeled.

e. Provide mounting hardware as necessary to rack chassis.

2. Acceptable

a. Middle Atlantic Products, Wiremold or approved equal. PART 3 - EXECUTION

3.1INSTALLATION

A. Combustible material, other than incidental trim of indicated equipment, is prohibited within equipment racks.

B. Access shall not require de-mounting or de-energizing of equipment. Install access covers, hinged panels or pull-out drawers as required to insure complete access to terminals and interior components.

C. Provide adequate work room clearances per CEC Article 110.

D. Provide permanent labels for all equipment devices installed within rack(s)/enclosure(s).

E. Ventilation System

1. Connect thermostat and exhaust fans to enclosure's receptacle/branch circuit, and comply with CEC for wiring and overcurrent protection.

2. Mount thermostat at rear of enclosure, closest to top of either one third the distance from enclosure top or highest mounted active hardware component.

3. Set thermostat at +32□C (+90□F).

F. Anchorage wall and floor mounted racks/enclosures to structural members to withstand seismic forces based upon rack/enclosure's maximum load capacity.

END OF SECTION 27 11 16

SECTION 27 15 13 – COPPER TELECOMMUNICATIONS/DATA CABLING AND DEVICES

PART 1 - GENERAL

1.1SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to copper data communication cabling systems and copper based telecommunication, which include:

a. Category 5E cabling

1) Provide scheduled station plates at each indicated location. Provide labeled Category 5E modules in the plates, and document per Specifications.

2) Homerun all station cabling from each universal Category 5E data jack to the indicated MDF or IDF.

3) Provide Category 5E patch panels where indicated. Terminate and test Category 5E cabling as detailed within the Specifications.

4) Terminate, test and document Category 5E cabling as detailed within the Specifications.

b. Category 3, RUS (REA) and USOC telephone cabling

1) Provide scheduled station plates at each indicated location.

2) Homerun all station cabling from each telephone jack to indicated cabinet/telephone backboard.

3) Provide punch blocks as necessary; terminate and test as detailed within the Specifications.

B. Related sections

1. Where items specified in other Division 27 sections conflict with the requirements of this Section, the most stringent requirement shall govern.

a. 27 05 26 – Grounding and Bonding for Communications

b. 27 11 16 – Data Racks and Enclosures

c. 27 05 28 – Pathways for Communication System

2. The requirements of this Section apply to all Division 27 work, as applicable.

3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.2REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. ANSI –American National Standards Institute

a. ISO/IEC 11801; Information technology - Generic cabling for customer premises

2. CCR –California Code of Regulations, Title 24

   a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments

3. CFR –Code of Federal Regulations

   a. Title 7 –Agriculture, Part 1755 – Telecommunications Standards and Specifications for Materials, Equipment and Construction

   b. Title 47 –Telecommunication, Part 68 – Connection of Terminal Equipment to the Telephone Network.

4. TIA/EIA – Telecommunications Industry Association/Electronic Industries Alliance

   a. Wiring/Cabling Standards

      1) TIA/EIA-568-B.1; Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements

      2) TIA/EIA-568-B.2; Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components

      3) TIA/EIA-569-A; Commercial Building Standards for Telecommunications Pathways and Spaces

      4) TIA/EIA-606; Administration Standard for the Telecommunications Infrastructure of Commercial Buildings

      5) TIA/EIA/IS-729; Technical Specifications for 100 Ohm Screened Twisted-Pair Cabling

      6) TIA/EIA-758; Customer Owned Outside Plant Telecommunications Cabling Standard

      7) TSB67; Transmission Performance Specifications for Field Testing of Unshielded Twisted-Pair Cabling Systems

      8) TSB95; Additional Transmission Performance Guidelines for 4-Pair 100 Category 5 Cabling

5. ICEA –Insulated Cable Engineers Association

   a. S-56-434; Polyolefin Insulated Communications Cables For Outdoor Use

   b. S-80-576; Category 1 & 2 Individually Unshielded Twisted Pair Indoor Cables for Use in Communications Wiring Systems

   c. S-90-661; Category 3, 5, & 5e Individually Unshielded Twisted Pair Indoor Cable for Use In General Purpose and LAN Communication Wiring Systems

   d. -101-699; Standard For Category 3 Individually Unshielded Twisted Pair Indoor Cable For Use In General Purpose Non-Lan Telecommunication Wiring Systems

6. IEEE –Institute of Electrical and Electronic Engineers

   a. C2; National Electrical Safety Code (NESC)

   b. 802.3; Information Technology -Local and Metropolitan Area Networks

   c. 820; Standard Telephone Loop Performance Characteristics

7. NECA –National Electrical Contractors Association

a. NECA/BICSI 568; Standard for Installing Commercial Building Telecommunications Systems

8. UL –Underwriters Laboratories, Inc.

a. 444; Communications Cables

b. 497; Standard for Protectors for Paired-Conductor Communications Circuits

c. 1581; Reference Standard for Electrical Wires, Cables, and Flexible Cords

d. 1666; Standard Test for Flame Propagation Height of Electrical and Optical-
Fiber Cables Installed Vertically in Shafts

e. 1685; Standard for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables

f. 1863; Standard for Communications-Circuit Accessories

9. U.S. Department of Agriculture, Rural Utilities Service (RUS), formerly Rural Electrification Administration (REA) Standards

a. PC-2; Splicing Plastic Insulated Cables

b. PC-4; Acceptance Tests and Measurements of Telephone Plant

c. PE-22; Aerial and Underground Telephone Cable

d. PE-33; Shield Bonding Connectors

e. PE-39; Filled Telephone Cables

f. PE-52; Telephone Cable Splicing Connectors

g. PE-60; Trunk Carrier Systems

h. PE-74; Filled Splice Closures

i. PE-87; Terminating (TIP) Cable

j. PE-89; Filled Telephone Cable with Expanded Insulation

k. TE&CM Section 644; Design and Construction of Underground Cable

1.3SYSTEM PERFORMANCE STANRDARDS

A. Voice copper plant

1. To Universal Service Ordering Code (USOC) Standards (CFR Title 47, Part 68, Subpart F, Section 68.502) and other appropriate authorities.

2. Where voice plant cabling is specified for connection to RJ-11 or RJ-14 jacks conform to USOC and Category 3 standards as demonstrated using the appropriate test equipment.

B. Category 5E copper cabling plant:

1. To applicable EIA/TIA standards using a digital cable analyzer as specified herein.

1.4SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.5QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

B. Installer Qualifications

1. The work performed under this Section shall be certified by the manufacturer of the equipment and components being furnished and be authorized by the manufacturer to install and convey the product warranty and performance guarantee to the Owner upon completion of Contract.

2. Installing Contractor must have a minimum of three years previous experience in data communications and/or telecommunication systems installation. All Contractors and/or Vendors supplying all or parts of the work described herein shall supply three project references within the Submittal package at the Engineer's request, which substantiate the Contractor/Vendors' previous experience as noted herein.

C. Testing Equipment

1. Furnish in conformance with the applicable requirements of this Section.

2. Test systems using at least one each of the following test measurement devices or approved functional equivalents:

a. Digital cable analyzer with applicable copper and/or fiber testing standards required within this Section.

b. Cabling plant tester capable of detecting shorts, opens, reversals and miswires.

c. Tone test set capable of analyzing line condition of voice lines.

d. Any other items of equipment or materials required to demonstrate conformance with the Contract Documents.

1.6DELIVERY, STORAGE AND HANDLING

A. Wire shall be in original unbroken package. Obtain approval of Inspector or Engineer before installation of wires.

B. Handle carefully to avoid damage to internal components, enclosure and finish.

C. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional cover to protect enclosure in harsh environments.

1.7WARRANTY

A. Furnish guarantee in accordance with and in form required under Section 26 05 00.

B. Provide 15 year manufacturer's warranty covering application assurance, product, cable, and labor for installations performed by a certified installer using the manufacturer's connecting hardware and qualified cables.

PART 2 - PRODUCTS

2.1DATA/VOICE CATEGORY-5E RATED COPPER CABLES

A. General

1. Exceeds EIA/TIA-568 Category 5E requirements and tested to 350Mhz.
2. Conductors shall be 24AWG solid annealed bare copper.
3. Outdoor, underground cables must be UL listed for wet applications.
4. Cabling construction and use shall comply with CEC Article 800.

B. Indoor, General (Type CM/CMG/CMR/CMP)

1. Drawing Reference: UTP5E4
2. Cables installed within vertical shafts or risers shall be Type CMR or CMP listed.
3. Construction: Thermoplastic insulated 8 conductor (4 pair) assembly with flame retardant PVC jacket.
4. Manufacturer: Commscope Ultra II, Mohawk MegaLAN, Superior Essex Cobra or approved equal.

C. Indoor, Plenum (Type CMP)

1. Drawing Reference: UTP5E-4P
2. Construction: FEP/PE insulated 8 conductor (4 pair) assembly with low smoke PVC/FEP jacket.
3. Manufacturer: Commscope Ultra II, Mohawk MegaLAN, Superior Essex Cobra or approved equal.

D. Outdoor, Underground

1. Drawing Reference: UTP5E-4OP
2. Construction: FEP/PE insulated 8 conductor (4 pair) assembly with floodant compound and PE jacket.
3. Manufacturer: Commscope Ultra II, Mohawk MegaLAN or approved equal.

E. Indoor, Shielded (Type CM/CMG/CMR/CMP)

1. Drawing Reference: STP5E-4
2. Construction: FEP/PE insulated 8 conductor (4 pair) with an overall tape/drain shield and flame retardant PVC or low smoke PVC/FEP jacket.
3. Manufacturer: Mohawk MegaLAN or approved equal.

F. Outdoor, Underground Shielded

1. Drawing Reference: STP5E-4OP
2. Construction: PE/PVC insulated 8 conductor (4 pair) with an overall tape/drain shield, floodant compound and PE/PVC jacket.
3. Manufacturer: Mohawk MegaLAN or approved equal.

2.2TELEPHONE PLANT COPPER CABLES

A. General

1. Cables which interconnect interior distribution centers and terminate at station jacks shall conform to ICEA S-80-576, Category 1 or Category 3 standards.

2. Conductors shall be 22AWG solid annealed bare copper with minimum pair counts indicated on the plans.

3. Outdoor, underground cables must be UL listed for wet applications.

4. Cabling construction and use shall comply with CEC Article 800.

B. Indoor, General (Type CM/CMG/CMR/CMP)

1. Drawing Reference: UTP-##, where ## refers to required pair count

2. Cables installed within vertical shafts or risers shall be Type CMR or CMP listed.

3. Construction: Thermoplastic insulated conductors situated as paired assemblies with a flame retardant PVC jacket.

4. Manufacturer: Belden, Mohawk or approved equal.

C. Indoor, Plenum (Type CMP)

1. Drawing Reference: UTP-##P, where ## refers to required pair count

2. Construction: FEP/PE insulated conductors situated as paired assemblies
3. with a low smoke PVC/FEP jacket

4. Manufacturer: Belden, Mohawk or approved equal.

D. Outdoor, Underground Within Duct

1. Less than (≤) 4 pair trunk cables

a. Drawing Reference: STP-##OP, where ## refers to required pair count

b. Construction: Polyolefin, PE or PVC insulated conductors situated as paired assemblies with a foil shield, floodant compound and PE jacket.

c. Manufacturer: Belden, Westpenn Aquaseal or approved equal.

2. Greater than (>) 4 pair trunk cables

a. Drawing Reference: STP-##OP, where ## refers to required pair count

b. Construction:

1) Shall be RUS (REA) PE-89 listed, and suitable for direct burial.

2) PE jacket with aluminum tape shield and flooded core assembly.

3) The core assembly shall consist of twisted pair cables with : polyolefin insulation.

c. Manufacturer: General Cable, Superior Essex SEALPIC-FSF or approved equal.

2.3DATA/VOICE STATION JACKS & MODULES

A. General Jack and Module Requirements

1. Meets or exceeds the following configuration and performance standards where applicable:

a. EIA/TIA 568B

b. ISO/IEC 11801, Class E

c. UL1863

d. CEC/NEC Article 800

e. FCC Part 68

2. High impact, flame retardant thermoplastic.

3. Integral locking mechanism upon insertion of a modular plug.

B. Voice jack USOC grade

1. Six (6) position, RJ25 configuration jack conforming to USOC requirements.

2. Manufacturers

a. Leviton, Siemon or approved equal.

C. Voice and/or data jack, Category 3

1. Eight (8) position, RJ45 configuration jack conforming to EIA/TIA 568B and USOC requirements.

2. Manufacturers

a. Leviton, Siemon or approved equal.

D. Data jack Category 5E

1. Eight (8) position, RJ45 configuration jack conforming to EIA/TIA 568B requirements.

2. Manufacturers

a. Leviton GigaMax 5e+, Siemon Max 5e or approved equal.

2.4TELECOMMUNICATION STATION PLATES

A. Modular plates

1. Construction

a. Modular, with snap-in receptacle options as scheduled.

b. Single gang plate size and mounting.

c. Options for 1 to 6 modular jacks per plate.

d. Plate face shall be nylon; color shall be compatible with adjacent wall finish, unless otherwise indicated.

e. Integral labeling provided for plate identifier and identifier for each receptacle on the plate. Provide as follows:

1) Plate nominally 1-½" by ½"recessed slot with clear plastic cover over paper label. See labeling requirements in Part 3 of this Section.

2) Receptacle identifier(s) shall be iconic or literal descriptions of each receptacle type.

f. System shall provide at minimum the following receptacle options:

1) RJ45 Category 3 or RJ25 voice

2) RJ45 Category 5E data

3) 75Ω BNC

4) 75Ω F

5) Phono (RCA) type

6) ST fiber adapter

7) SC fiber adapter

8) S video

9) Blank plate fillers as required to fill unused area.

2. Manufacturers

a. Leviton QuickPort MOS, Siemons CT or approved equal

B. Wall phones plates (non-VOIP or Category-5e jack type)

1. Construction

a. Single gang plate size and mounting.

b. Plate face shall be stainless steel with 2 mounting stud type screws for mounting of telephone handset; unless otherwise indicated.

c. Jack shall be USOC voice grade as described above.

2.5CABLE TERMINATION EQUIPMENT AND RELATED, CATEGORY RATED

A. Data Patch Panels, Category 5E Rated, Rack Mounted

1. Drawing Reference: ##C5EPP, where ## refers to port count.

2. Functions/Features

a. 19" EIA rack mountable.

b. 24 ports per one (1) EIA rack unit (1.75") minimum, unless otherwise noted on Drawings.

c. Keyed, block form RJ-45/Category 5E jacks and 110 terminations meeting specifications elsewhere herein.

1) Arranged in rows on steel panel.

2) Jacks on front and terminations on rear.

d. Port identifier label space on front.

e. Provide wire management rings in a ratio of at least 4 rings for every 24 ports.

3. Manufacturers

a. Leviton, Siemon or approved equal.

B. Category 3 Terminal Block with Pre-Wired RJ21C Connector

1. Drawing reference: 110PWTB##, where ## refers to pair count.

2. Features/Functions

a. Type 110 terminal block with pre-wired RJ21C 50 pin connector on block or on end of pigtail stub cable.

b. Meets Category 3 specifications.

3. Manufacturers

a. Siemon S110A series, Siemon S700 or approved equal.

C. Category 3 Rack Mount Patch Panels with Pre-Wired RJ21C Connector

1. Drawing reference: ##110PWC3PP, where ## designates port count.
2. Features/Functions/Construction
   a. 19" EIA rack mount panel.
   b. Front face: RJ45 jacks
   c. Rear face: Pre-wired RJ21C 50 pin connector(s).
   d. Printed Circuit board linking RJ45's to RJ21C – all four pairs wired straight through.
   e. Meets Category 3.
   f. At least 24 Jacks per rack unit (RU).
3. Manufacturers
   a. Siemon, Signamax or approved equal.

2.6MISCELLANOUS DEVICES

A. Shield Connectors

1. Shield connectors shall make a stable, low-impedance electrical connection between the shield of the communications cable and a conductor such as a strap, bar or wire.
2. The connector shall be made of tin-plated tempered brass.
3. RUS PE-33 compliant.
4. Manufacturers
   a. Preformed Line Products Servi-Bond or approved equal.

B. Grounding Braid

1. Ground braid shall provide low electrical impedance connections for dependable shield bonding.
2. The braid shall be made from 1/2" wide flat tin-plated copper, length as required.
3. Provide eyelets as necessary for bonding purposes.
4. Manufacturers

a. Thomas Betts, 3M or approved equal. PART 3 - EXECUTION

3.1EXAMINATION

A. Verify that all raceways have been de-burred and properly joined, coupled, and terminated prior to installation of cables. Verify that all raceways are clear of foreign matter and substances prior to installation of wire or cable.

B. Inspect all conduit bends to verify proper radius. Comply with Code and cable manufacturer requirements for minimum permissible radius and maximum permissible deformation.

3.2INSTALLATION

A. Separation of Wires: Comply with EIA/TIA-569 rules and CEC/NEC 800-52 for separation of unshielded copper voice and data system cables from potential EMI sources, including electrical power lines and equipment.

B. All necessary interconnections, services, and adjustments required for a complete and operable system shall be provided. All installation work must be done in accordance with the safety requirements set forth in the general requirements of IEEE C2 and CEC/NEC 800.

C. Unless otherwise noted, all trunk and backbone cables and conductors shall have surge and ground protection installed at each end which meets RUS PE-60 requirements. Refer to requirements herein and within the referencing Section as to the acceptable products in each application.

D. Wire and cable installation:

1. All wire and cable shall be continuous and splice-free for the entire length of run between designated connections or terminations.

2. At designated splices, maintain conductor color code across all splices.

3. Copper conductor voice cable outside plant splicing shall be accomplished in accordance with RUS PC-2.

4. All shielded cables shall be insulated. Do not permit shields to contact conduit, raceway, boxes, panels or equipment enclosures.

5. Within buildings, make splices only in designated terminal cabinets and/or on designated equipment backboards.

6. Outdoor splices shall not be permitted except where specifically noted or where required by the run length. Where run lengths require outdoor splices not noted on the drawings, notify Engineer in writing for direction before proceeding.

7. Do not subject wire and cable to tension greater than that recommended by the cable manufacturer. Use multi-spool rollers where cable is pulled in place around bends. Do not pull reverse bends.

8. Provide a box loop for all wire and cable routed through junction boxes or distribution panels. Provide tool formed thermal expansion loops at cable at manholes, handholes and at both sides of all fixed mounted equipment. Cable loops and bends shall not be bent at a radius greater than that recommended by the manufacturer.

9. Secure all wire and cable run vertically for continuous distances greater than thirty (30) feet. Secure robust non-coaxial cables with screw-flange nylon cable ties, kellem grip or similar approved devices appropriate to weight of cable. For all other cables, provide symmetrical conforming nonmetallic bushings or woven cable grips appropriate to weight of cable.

10.Where drawings specifically permit use of exposed cable installation in Plenum and/or Suspended Ceiling voids, conform to the following:

a. Conform to EIA/TIA 569 with respect to separation from power and radio frequency (RF) sources. Provide at least twice the listed separation at fluorescent light fixtures, ballasts and similar high intensity EMF sources (including but not limited to motors, transformers and copiers).

b. Support: Provide support for all cabling. Do not place or attach directly to T- bar grid, concealed spline grid, flexible or rigid ductwork, HVAC registers, sprinkler piping or fixtures, light fixtures.

1) Provide supports at least 48" on center, with cables installed with slight sag to ensure conformance with EIA TSB40 tensioning and stress limits.

c. Placement: Do not obscure access to access doors, hatches, air dampers, valves, cable trays, junction boxes, pull boxes or similar areas of access.

d. Place EMT pipe sleeves at all wall penetrations. Fire stop sleeves and cables where penetrating a rated wall with an approved UL assembly.

11. Wiring practices

a. Land all non-coaxial field wiring entering each equipment rack at specified terminal devices prior to connection to any equipment or devices within racks. At Contractor's option and at no additional costs to Owner, such terminals may be located in the equipment racks or in the terminal cabinets provided.

b. Apply all crimp connectors only with manufacturer's recommended ratchet type tooling and correct crimp dies for connector and wire size; pliers type crimp tooling shall not be acceptable.

c. Coordinate insulation displacement (quick connect) terminal devices with wire size and type. Comply with manufacturer's recommendations, and

make connections with automatic impact type tooling set to a recommended force.

d. Make all connections to screw-type barrier blocks with insulated cirmp-type spade lugs. Lugs are not required at captive compression terminal type blocks. Provide permanent designation strips designed for use with the terminal blocks provided. Make neat, intelligible markings with indelible markers equivalent to "Sharpie".

e. Tin terminated shield drain wires and insulate with heat shrinkable tubing.

f. Use only rosin core 60/40 tin/lead solder for all solder connections.

g. Dress, lace or harness all wire and cable to prevent mechanical stress on electrical connections. No wire or cable shall be supported by a connection point. Provide service loops where harness of different classes cross or where hinged panels are to be interconnected.

h. Termination and build-out resistors and related circuit correction components shall be visible. Do not install in connector shells or internally modify equipment. Show locations on Record Drawings.

i. Correct any and all of the following unacceptable wiring conditions:

1) Deformed, brittle or cracked insulation.

2) Torn or worn cable jacket.

3) Excessively scored cable jackets

4) Insulation shrunken or stripped further than 1/8" away from the actual point of connection within a connector, or on a punch block.

5) Cold solder joints.

6) Flux joints.

7) Solder splatter.

8) Ungrommeted, unbushed, or uninsulated wire or cable entries.

9) Deformation or improper radius of wire or cable.

12.Data cabling wiring practice (For copper cabling used in circuits of >1.0 Mbps conform to the following, in addition to the general requirements above.)

a. Limit cable bends to a minimum radius of eight (8) times cable diameter except where otherwise noted herein.

b. At junction boxes, form circular radius bends of eight times cable diameter minimum. Up to two (2) flat bends of 90□ or less are permitted in any single cable run where necessary to accommodate field wiring conditions. Flat bends exceeding 90□ will not be accepted.

c. At the receptacle, a single bend of 90□ or less and a 1 inch radius shall be permitted subject to the cable manufacturer certification of such an installation meeting Category 5E requirements. Contractor to field verify the performance of the proposed installation in a mockup using the proposed cabling, jacks, raceway and listed test equipment prior to proceeding.

d. Tie wraps to be hand (not tool) tightened.

e. Total run not to exceed 92 meters (300 feet). If condition exists report exceeded requirements to Engineer.

13.Labeling

a. Provide permanent identification of run destination at all raceway terminations. Identify at each manhole, vault, handhole, terminal cabinet, pull box, equipment rack and receptacle/outlet.

b. Unless otherwise noted, conform to the standards and methods of EIA/TIA 606.

c. Identify all wire and cable clearly with permanent labels rapped about the full circumference within one (1) inch of each connection. Provide any of the following:

1) Continuous permanent imprint; equivalent to Clifford of Vermont, Inc. "Quick-Pull".

2) Direct hot stamp.

3) Heat shrinkable factory hot stamped; equivalent to Bradysleeve Heatshrink.

4) Adhesive strip printed labels wrapped the full circumference of the wire and sealed with clear heat shrink tubing; equivalent to Thomas Betts or Panduit Insta-code with clear heat-shrunk tubing equivalent to Alpha.

5) Outside Plant, in Manholes or Pull Boxes. Panduit Fiber Optic Cable Marker Tags (Type PST-FO) or Lead tags, 2" square, drilled for cable attachment. Use cable ties or THWN #12 or 2 #14 wrapped twice around the cable bundle and secure to tag using a crimp fastener.

d. Indicate:

1) Indicate the number designated on the associated field or shop drawing or run sheet, as applies. Assign wire or cable designations consistently throughout a given system. Each wire or cable shall carry the same labeled designation over its entire run, regardless of intermediate terminations.

2) Indicate installation date.

e. Terminal cabinet, pull box and manhole, handhole, vault or similar locations subject to abuse, label in accordance to Section 26 05 00.

1) Patching Bays and Jacks and Receptacles containing six or fewer jacks/outlets: Provide designation strip holders with clear plastic covers to retain replaceable designation strips. Provide designation strips with block lettering on permanent background in contrasting color. Use photographic print, laser print on acid free paper, plotting ink on Mylar, or equivalent non-fading process. Alternatively, provide black on white adhesive labels equivalent to those produced by Brother brand P-Touch Letter Machine. Embossed plastic (Dymo) labels shall not be acceptable. The presence of manufacturer provided silk screen iconic identification labels shall not relieve the contractor from the requirement to identify the receptacle with its associated cabling and circuit.

14. Signal grounding procedures

a. Where items specified in Section 28 05 26 conflict with the requirements of this Section, the most stringent requirement shall govern.

b. Equipment enclosures shall not be permitted to touch each other unless bolted together and electrically bonded.

c. Ground and bond equipment racks and similar equipment enclosures containing powered equipment exclusively to a telecommunication grounding bus bar.

d. At each rack, provide a lug bonded to the rack frame with a #10 Cu THWN stranded wire to the rack isolated ground bus.

e. Equipment signal ground shall be to racks isolated ground bus via the green wire of the equipment power cord. Where equipment uses an ungrounded power cord, provide #12 green bond wire to rack isolated ground bus bar. At equipment housing, provide crimp lug and suitable hardware for bonding.

f. Shielded cables of this section shall be grounded exclusively to a telecommunication grounding bus bar by a single path. Shield shall be tied to ground bar at one end only, i.e., at the low potential (receiving) end of run, unless otherwise noted.

3.3FIELD QUALITY CONTROL

A. General

1. Test and report on each intermediate cabling segment separately, including station cabling, horizontal distribution (each segment, if multiple) and telecommunications closet wiring.

2. Test each end to end cable link.

3. Submit copy of final results on paper and in machine readable form, organized by circuit number, consistent with circuit numbering scheme used in preparing submittal drawings and in labeling receptacles and terminations.

a. Submit machine-generated documentation and raw data of all test results on Contractor-provided, Owner approved forms; and in electronic format approved by the Owner.

b. Where the machine-generated documentation requires use of a proprietary computer program to view the data, provide the Owner with 1 licensed copy of the software.

c. Provide registered testing software used for the actual tests to the Owner/Engineer for review of test data as may be required.

B. Station Wiring, General

1. Test station wire only after all pairs of station wire in a work area have been terminated at both ends, and no work of this Section or other Sections may cause physical disturbance to the wiring.

2. Correct any and all transpositions found, and retest.

3. If any conductor in a station wire tests either open or short, then the entire station wire is to be removed, replaced and retested.

C. Inside Cabling

1. Using a listed Category 5E cable test set, test and submit report on the parameters specified. Report whether tested link passes or fails the Category 5E standards outline within EIA/TIA-568.

2. Note exceptions to required Category standards. Remedy and retest.

D. Telephone: Outside Plant, Inside Riser Wire, Voice Station Wire (where not Category rated):

1. General

a. A new cable shall be tested only after all wires within the cable have been terminated at both ends.

b. For unshielded cable, "measurements to ground" means an electrical connection to the Telecommunications Ground Bus, building steel, electrical metallic conduit or a water pipe.

c. The Contractor shall correct all defects possible.

d. If the maximum number of un-repairable defective pairs exceeds 4% of the cable's pair count, the cable shall be deemed unacceptable and shall be replaced. Replace, re-terminate and retest new cable at no additional cost to the Owner.

2. Test procedures

a. Test #1 – Continuity:

1) Meter set for 20□ full scale ohm reading. Each pair shall be shorted at one end and the loop resistance value read at the other.

2) The difference between the largest and the smallest resistance reading from each pair in the cable shall be no more than 10 percent of the largest reading.

b. Test #2 – Balance, Polarity and Conductor Transpositions:

1) Upon passing Test #1, the tester at one end of cable shall ground tip side of each pair in turn. The tester at other end of cable reads resistance to building ground of same conductor.

2) Reading for each tip conductor in pair of approximately on-half of loop resistance value from Test #1.

3. Test Report

a. Submit Test Report. Documentation shall include loop resistance regarding any opens, shorts, transpositions as well as corrective actions.

END OF SECTION 27 15 13

BID DOCUMENTS

A) **BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

COMPANY NAME: BMY Construction Group, Inc.

CONTACT NAME: Eric Bower

ADDRESS: 5485 E. Olive Ave., Fresno, CA 93727

TELEPHONE NUMBER: (559) 243-4200

EMAIL: ebower@bmyinc.com; estimating@bmyinc.com

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
1	LS	$_____/ea.	$1,434,725.00
N/A	N/A	$ N/A /ea.	$N/A

Subtotal $1,434,725.00

Sales Tax (9%) $ Incl.

GRAND TOTAL $1,434,725.00

The bidder warranties this equipment for a minimum period of 1.1 years.

Complete delivery will be made within 235 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

BMY Construction Group, Inc.
FIRM

5485 E. Olive Ave., Fresno, CA 93727
ADDRESS

Eric L. Bower
SIGNED BY Eric L. Bower

President
TITLE OR AGENCY

8/18/16
DATE

(559) 243-4200
TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS

B) PUR 15-033

***C)* AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

BMY Construction Group, Inc.	5485 E. Olive Ave., Fresno, CA 93727
FIRM	ADDRESS
	President
Eric L. Bower	
SIGNED BY	TITLE OR AGENCY

ebower@bmyinc.com; estimating@bmyinc.com
E-MAIL ADDRESS

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____ being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA, Fresno)ss.
County of Fresno)
(insert)

Eric L. Bower being first duly sworn, deposes and says: That they are the President of BMY Construction Group, Inc. a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____ See attached

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____ who is the party making the foregoing bid; that the other partner, or partners, are _____ that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____

Signature of Document Signer No. 1 *Signature of Document Signer No. 2 (if any)*

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Fresno

Subscribed and sworn to (or affirmed) before me on this 18 (*Date*) day of August (*Month*), 2016 (*Year*), by
(1) Eric Bower
(and (2) _____),
Name(s) of Signer(s)
proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

JANNA JENSEN
Commission # 2100849
Notary Public - California
Fresno County
My Comm. Expires Feb 21, 2019

Signature Janna Jensen
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____ Document Date: _____

Number of Pages: _____ Signer(s) Other Than Named Above: _____

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

DESIGNATION OF SUBCONTRACTORS
(TO BE SUBMITTED WITH BID)

In compliance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code section 4100 et seq) and any amendments thereof, each bidder shall set forth below: (a) the name, the location of the place of business, and the California contractor license number of each subcontractor who will perform work or labor or render service to the bidder (prime contractor) in or about the construction of the work or improvement to be performed under this Contract or a subcontractor licensed by the State of California who, under subcontract to the bidder (prime contractor), specially fabricates and installs a portion of the work or improvement according to be detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent of the bidders (prime contractors) total bid and (b) the portion of the work which will be done by each subcontractor. The bidder (prime contractor) shall list only one subcontractor for each portion as is defined by the bidder (prime contractor) in this bid. **In accordance with Public Contract Code 4104(B), any information requested other than subcontractor's name, location of business, contractor license number, and portion of work may be submitted up to 24 hours after the deadline for receipt of bids.**

If a bidder (prime contractor) fails to specify a subcontractor or if a bidder (prime contractor) specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the bidders (prime contractors) total bid, bidder shall be deemed to have agreed that bidder is fully qualified to perform that portion, and that bidder alone shall perform that portion.

No bidder (prime contractor) whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the bidder (prime contractors) total bid as to which the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act. Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the bidders (prime contractors) total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and only after a finding reduced to writing as a public record of the District awarding this contract setting forth the facts constituting the emergency or necessity.

Note: If alternate bids are called for and bidder intends to use different or additional subcontractors on the alternates, a separate list of subcontractors must be provided for each such alternate. Identify any such additional subcontractors by alternate bid number.

*** Required at time of bid**

Subcontractors Information

1. ***Company Name:** Housley	
***Location of Business:** Visalia	Email:
Ph. No. ( )	***License No.:** 900933
***Type of Work:** Demolition	Registration No.: 1000001104

* Required at time of bid

Subcontractors Information

2. *Company Name: Alcal	
*Location of Business: Stockton	Email:
Ph. No. ( )	*License No.: 815286
*Type of Work: Insulation	Registration No.: 1000000315
3. *Company Name: IWS	
*Location of Business: Modesto	Email:
Ph. No. ( )	*License No.: 714669
*Type of Work: Doors, Frames, Hardware	Registration No.: 1000011574
4. *Company Name: Mountian Valley	
*Location of Business: Valley Springs	Email:
Ph. No. ( )	*License No.: 887953
*Type of Work: Glass	Registration No.: 1000006847
5. *Company Name: [redacted]	
*Location of Business: [redacted]	Email: [redacted]
Ph. No. ( )	*License No.: [redacted]
*Type of Work: Metal Framing & Drywall	Registration No.: [redacted]
6. *Company Name: Arrow Acoustics	
*Location of Business: Hayward	Email:
Ph. No. ( )	*License No.: 260647
*Type of Work: Acoustical Ceiling	Registration No.: 1000001883
7. *Company Name: Capital Commercial	
*Location of Business: Sacramento	Email:
Ph. No. ( )	*License No.: 446458
*Type of Work: Flooring	Registration No.: 1000002274

* Required at time of bid

Subcontractors Information

8. *Company Name: Herlache & Sons	
*Location of Business: Roseville	Email:
Ph. No. ( )	*License No.: 472047
*Type of Work: Painting	Registration No.: 1000002225
9. *Company Name: [redacted] Sierra Casework	
*Location of Business: Modesto [redacted]	Email:
Ph. No. ( )	*License No.: [redacted] 802541
*Type of Work: Casework	Registration No.: 1000000[redacted]
10. *Company Name: Cosco Fire Protection	
*Location of Business: Rocklin	Email:
Ph. No. ( )	*License No.: 577621
*Type of Work: Fire Sprinklers	Registration No.: 1000002305
11. *Company Name: RJR Plumbing	
*Location of Business: Stockton	Email:
Ph. No. ( )	*License No.: 1007603
*Type of Work: Plumbing	Registration No.: 1000040708
12. *Company Name: TopNotch Mechanical	
*Location of Business: Roseville	Email:
Ph. No. ( )	*License No.: 972009
*Type of Work: HVAC	Registration No.: 1000017371
13. *Company Name: TBK Electric	
*Location of Business: Sacramento	Email:
Ph. No. ( )	*License No.: 896645
*Type of Work: Electrical	Registration No.: 1000002018

* Required at time of bid

Subcontractors Information

14. *Company Name: 4 C's	
*Location of Business: Fresno	Email:
Ph. No. ( )	*License No.: 908294
*Type of Work: Break Metal Alluminum Closure	Registration No.: 1000002824
15. *Company Name: Simplex Grinnell	
*Location of Business: Sacramento	Email:
Ph. No. ( )	*License No.: 986047
*Type of Work: Fire Alarm	Registration No.: 1000000576
16. *Company Name: New West Partitions	
*Location of Business: Sacramento	Email:
Ph. No. ( )	*License No.: 723392
*Type of Work: Metal Framing & Drywall	Registration No.: 1000004084
17. *Company Name:	
*Location of Business:	Email:
Ph. No. ( )	*License No.:
*Type of Work:	Registration No.:
18. *Company Name:	
*Location of Business:	Email:
Ph. No. ( )	*License No.:
*Type of Work:	Registration No.:
19. *Company Name:	
*Location of Business:	Email:
Ph. No. ( )	*License No.:
*Type of Work:	Registration No.:

*** Required at time of bid**

Subcontractors Information

20. ***Company Name:**

***Location of Business:**	Email:
Ph. No. ( )	***License No.:**
***Type of Work:**	Registration No.:

21. ***Company Name:**

***Location of Business:**	Email:
Ph. No. ( )	***License No.:**
***Type of Work:**	Registration No.:

22. ***Company Name:**

***Location of Business:**	Email:
Ph. No. ( )	***License No.:**
***Type of Work:**	Registration No.:

23. ***Company Name:**

***Location of Business:**	Email:
Ph. No. ( )	***License No.:**
***Type of Work:**	Registration No.:

24. ***Company Name:**

***Location of Business:**	Email:
Ph. No. ( )	***License No.:**
***Type of Work:**	Registration No.:

25. ***Company Name:**

***Location of Business:**	Email:
Ph. No. ( )	***License No.:**
***Type of Work:**	Registration No.:

Legal Name	Registration Number	County	City	Registration Date	Expiration Date
BMY CONSTRUCTION GROUP INC.	1000000147	FRESNO	FRESNO	05/17/2016	06/30/2017

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

Consumer Affairs

License Number **686178** Entity CORP

Business Name B M Y CONSTRUCTION GROUP INC

Classification(s) A B C-8

Expiration Date 01/31/2017 www.cslb.ca.gov

BMY CONSTRUCTION GROUP INC.
BOWER ◆ MITCHELL ◆ YEMOTO

Corporate Resolution Authorizing Signature of Documents

The Board of Directors of BMY Construction Group, Inc. hereby resolves to authorize Steve Mitchell and Eric Bower to sign corporate documents, insurance documents, bonds, bid documents, and contract documents.

BMY Construction Group, Inc.

By _____
Eric Bower, President

By _____
Steve Mitchell, Vice President

Dated: October 30, 2015

5485 East Olive Avenue ▪ Fresno, CA 93727 ▪ Phone (559) 243-4200 ▪ Fax (559) 222-2380
CSL#686178

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

Bobo Construction, Inc	9722 Kent St, Elk Grove, CA 95624
FIRM	ADDRESS
Chris Baker	Manager
SIGNED BY	TITLE OR AGENCY
tbaker@boboconstructioninc.com	
E-MAIL ADDRESS	

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

BID DOCUMENTS

A) **BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

COMPANY NAME: Bobo Construction, Inc

CONTACT NAME: Chris Baker

ADDRESS: 9722 Kent St, Elk Grove, CA 95624

TELEPHONE NUMBER: (916) 383-7777

EMAIL: tbaker@boboconstructioninc.com

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
		$ — /ea.	$ —
		$ — /ea.	$ —

Subtotal $ —

Sales Tax (9%) $ —

GRAND TOTAL $ 1,622,000.00

The bidder warranties this equipment for a minimum period of TBD years.

Complete delivery will be made within 240 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

Bobo Construction, Inc	9722 Kent St, Elk Grove, CA 95624
FIRM	ADDRESS
Chris Baker	Manager
SIGNED BY	TITLE OR AGENCY
8/18/16	(916) 383 - 7777
DATE	TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS

B) PUR 15-033

***C)* AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA,_____)ss.
County of Sacramento **)**
(insert)

Chris Baker being first duly sworn, deposes and says: That they are the Manager of Bobo Construction, Inc a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this 18th day of August, 20 16
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____who is the party making the foregoing bid; that the other partner, or partners, are _____that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

CALIFORNIA JURAT WITH AFFIANT STATEMENT
GOVERNMENT CODE § 8202

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

State of California

County of Sacramento

Subscribed and sworn to (or affirmed) before me on this 16 day of August, 2016,
Date *Month* *Year*
by

(1) Chris Baker

(2) ----------

Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

ARLENE CAROL YOUNG
Commission # 2031062
Notary Public - California
Sacramento County
My Comm. Expires Jul 24, 2017

Place Notary Seal Above

Signature Arlene Carol Young
Signature of Notary Public

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non Collusion Affidavit

Document Date: 08/18/2016 Number of Pages: 1

Signer(s) Other Than Named Above: ----------

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

List of Subcontractors

Bobo Construction Inc

License #183537
DIR #1000000906

Work Performed	Name	City	DIR #
Casework	Fremont	Klamath Falls	1000000846
Windows	Mountain Valley	Valley Springs	1000006847
Drywall	Delta City	Citris Heights	1000005819
Acoustical	Arrow	Hayward	1000001883
Flooring	AAF	Concord	1000015014
Paint	Herlache	Roseville	1000002225
Plumbing	RJR	Stockton	1000040708
HVAC	Top notch	Roseville	1000017371
Electrical	TDK	Sacramento	1000002018
Fire alarm	Simplex	Sacramento	1000000576
Demo	Janus	Concord	1000000894
Fire sprinklers	Cosco	Rockland	1000002305
Casework	Sierra	Modesto	1000000071

List of Subcontractors

Bobo Construction Inc

License #183537
DIR #1000000906

Work Performed	Name	City	DIR #

DIR

Legal Name	Registration Number	County	City	Registration Date	Expiration Date
BOBO CONSTRUCTION INC	1000000906	SACRAMENTO	SACRAMENTO	05/02/2016	06/30/2017

Bond No. n/a

Fidelity and Deposit Company

HOME OFFICE OF MARYLAND *BALTIMORE, MD. 21203*

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, BOBO CONSTRUCTION, INC.

as Principal, (hereinafter called the "Principal"), and the Fidelity and Deposit Company of Maryland, of Baltimore, Maryland, a corporation duly organized under the laws of the State of Maryland, as Surety, (hereinafter called the "Surety"), are held and firmly bound unto CITY OF STOCKTON

as Obligee, (hereinafter called the "Obligee"), in the sum **TEN PERCENT (10%) OF AMOUNT BID** Dollars ($ **10%**), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for City of Stockton City Hall Relocation 1st & 7th Floors Tenant Improvements (PUR 15-033)

NOW, THEREFORE, if the said contract be timely awarded to the Principal and the Principal shall, within such time as may be specified, enter into the contract in writing, and give bond, if bond is required, with Surety acceptable to the Obligee for the faithful performance of the said contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 15th day of August A.D., ~~19~~ 2016.

Witness

BOBO CONSTRUCTION, INC. (SEAL)
Principal

Title

FIDELITY AND DEPOSIT COMPANY OF MARYLAND
Surety

Witness

By Karen Amin, Attorney-in-Fact (SEAL)
Title

C325(HI)—SM.

FIDELITY AND DEPOSIT COMPANY OF MARYLAND

HOME OFFICE: BALTIMORE, MD. 21203

BID BOND

No. n/a $ **10%**

ON BEHALF OF

BOBO CONSTRUCTION, INC.

TO

CITY OF STOCKTON

PLEASE READ YOUR BOND

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin)

On August 15, 2016 before me, Jennifer Loper, Notary Public
(insert name and title of the officer)

personally appeared Karen Amin,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Jennifer Loper (Seal)

TCB2 JENNIFER LOPER TCB2
COMM. #2005351
NOTARY PUBLIC - CALIFORNIA
SAN JOAQUIN COUNTY
My Commission Expires Jan 27, 2017

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **MICHAEL BOND, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Daniel M. CONNOLLY, David SCHNAPP, Karen AMIN and Jennifer LOPER, all of Lodi, California, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 21st day of April, A.D. 2016.

ATTEST:

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: _____

Secretary
Eric D. Barnes

_____

Vice President
Michael Bond

State of Maryland
County of Baltimore

On this 21st day of April, A.D. 2016, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **MICHAEL BOND, Vice President, and ERIC D. BARNES, Secretary,** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

_____

Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

Diede Construction, Inc.
P. O. Box 1007
Woodbridge, CA 95258
Ph: (209) 369-8255
Fx: (209) 368-0600
CA License No. 632667
DIR No. 1000002716

SEALED BID PROPOSAL FOR:

CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)

DELIVER TO:

City of Stockton, Office of the City Clerk
First Floor, City Hall, 425 North El Dorado St
Stockton, CA 952021997

BID DUE: **Thursday, August 18, 2016** **@** **2:00 PM**

BIDDER'S CHECKLIST
CITY OF STOCKTON / PURCHASING DIVISION

Did You:

*___ Complete the following bid documents (FROM THIS PACKET ONLY SUBMIT PAGES 15 to 18, along with any other requirements):

- *___ Sign and notarize by jurat certificate the "Non-Collusion Affidavit" form. An "All-Purpose Acknowledgment" form will not be sufficient.
- *___ Complete and sign the "Bid to be Submitted" form.
- *___ Sign the "Bidder's Agreement" form. **Include (with bid) name and e-mail address for City contact, if different from signatoree**
- *___ Proof of registration of self and any subcontractors with the State of California Department of Industrial Relations
- *___ Recheck your math on each item extension and total column. Do not superimpose numerals on your bid forms. If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid.

*___ Submit one (1) ORIGINAL of all bid documents. Additionally, submit one (1) CD with an electronic version of the bid documents.

*___ Review all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

*___ Deliver sealed bid to City Hall, City Clerk's Office (1st floor), 425 North El Dorado Street, Stockton, CA 95202, before **August 18, 2016, at 2:00 p.m.** Sealed bid shall be marked "Bid" and indicate project name, number, and bid opening date.
Please note that some overnight delivery services do not deliver directly to the City Clerk's Office. This could result in the bid arriving in the City Clerk's Office after the bid opening deadline and therefore not being accepted. NOTE: The Stockton City Clerk's office is closed from 12 noon to 1 p.m. for lunch.

A) CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS
B) (PUR 15-033)
C) AUGUST 18, 2016

CONTACT INFORMATION:

Information on Technical Data	Information on Bid Process/Clarification
Corey Chatfield, Economic Development (209) 937-8059 e-mail: Corey.Chatfield@stocktonca.gov	Alan Montanelli, Buyer (209) 937-8350 e-mail: Alan.Montaneli@stocktonca.gov

*If not completed as required, your proposal may be voided.
***DISCLAIMER**: The City does not assume any liability or responsibility for errors/omissions in any document transmitted electronically.
*THIS FORM IS FOR YOUR INFORMATION ONLY AND DOES NOT NEED TO BE SUBMITTED WITH YOUR PROPOSAL.

BID DOCUMENTS

A) **BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

COMPANY NAME: Diede Construction, Inc.

CONTACT NAME: Steven L. Diede, President

ADDRESS: P.O. Box 1007, Woodridge, CA 95258

12393 N. Highway 99, Lodi, CA 95240

TELEPHONE NUMBER: 209-369-8255

EMAIL: estimating@diedeconstruction.com

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
		$_____ /ea.	$_____
		$_____ /ea.	$_____
		Subtotal	$_____
		Sales Tax (9%)	$_____
		GRAND TOTAL	$ $1,490,000.00

The bidder warranties this equipment for a minimum period of 1 years.

Complete delivery will be made within 240 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

Diede Construction, Inc.	P.O. Box 1007, Woodbridge, CA 95258
FIRM	ADDRESS
	Steven L. Diede, President
SIGNED BY	TITLE OR AGENCY
August 17, 2016	209 369-8255
DATE	( ) TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) **CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash + ACKNOWLEDGING 1 ADDENDA

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

Diede Construction, Inc.	P.O. Box 1007, Woodbridge, CA 95258
FIRM	ADDRESS
	Steven L. Diede, President
SIGNED BY	TITLE OR AGENCY
estimating@diedeconstruction.com	
E-MAIL ADDRESS	

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA, _____ **)ss.**

County of _____ **)**

(insert)

_____ being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____

(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA, _____ **)ss.**

County of San Joaquin **)**

Steven L. Diede **(insert)**

_____ being first duly sworn, deposes and says: That they are the President of Diede Construction, Inc. a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____

(Signature Corporation Bidder) Steven L. Diede, President

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

PLEASE SEE ATTACHED

Seal _____

Signature _____

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA, _____ **)ss.**

County of _____ **)**

(insert)

_____,

each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____ who is the party making the foregoing bid; that the other partner, or partners, are _____ that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____

(Signature)

_____

(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Joaquin

Subscribed and sworn to (or affirmed) before me on this 17th day of August, 20 16, by Steven L. Diede,
proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

L. GREGORICH
Commission # 2098738
Notary Public - California
San Joaquin County
My Comm. Expires Feb 18, 2019

(Seal)

Signature

REQUEST FOR SEALED BID
CITY HALL RELOCATION 1st & 7TH FLOOR TENANT IMPROVEMENTS FOR THE CITY OF STOCKTON
(PUR 15-033)

Diede Construction, Inc. **Subcontractor List**

In compliance with Senate Bill 854 and the California Labor Code, all Bidders shall include with their Bid proof of registration from the Department of Industrial Relations (DIR) that includes the contractor's Legal Name, Registration Number, License Type/Number, Registration Date and Expiration Date, for every contractor and subcontractor, regardless of tier.

Contractor Name/Location: SANUS corp. / concord — Demolition 4

DIR Registration No./ Reg. Date and Exp. Date: SD/mm 1000000894 — 4/14/16 - 6/30/17

License Type/Number: 572682 — A, B, C2, C21, C22

Contractor Name/Location: _____

DIR Registration No./ Reg. Date and Exp. Date: _____

License Type/Number: _____

SD/mm

Contractor Name/Location: Sierra cabs. millwork & millwork Inc. Stockton — Casework 8

DIR Registration No./ Reg. Date and Exp. Date: 1000013082 — 6/22/16 - 6/30/17

License Type/Number: 771541 C6

SD/mm

Contractor Name/Location: Fremont millwork co. Kl Amma Falls Ore — Casework

DIR Registration No./ Reg. Date and Exp. Date: 1000000246 — 5-23-16 - 6/30/17

License Type/Number: 249756 C6,

Contractor Name/Location: Sacramento Building Products (most Sacramento) Insulation 9

DIR Registration No./ Reg. Date and Exp. Date: 1000005805 6/29/16 - 6/30/17

License Type/Number: 202026 C2, C33, C35, "B"

Contractor Name/Location: Sierra Cabinet & Millwork Inc. Stockton Casework

DIR Registration No./ Reg. Date and Exp. Date: 1000013082 6/27/16 - 6/30/17

License Type/Number: 771741 C6

Contractor Name/Location: Progressive Glass Inc. Stockton Glazing 12 $60/mm

DIR Registration No./ Reg. Date and Exp. Date: 1000010716 6/29/16 - 6/30/17

License Type/Number: 819683 C17

Contractor Name/Location: Mountain Valley Glass Valley Springs Glazing

DIR Registration No./ Reg. Date and Exp. Date: 1000006847 6/7/16 - 6/30/17

License Type/Number: 887953 C17

Contractor Name/Location: Delta City Drywall Citrus Heights Drywall 13 $80/mm

DIR Registration No./ Reg. Date and Exp. Date: 1000005918 6/2/16 - 6/30/17

License Type/Number: 853393 C9

Contractor Name/Location: ~~Bruce K Hall Const Inc.~~ 50/mm Fresno Drywall 13

DIR Registration No./ Reg. Date and Exp. Date: 1000002687 6/30/16 - 6/30/17

License Type/Number: 834040 C9, "B"

Contractor Name/Location: ~~Fite~~ 50/mm 14

DIR Registration No./ Reg. Date and Exp. Date:

License Type/Number:

Contractor Name/Location: R6 Interiors North Highlands Drywall

DIR Registration No./ Reg. Date and Exp. Date: 1000006425 5/3/16 - 6/30/17

License Type/Number: 836904 C9, C2, C33.

Contractor Name/Location: Arrow ~~Acoustical Inc.~~ Acoustics Inc. 50/mm Hayward Acoustical 15

DIR Registration No./ Reg. Date and Exp. Date: 1000001883 5/13/16 - 6/30/17

License Type/Number: 260647 C2, C61/D12

Contractor Name/Location:

DIR Registration No./ Reg. Date and Exp. Date:

License Type/Number:

Contractor Name/Location: CCF Inc. Sacramento Flooring 16

DIR Registration No./ Reg. Date and Exp. Date: 1000002274 6/1/16 - 6/30/17

License Type/Number: 446458 "B", C8, C15, C54,

Contractor Name/Location: All About Floors Inc. Concord Flooring

DIR Registration No./ Reg. Date and Exp. Date: 1000015014 6/30/16 – 6/30/17

License Type/Number: 720907 C15

Contractor Name/Location: Herlocker & Sons Painting Inc. Roseville Painting 17

DIR Registration No./ Reg. Date and Exp. Date: 1000002225 6/13/16 – 6/30/17

License Type/Number: 472047 C33,

Contractor Name/Location: _____

DIR Registration No./ Reg. Date and Exp. Date: _____

License Type/Number: _____

Contractor Name/Location: _____

DIR Registration No./ Reg. Date and Exp. Date: _____

License Type/Number: _____

Contractor Name/Location RSR Plumbing Inc. Stockton Plumbing 20

DIR Registration No./ Reg. Date and Exp. Date 1000040708 7/24/16 - 6/30/17

License Type/Number 1007603 C36

Contractor Name/Location

DIR Registration No./ Reg. Date and Exp. Date

License Type/Number

Contractor Name/Location Top Notch Mechanical Inc. Roseville HVAC 21

DIR Registration No./ Reg. Date and Exp. Date 1000017371 6/30/16 - 6/30/17

License Type/Number 972009 C20

Contractor Name/Location

DIR Registration No./ Reg. Date and Exp. Date

License Type/Number

Contractor Name/Location TBK Electric Sacramento Electrical 22

DIR Registration No./ Reg. Date and Exp. Date 1000002018 5/19/16 - 6/30/17

License Type/Number 896645 C10, C7

Contractor Name/Location — COSCO Fire Protection Rocklin Fire Sprinkler 23

DIR Registration No./ Reg. Date and Exp. Date — 1000002305 6/8/16 - 6/30/17

License Type/Number — 577621 C10, C16

Contractor Name/Location

DIR Registration No./ Reg. Date and Exp. Date

License Type/Number

Contractor Name/Location — TYCO Simplex Grinnell Sacramento Fire Alarm 25

DIR Registration No./ Reg. Date and Exp. Date — 1000000576 5/19/16 - 6/30/17

License Type/Number — 986047 C10, C16

Contractor Name/Location

DIR Registration No./ Reg. Date and Exp. Date

License Type/Number

Contractor Name/Location

DIR Registration No./ Reg. Date and Exp. Date

License Type/Number

STATE OF CALIFORNIA

Contractors State License Board

Pursuant to Chapter 9 of Division 3 of the Business and Professions Code
and the Rules and Regulations of the Contractors State License Board,
the Registrar of Contractors does hereby issue this license to:

DIEDE CONSTRUCTION INC

to engage in the business or act in the capacity of a contractor
in the following classification(s):

A - GENERAL ENGINEERING CONTRACTOR
B - GENERAL BUILDING CONTRACTOR
C-2 - INSULATION AND ACOUSTICAL
C-8 - CONCRETE

Witness my hand and seal this day,

September 23, 2008

Issued December 4, 1991

CERTIFIED COPY

This license is the property of the Registrar of Contractors, is not transferrable, and shall be returned to the Registrar upon demand when suspended, revoked, or invalidated for any reason. It becomes void if not renewed.

Stephen P. Sands
Registrar of Contractors

632667
License Number

AUDIT NO: 452108

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

License Number 632667 Entity CORP

Business Name DIEDE CONSTRUCTION INC

Classification(s) A B C-2 C-8 C15 C39 ASB HAZ
C61/D28 C27

Expiration Date 12/31/2017 www.cslb.ca.gov

Legal Name	Registration Number	County	City	Registration Date	Expiration Date
DIEDE CONSTRUCTION INC.	1000002716	SAN JOAQUIN	WOODBRIDGE	06/08/2016	06/30/2017

Nº 6516

STATE OF CALIFORNIA

DEPARTMENT OF INSURANCE

SAN FRANCISCO

Amended

Certificate of Authority

THIS IS TO CERTIFY, *That, pursuant to the Insurance Code of the State of California,*

Travelers Casualty and Surety Company of America

of Hartford, Connecticut *, organized under the laws of* Connecticut *, subject to its Articles of Incorporation or other fundamental organizational documents, is hereby authorized to transact within this State, subject to all provisions of this Certificate, the following classes of insurance:* Fire, Marine, Surety, Disability, Plate Glass, Liability, Workers' Compensation, Common Carrier Liability, Boiler and Machinery, Burglary, Credit, Sprinkler, Team and Vehicle, Automobile, Aircraft, and Miscellaneous *as such classes are now or may hereafter be defined in the Insurance Laws of the State of California.*

THIS CERTIFICATE *is expressly conditioned upon the holder hereof now and hereafter being in full compliance with all, and not in violation of any, of the applicable laws and lawful requirements made under authority of the laws of the State of California as long as such laws or requirements are in effect and applicable, and as such laws and requirements now are, or may hereafter be changed or amended.*

IN WITNESS WHEREOF, *effective as of the* 1st *day of* July, 1997, *I have hereunto set my hand and caused my official seal to be affixed this* 16th *day of* June, 1997.

Chuck Quackenbush
Insurance Commissioner

By Victoria S. Sidbury
Deputy

NOTICE: Qualification with the Secretary of State must be accomplished as required by the California Corporations Code promptly after issuance of this Certificate of Authority. Failure to do so will be a violation of Ins. Code Sec. 701 and will be grounds for revoking this Certificate of Authority pursuant to the covenants made in the application therefor and the conditions contained herein.

Diede Construction, inc.

COMMERCIAL · INDUSTRIAL · DESIGN · BUILD

P.O. Box 1007 · Woodbridge, CA 95258

Lodi (209) 369-8255 · Stockton (209) 464-3352 · Fax (209) 368-0600

CA License No. 632667
NV License No. 0042319

ABC Associated Builders and Contractors, Inc.
Accredited Quality Contractor

Diede Construction, Inc.

Diede Construction, Inc. (DDC)'s CA Contractor's License Number is 632667, and it expires on December 31, 2017.

Diede Construction, Inc. (DDC)'s DIR Registration No. is 1000002716.

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

Diede Construction, Inc.

Steven L. Diede, President

Authorization to Make Corrections

The DDC representative delivering this bid is authorized to make changes to the bid documents on behalf of DDC and place authorized initials at that change to the bid documents.

Diede Construction, Inc.

Steven L. Diede, President

Diede Construction, inc.

COMMERCIAL · INDUSTRIAL · DESIGN · BUILD

P.O. Box 1007 · Woodbridge, CA 95258

Lodi (209) 369-8255 · Stockton (209) 464-3352 · Fax (209) 368-0600

CA License No. 632667
NV License No. 0042319

ABC Associated Builders and Contractors, Inc.
Accredited Quality Contractor

Corporate Resolution
Diede Construction, Inc.

Officers Authorized to Contract

To authorize the officers to contract and obligate the corporation, in the ordinary course of business, the following resolution was, upon motion duly made, seconded and carried, adopted:

RESOLVED: That the following officers or any of them acting alone is, and the same hereby are, authorized to sign contracts, bind the corporation, submit proposals and bids and otherwise enter into obligations for and on behalf of the corporation:

President – Steven L. Diede
Vice-President – Wayne J. Diede

I, Lillian Diede, Secretary / Treasurer of the Board of Directors of Diede Construction, Inc., do hereby declare and attest that the above resolution of Diede Construction, Inc. is true and correct and was passed unanimously by the Board of Directors of Diede Construction, Inc. at its meeting on October 28, 1991.

Lillian Diede
Secretary / Treasurer

BID DOCUMENTS

A) BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS

B) PUR 15-033

C) AUGUST 18, 2016

COMPANY NAME: F&H Construction

CONTACT NAME: Stephen Seibly, Secretary-Treasurer

ADDRESS: 1115 E. Lockeford Street

Lodi, CA 95240

TELEPHONE NUMBER: 209-931-3738

EMAIL: sseibly@f-hconst.com

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
		$_____/ea.	$_____
		$_____/ea.	$_____
		Subtotal	$_____
		Sales Tax (9%)	$_____
		GRAND TOTAL	$1,575,000

The bidder warranties this equipment for a minimum period of 1 years.

Complete delivery will be made within 240 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

F&H Construction
FIRM

1115 E. Lockeford Street, Lodi, CA 95240
ADDRESS

Stephen Seibly
SIGNED BY Stephen Seibly

Secretary-Treasurer
TITLE OR AGENCY

August 18, 2016
DATE

(209) 931-3738
TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS

B) PUR 15-033

C) **AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

F&H Construction — FIRM

1115 E. Lockeford Street, Lodi, CA 95240 — ADDRESS

Stephen Seibly — SIGNED BY

Secretary-Treasurer — TITLE OR AGENCY

sseibly@f-hconst.com — E-MAIL ADDRESS

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 2 **Please see attached. **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA,_____)ss.
County of San Joaquin **)**
(insert)

Stephen Seibly being first duly sworn, deposes and says: That they are the Secretary-Treasurer of F&H Construction a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

Stephen Seibly
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____who is the party making the foregoing bid; that the other partner, or partners, are _____that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☑ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1 *Signature of Document Signer No. 2 (if any)*

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18 day of August, 2016,
Date *Month* *Year*
by
(1) Stephen Seibly
(and (2) ------),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

JEANETTE EVA FERRELL
Commission # 2050071
Notary Public - California
San Joaquin County
My Comm. Expires Nov 24, 2017

Signature _____
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non-collusion Affidavit for Corporation Bidder **Document Date:** August 18, 2016

Number of Pages: 2 **Signer(s) Other Than Named Above:** _____

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

F&H CONSTRUCTION
Spaces for life

CORPORATE ACKNOWLEDGEMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

As of this date, April 28, 2016, each of the officers of F&H Construction, being Charles Ferrell, Stephen Seibly, Harold Jones and Dan Blackburn, is hereby authorized to execute all contractual documents, as set to record by the Board of Directors of F&H Construction on April 28, 2016.

This resolution remains in force until revoked by this board.

F&H Construction

Charles Ferrell, President
F&H Construction

Stephen Seibly, Secretary/Treasurer
F&H Construction

Harold Jones, Chief Financial Officer
F&H Construction

Dan Blackburn, Division Manager
F&H Construction

State of California
County of San Joaquin

On April 28, 2016, before me, Linda Jean Schmitz, Notary Public, personally appeared Charles Ferrell, Stephen Seibly, Harold Jones and Dan Blackburn personally known to me, to be the persons whose name is subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacity, and that by their signatures on the instrument the persons or the entity upon behalf of which acted, executed the instrument.

Witness my hand official seal

Notary Public, State of California
County of San Joaquin
Expiration of Commission: May 13, 2019

LINDA JEAN SCHMITZ
Commission # 2110354
Notary Public - California
San Joaquin County
My Comm. Expires May 13, 2019

F&H CONSTRUCTION
Spaces for life

City of Stockton City Hall Relocation
1st & 7th Floors Tenant Improvements
PUR 15-033
August 18, 2016

List of Subcontractors

Portion of Work	Subcontractor	DIR Registration Number	License Number
Selective Demolition	Janus Corp.	1000000894	572682
~~Building Insulation~~ SS			
~~Flush Wood Doors~~ SS			
~~Door Hardware~~ SS			
~~Install Doors, Frames & Hardware~~ SS			
~~Aluminium Storefront, Glass & Glazing~~ SS	~~Progressive Glass Inc~~ SS No	~~1000010716~~ SS	~~819683~~ SS
Metal Studs & Gypsum Board	Delta City Drywall	1000005819	853303
Acoustical Panel Ceilings	~~Coffey Bldg Grp~~ SS Western Bldg Materials	~~1000007828~~ SS 1000003005	~~684479~~ SS 248608
~~Carpet Tiles, Resilient Floor & Wall Base~~ SS	~~Shelton Tile Flooring~~ SS	~~100005265~~ SS	~~277185~~ SS
Painting	Herlache & Sons Painting	1000002225	472047
Fire Sprinklers	COSCO Fire Protection	1000002305	577621
Plumbing	Summit Plumbing & Mechanical	1000002752	861170
HVAC	Advanced Mechanical Systems	1000002189	767349

F&H CONSTRUCTION
Spaces for life

City of Stockton City Hall Relocation
1st & 7th Floors Tenant Improvements
PUR 15-033
August 18, 2016

List of Subcontractors

Portion of Work	Subcontractor	DIR Registration Number	License Number
Electrical & Communications	TBK Electric	1000002018	896645
Fire Alarm Installation	Tyco ~~Simplex~~ Grinnell Security	1000005 76	986047
Architectural Woodwork	~~Fremont SS Millwork~~ Sierra Casework	1000000071 ~~1000000246 SS~~	802541 ~~249756 SS~~
Carpet Tiles Resilient Floor : Wall base	all about Floors	10000 15014	720907
Aluminum Storefront Glass, Glazing	Mountain Valley Glass	1000006847	887953

F&H CONSTRUCTION
Spaces for life

City of Stockton City Hall Relocation
1st & 7th Floors Tenant Improvements
PUR 15-033
August 18, 2016

List of Subcontractors

Portion of Work	Subcontractor	DIR Registration Number	License Number

CITY OF STOCKTON

REQUEST FOR SEALED BIDS
CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS FOR THE CITY OF STOCKTON, CALIFORNIA
(PUR 15-033)

Stockton All-America City 2004 1999

A MANDATORY JOB WALK WILL BE HELD ON JULY 27, 2016 AT 9:00 A.M. PROMPTLY IN THE LOBBY OF 400 E. MAIN, STOCKTON, CA

BIDS WILL BE RECEIVED UNTIL THE HOUR OF
2:00 O'CLOCK P.M., THURSDAY, AUGUST 18, 2016,
IN THE OFFICE OF THE CITY CLERK,
FIRST FLOOR, CITY HALL, 425 NORTH EL DORADO STREET,
STOCKTON, CALIFORNIA 95202-1997

NOTICE INVITING SEALED BIDS

NOTICE IS HEREBY GIVEN that sealed bids are invited by the City of Stockton, California for specifications for **CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)** in strict accordance with the specifications.

The City of Stockton has begun the process of relocating City offices to 400 E. Main St., Stockton, CA. In preparation for this move, the City is inviting bids for the construction of an interior remodel on the first and seventh floors in accordance with the plans and specifications provided for this project.

The bid specifications and forms can be obtained from the City of Stockton's website at www.stocktongov.com/bidflash and must be delivered to the Office of the City Clerk, City Hall, 425 North El Dorado Street, Stockton, California, up to but not later than **2:00 p.m., on Thursday, AUGUST 18, 2016.**

A mandatory job walk will be held on July 27, 2016 at 9:00 a.m. promptly in the lobby of 400 E. Main, Stockton, CA. Interested bidders arriving at 9:01 a.m. or later will not be admitted. Failure to attend will result in your bid being rejected.

The City reserves the right to reject any and/or all bids received.

Information on Technical Data
Corey Chatfield, Economic Development
(209) 937-8059
e-mail: Corey.Chatfield@stocktonca.gov

Information on Bid Process/Clarification
Alan Montanelli, Buyer
(209) 937-8350
e-mail: Alan.Montanelli@stocktonca.gov

DISCLAIMER: The City does not assume any liability of responsibility for errors/omissions in any document transmitted electronically.

Dated: **July 21, 2016**

//s//BONNIE PAIGE
CITY CLERK OF THE CITY OF STOCKTON

BIDDER'S CHECKLIST
CITY OF STOCKTON / PURCHASING DIVISION

Did You:

*__X__ Complete the following bid documents (FROM THIS PACKET ONLY SUBMIT PAGES 15 to 18, along with any other requirements):

- *__X__ Sign and notarize by jurat certificate the "Non-Collusion Affidavit" form. An "All-Purpose Acknowledgment" form will not be sufficient.
- *__X__ Complete and sign the "Bid to be Submitted" form.
- *__X__ Sign the "Bidder's Agreement" form. **Include (with bid) name and e-mail address for City contact, if different from signatoree**
- *__X__ Proof of registration of self and any subcontractors with the State of California Department of Industrial Relations
- *__X__ Recheck your math on each item extension and total column. Do not superimpose numerals on your bid forms. If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid.

*__X__ Submit one (1) ORIGINAL of all bid documents. Additionally, submit one (1) CD with an electronic version of the bid documents.

*__X__ Review all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

*__X__ Deliver sealed bid to City Hall, City Clerk's Office (1st floor), 425 North El Dorado Street, Stockton, CA 95202, before **August 18, 2016, at 2:00 p.m.** Sealed bid shall be marked "Bid" and indicate project name, number, and bid opening date.
Please note that some overnight delivery services do not deliver directly to the City Clerk's Office. This could result in the bid arriving in the City Clerk's Office after the bid opening deadline and therefore not being accepted. NOTE: The Stockton City Clerk's office is closed from 12 noon to 1 p.m. for lunch.

A) CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS
B) (PUR 15-033)
C) AUGUST 18, 2016

CONTACT INFORMATION:

Information on Technical Data	Information on Bid Process/Clarification
Corey Chatfield, Economic Development (209) 937-8059 e-mail: Corey.Chatfield@stocktonca.gov	Alan Montanelli, Buyer (209) 937-8350 e-mail: Alan.Montaneli@stocktonca.gov

*If not completed as required, your proposal may be voided.
***DISCLAIMER**: The City does not assume any liability or responsibility for errors/omissions in any document transmitted electronically.
*THIS FORM IS FOR YOUR INFORMATION ONLY AND DOES NOT NEED TO BE SUBMITTED WITH YOUR PROPOSAL.

BID DOCUMENTS

A) **BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

COMPANY NAME: Haggerty Construction, Inc.

CONTACT NAME: Dominique Fryer

ADDRESS: 2747 Wigwam Drive, Stockton, CA 95205

TELEPHONE NUMBER: (209) 475-9898

EMAIL: dominique@haggertyconstruction.net

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
1	Plans Dated 7/14/16 - Specs Dated 7/21/16 - Addendum #1	$ 1 /ea.	$ 1,343,000.00
		$ N/A /ea.	$ N/A
		Subtotal	$ 1,343,000.0
		Sales Tax (9%)	$ N/A
		GRAND TOTAL	$ 1,343,000.0

The bidder warranties this equipment for a minimum period of 3 years.

Complete delivery will be made within 105 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

Haggerty Construction, Inc.
FIRM

2474 Wigwam Drive, Stockton, CA 95205
ADDRESS

SIGNED BY

Estimator
TITLE OR AGENCY

08/18/16
DATE

(209) 475-9898
TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS

B) PUR 15-033

C) AUGUST 18, 2016

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

Haggerty Construction, Inc. — FIRM

2474 Wigwam Drive, Stockton, CA 95205 — ADDRESS

Estimator — TITLE OR AGENCY

SIGNED BY

dominique@haggertyconstruction.net
E-MAIL ADDRESS

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

HAGGERTY CONSTRUCTION, INC. being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

* See attached sheet

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____ being first duly sworn, deposes and says: That they are the _____ of _____ a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

* See Attached Sheet

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____ who is the party making the foregoing bid; that the other partner, or partners, are _____ that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

* See Attached Sheet

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1 *Signature of Document Signer No. 2 (if any)*

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18th *Date* day of August *Month*, 20 16 *Year*,
by
(1) Dominique Fryer
(and (2) —),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

JENNIFER MORSE
Commission # 2105731
Notary Public - California
San Joaquin County
My Comm. Expires Apr 4, 2019

Signature J Morse
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non-Collusion Affidavit Document Date: —

Number of Pages: 1 Signer(s) Other Than Named Above: —

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18th day of August, 2016,
Date *Month* *Year*
by
(1) Dominique Fryer
(and (2) _____),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person~~(s)~~ who appeared before me.

Signature _____
Signature of Notary Public

JENNIFER MORSE
Commission # 2105731
Notary Public - California
San Joaquin County
My Comm. Expires Apr 4, 2019

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non-Collusion Affidavit Document Date: _____

Number of Pages: 1 Signer(s) Other Than Named Above: _____

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

1
2
3
4
5
6

Signature of Document Signer No. 1 *Signature of Document Signer No. 2 (if any)*

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18th day of August, 2016,
Date *Month* *Year*
by
(1) Dominique Fryer
(and (2) _____),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person~~(s)~~ who appeared before me.

JENNIFER MORSE
Commission # 2105731
Notary Public - California
San Joaquin County
My Comm. Expires Apr 4, 2019

Signature _____
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non-Collusion Affidavit **Document Date:** _____

Number of Pages: 1 **Signer(s) Other Than Named Above:** _____

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

HAGGERTY
CONSTRUCTION, INC

2474 Wigwam Drive, Suite A
Stockton, CA 95205
(209) 475-9898 p
(209) 451-0011 f
haggertyconstruction.net
info@haggertyconstruction.net
Lic. #944274

Thursday, August 18, 2016

Proof of DIR Registration

To whom it may concern;

Per question #1 on the Questions and Answers form on the City Hall Phase 2 TI project for the City of Stockton, we are verifying that Haggerty Construction, Inc. as well as all proposed subcontractors are currently registered and up to date with the Department of Industrial Relations. We would be happy to provide further proof upon request.

Kind regards,

Dominique Fryer

Estimator
The Team@ Haggerty Construction, Inc.

Name of Contractor Marco Construction Group Inc

DESIGNATION OF SUBCONTRACTORS

(to be submitted with bid)

Listed hereinafter is the name and address of each subcontractor who will be employed and the kind of work which each will perform if the contract is awarded to the aforesigned. I understand that under Public Contract Code Section 4100 through 4113* (see note below) I must here clearly set forth the name and address of each subcontractor who will perform work or labor or render service to me in or about the construction of the work in an amount in excess of one-half of one per cent (1/2 of 1%) of my total proposal and that as to any work in which I fail to do so, I agree to perform that portion myself or be subject to penalty under the act.

Note: In case more than one subcontractor is named for the same kind of work, i.e. installation, state the portion that each will perform. **Give Contractors license number and DIR Registration number of each subcontractor.** Vendors or suppliers of materials only, need not be listed.

If further space is required for the list of proposed subcontractors, additional sheets showing the required information, as indicated below, shall be attached hereto and made a part of the Proposal.

KIND OF WORK	SUBCONTRACTOR NAME AND LOCATION		DIR REGISTRATION #	LICENSE #
Demo	Hawley	Visalia	0000001104	900933
Metal/Frame/Drywall	Bruce Hall	Fresno	0000002687	834040
Casework	Service	Modesto	0071	802541
~~Insulation~~ II				
Storefront	Mountain Valley	Valley Spring	6847	887953
Glazing	Mountain Valley	Valley Spring	6847	887953
II ~~Ceramic~~ Tile				
Acoustic Ceiling	Arrow	Hayward	~~1883~~ 1883	260647
Resilient Flooring	AAF	Concord	15014	720907

NOTE: The above listing requirement will for purposes of this proposal be construed in accordance with the provisions of the Subletting and Subcontracting Fair Practices Act ("The Act") as set forth in Government Code Sections 4100 through 4113. Also, for purposes of this proposal and interpretation of The Act, a vendor will be considered to be a prime contractor regardless of whether such vendor is or is not a licensed contractor.

Central California Builders Exchange

Name of Contractor Marko Construction Group Inc.

DESIGNATION OF SUBCONTRACTORS

(to be submitted with bid)

Listed hereinafter is the name and address of each subcontractor who will be employed and the kind of work which each will perform if the contract is awarded to the aforesigned. I understand that under Public Contract Code Section 4100 through 4113* (see note below) I must here clearly set forth the name and address of each subcontractor who will perform work or labor or render service to me in or about the construction of the work in an amount in excess of one-half of one per cent (1/2 of 1%) of my total proposal and that as to any work in which I fail to do so, I agree to perform that portion myself or be subject to penalty under the act.

Note: In case more than one subcontractor is named for the same kind of work, i.e. installation, state the portion that each will perform. **Give Contractors license number and DIR Registration number of each subcontractor.** Vendors or suppliers of materials only, need not be listed.

If further space is required for the list of proposed subcontractors, additional sheets showing the required information, as indicated below, shall be attached hereto and made a part of the Proposal.

KIND OF WORK	SUBCONTRACTOR NAME AND LOCATION		DIR REGISTRATION #	LICENSE #
Painting	Herdahe	Roseville	2225	472047
HVAC	AMS	Stockton	2189	262248
Electrical/LV	TBK	Sacramento	2018	896645
Fire Alarm	Simplex	Sacramento		
Fire Sprinklers	Costco	Rocklin	2305	577621
Plumbing	RJR	Stockton	40708	1007603

Central California Builders Exchange

NOTE: The above listing requirement will for purposes of this proposal be construed in accordance with the provisions of the Subletting and Subcontracting Fair Practices Act ("The Act") as set forth in Government Code Sections 4100 through 4113. Also, for purposes of this proposal and interpretation of The Act, a vendor will be considered to be a prime contractor regardless of whether such vendor is or is not a licensed contractor.

BID DOCUMENTS

A) **BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

COMPANY NAME: MARKO CONSTRUCTION GROUP, INC.

CONTACT NAME: JASON TENTY

ADDRESS: 3675 E. JENSEN AVE. FRESNO CA 93725

TELEPHONE NUMBER: (559) 222-7888

EMAIL: JTENTY@MARKOCONSTRUCTION.COM

Addendum #1 - acknowledged. 8/11/16

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
		$_____/ea.	$1,448,797.96
		$_____/ea.	$_____
		Subtotal	$1,448,797.96
		Sales Tax (9%)	$_____
		GRAND TOTAL	$1,448,797.96

The bidder warranties this equipment for a minimum period of 1 years.

Complete delivery will be made within 240 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

MARKO CONSTRUCTION GROUP, INC. — FIRM

3675 E. JENSEN AVE, FRESNO CA 93725 — ADDRESS

JASON TENTY — SIGNED BY

VICE PRESIDENT — TITLE OR AGENCY

AUGUST 18, 2016 — DATE

(559) 222-7888 — TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS

B) PUR 15-033

C) **AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

MARKO CONSTRUCTION GROUP, INC.	3675 E JENSEN AVE, FRESNO CA 93725
FIRM	ADDRESS
JASON TENTY	VICE PRESIDENT
SIGNED BY	TITLE OR AGENCY
JTENTY@MARKOCONSTRUCTION.COM	
E-MAIL ADDRESS	

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____ being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA, FRESNO)ss.
County of FRESNO)
(insert)

JASON TENTY being first duly sworn, deposes and says: That they are the VICE PRESIDENT of MARKO CONSTRUCTION GROUP, INC. a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this 08TH day of AUGUST, 20 16
by JASON TENTY, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

LALA LAYDA ROSS
Commission # 2143659
Notary Public - California
Fresno County
My Comm. Expires Feb 21, 2020

Seal _____

Signature _____

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____ who is the party making the foregoing bid; that the other partner, or partners, are _____ that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of FRESNO

Subscribed and sworn to (or affirmed) before me on this 08TH day of AUGUST, 20 16, by JASON TENTY

_____,

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

LALA LAIDA ROSS
Commission # 2143659
Notary Public - California
Fresno County
My Comm. Expires Feb 21, 2020

(Seal)

Signature Lala Ross

Public Works Contractor (PWC) Registration Search

This is a listing of current and active PWC registrations pursuant to Division 2, Part 7, Chapter 1 (commencing with section 1720 of the California Labor Code.)

Enter at least one search criteria to display active registered public works contractor(s) matching your selections.

Registration Year: Current Fiscal Year: 2016/17

PWC Registration Number: example: 1234567890

Contractor Legal Name: example: ABC COMPANY Contractor License Lookup

License Number: 831764

County: Select County

Search Reset

Export as: Excel | PDF

Search Results

One registered contractor found. **1**

Details	Legal Name	Registration Number	County	City	Registration Date	Expiration Date
View	MARKO CONSTRUCTION GROUP INC.	1000005466	FRESNO	FRESNO	06/28/2016	06/30/2017

v2.20160101

Copyright © 2015 State of California

Addendum 1

LDA Partners
DESIGNERS & ARCHITECTS

Project:	**City of Stockton – City Hall Relocation: City Clerk, City Manager, and City Attorney**
Project No:	**PUR 15-033**
Date:	**8/11/16**

From Architect:	LDA Partners, LLP 222 Central Court Stockton, CA 95204	Phone: 209.943.0405 E-mail: prosado@ldapartners.com

This Addendum forms a part of the Contract Documents and modifies the original issued July 21, 2016 as noted below. Acknowledge receipt of this addendum in submittal of bid.

The Following Changes, deletions, additions, and/or alterations in, on and to the Drawings and Specifications shall apply to proposals made for and to the execution of the various parts of the work affected thereby.

Careful Note of This Addendum shall be taken by all parties of interest so that the proper allowance may be made in all computations, estimates and contracts, and all trades affected shall be fully advised in the performance of the work which will be required of them.

In Case of Conflict between Drawings, Specifications, and this Addendum, this Addendum shall govern. This Addendum supersedes all previous Drawings, Specifications, and Instructions pertaining to these items.

I. DRAWING CHANGES, SHEETS & SKETCHES ISSUED WTH THIS ADDENDUM:
   a. G0.00: Revised General Notes.
   b. A9.00: Revised door information and hardware related to door 131A.
   c. E0.00: Revised note.
   d. E1.71: Revised Plan Notes and identify location of panel.

II. SPECIFICATIONS CHANGES:
   a. None

III. NEW DRAWINGS ISSUED WITH THIS ADDENDUM:
   a. None

IV. NEW SPECIFICATIONS ISSUED WITH THIS ADDENDUM:
   a. Provided spec section 21 00 00

V. SUBSTITUTIONS: Note that any subsequent costs from work or design changes from the proposed bidder substitution to the project shall be the responsibility of said bidder. All substitutions shall be completed to the satisfaction of the Owner.

a. None

VI. CLARIFICATION:

1. The fire sprinkler/protection system will be design/build. See added spec section 21 00 00.
2. Wall touchup locations are provided on PUR_15-033_City Hall wall touchup.pdf document.

End of Addendum 1

BID ABSTRACT

DEPT/PROJECT NO: **EDD / PUR 15-033** BID OPENING DATE: **AUGUST 18, 2016**

BID TITLE: ~~RFP~~ – CITY OF STOCKTON CITY HALL RELOCATION, 3RD & 4TH FLOORS TENANT IMPROVEMENTS

Bid

ESTIMATE: _____

For information regarding this project, please contact Corey Chatfield at (209) 937-8059 or Alan Montanelli at (209) 937-8350 the day following the bid opening.

No.	Bidder	Affirm Action	Bond	Check			
1.	F & H Construction						1,575,000.00
2.	Bldd						1,622,000.00
3.	BMY						1,434,725.00
4.	Diedl						1,490,000.00
5.	Haggerty Construction						1,343,000.00
6.	Marco Construction						1,448,797.96
7.	AUG 18 '16 PM 2:05						
8.							
9.							
10.							
11.							

ACCOUNT NUMBER (PUBLICATION): 301-1750-610.20-52 ACCOUNT NUMBER (STAFF): 000-0000-000.00-00

CONTRACT AWARDED TO: _____ COUNCIL MEETING DATE: _____

MOTION/RESO #: _____ UNSUCCESSFUL BONDS RETURNED: _____

CONTRACT #: _____ OB DOC #: _____ SUCCESSFUL BOND RETURNED: _____

Note: Affirmative Action required for federally funded projects only

	COMPANY NAME	CONTACT	BID AMOUNT
*	BMY Construction	Fresno	$1,434,725.00
*	BOBO Construction	Elk Grove	$1,622,000.00
	BZ Construction		
*	Diede Construction	Woodbridge 2%	$1,490,000.00
*	F&H Construction	Lodi 2%	$1,575,000.00
*	Haggerty Construction	Stockton 5%	$1,343,000.00
	K&R Surface IND		
*	Marko Construction	Fresno	$1,448,797.96
	MPA		
	Probuilders		
	Ridgeline		
	Sebastian Corp		
	Simile Construction		

CONTRACTOR SIGN-IN SHEET

DATE: 7/27/16

PROJECT: CITY HALL RELOCATION 1ST & 7TH FLOORS

PROJECT NO.: PUR 15-033

(PLEASE PRINT)

DUE DATE: ~~7/27/16~~ 8/18/16

Company Name	Contact Name (PRINT)	Phone#/Fax #	E-mail Address	Signature
Probuilders ✓	Ruben Romero	[redacted]	sebastian@sacprobuilders.com	
Ridgeline/ Brazil Construction Inc	Armando Consuelo		aconsuelo@ridgelineeng.com	
BZ CONSTRUCTION ✓	MIGUEL ZAMORA		MZAMORA@BZCONSTR.com	
BMY Const. ✓	Gurdeep Thatti		ESTIMATING@BMYINC.com	
F&H CONSTRUCTION ✓	BO CHAN		estimating@fh-coast.com	
DREW Const ✓	Jeff Gilbertson		estimating@drewconstruction.com	
BOBO CONST. ✓	SARAH WILKINS		tbaker@bobo CONSTRUCTION INC.com	
SIMILE CONSTRUCTION ✓	BRANDON MAUGHAN		estimating@simileconstruction.com	
K.R. SURFACE IND. ✓	RORY K. STEVENS		rstevens@krsurfaces.com	
Sebastian ✓	Jesus Huerta		PW@sebastiancorp.com	
Marko Construction ✓	Paul Gong		PKGONG@markoconstruction.com	
MPA ✓	Shawn Vessels		svessels@mpa-ee.com	
MPA ✓	Chris Wells		cwells@mpa-ee.com	
		Next page		

CONTRACTOR SIGN-IN SHEET

DATE: 8/01/16 **PROJECT:** City Hall Relocation 1st & 7th Floor **PROJECT NO.:** PUR 15-033

(PLEASE PRINT) **DUE DATE:** 8/18/16

Company Name	Contact Name (PRINT)	Phone#/Fax #	E-mail Address	Signature
Haggerty Const.	Matt Krzizan	[redacted]	matt@haggertyconstruction.net	
HAGGERTY CONST.	DOMINIQUE FRYER		DOMINIQUE@HAGGERTYCONSTRUCTION.NET	

REQUEST FOR SEALED BIDS
CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS FOR THE CITY OF STOCKTON, CALIFORNIA
(PUR 15-033)

POSTED 8/11/16

Please note that additional information and addenda can be found under the Plans, Attachments and Agendas section of Bidflash.

Regarding the "Bid To Be Submitted" form found on page 17: It is not required to use the quantity, unit cost or subtotal fields. The total bid amount can be placed in the "Grand Total" field.

POSTED 8/11/16

The following questions were received prior to the 8/04/16 deadline. City answers are in blue.

1. **From: Estimating <estimating@diedeconstruction.com>**
   Sent: Monday, July 25, 2016 10:26 AM
   To: Alan Montanelli
   Cc: Estimating; Brett Diede
   Subject: CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)

   Good Morning,
   In the specifications it reads that we are to send proof of our subs DIR registration with our bid? Please confirm that is correct.
   All parties involved must be registered with the Department of Industrial Relations at the time the bid is submitted.

2. **From: Gurdeep Jhutti [mailto:gjhutti@bmyinc.com]**
   Sent: Thursday, August 04, 2016 4:01 PM
   To: Alan Montanelli <Alan.Montanelli@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
   Cc: Estimating <Estimating@bmyinc.com>
   Subject: City of Stockton City Hall Relocation 1st & 7th Floors

   Good Afternoon,BMY Construction Group, Inc. is requesting the following clarifications, specifications and/or request for information:

   a) Is a bid bond required on this project?
      A bid bond is not required for this project.

b) Can you quantify the amount of drywall repairs, holes, cracks, minor touch up etc.?
Please see document PUR 15-033 City Hall wall touchup.pdf under the Plans, Attachments and Agendas section of Bidflash.

c) Under Exhibit "A" – insurance requirements, it states, "contractor shall procure and maintain for the duration of the contract, and for three (3) years thereafter." Please confirm the 3 year requirements.
Requirements under "Exhibit A" are mandatory

d) On sheet A2.11- 1st floor demolition ceiling plan – storage room 146 shows to demolish ceiling and legend shows to remain. Are the shaded areas to remain or demolish?
Ceilings to be demolished are noted on the plan.

e) Will the fire sprinkler heads need to be relocated for addition of new walls? They are not shown on the plans or mentioned in the specification.
The fire sprinkler/protection system will be design/build. See added spec section 21 00 00.

3. **From: Chris Bobo <cbobo@boboconstructioninc.com>**
Sent: Saturday, July 23, 2016 7:31 PM
To: Alan Montanelli
Subject: Re: New Project-City Hall Relocation Project 1st and 7th floor tenant improvements

What is the estimate?
As stated at the job walk, this project is projected to cost over $500,000.00. The City is not providing an engineer's estimate.

4. **From: Estimating <estimating@diedeconstruction.com>**
Sent: Thursday, July 28, 2016 10:09 AM
To: James Wong; Alan Montanelli
Cc: Jeff Gilbertson
Subject: RESPONSE REQUESTED - City of Stockton PLA requirement for public works projects of $1 million or more

Good Morning,
Diede Construction was planning to bid two City of Stockton projects coming up.
1. COS POLICE DEPARTMENT - CHIEF'S OFFICE TENANT IMPROVEMENTS PROJECT NO. PW1535

2. CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)

Please confirm whether or not these two projects now fall within that requirement.
(This answer only addresses CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS-PUR 15-033).

There is no "project labor agreement" (PLA) for this project. Contractor shall follow prevailing wage laws and review the Department of Industrial Relations requirements.

5. **From: Estimating <estimating@diedeconstruction.com>**
Sent: Friday, July 22, 2016 5:20 PM
To: Alan Montanelli
Cc: Brett Diede; Cathy Munoz
Subject: RFI for City of Stockton CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 5-033)

Two questions.

a) Specifications state that we are to turn in a CD with our Bid Proposal – please confirm
A CD or flash drive containing your bid proposal is required. However, the CD or flash drive can be submitted the next day by noon.

b) Bid docs state that we are to turn in proof of DIR registration for SUBCONTRACTORS with our bid proposal. –please confirm.
Please see the response above

6. **From: Jeanette Ferrell <jferrell@f-hconst.com>**
Sent: Monday, August 01, 2016 9:06 AM
To: Alan Montanelli
Subject: RE: PUR 15-033 City Hall Relocation 1st & 7th Floor relocation tenant improvements

Hi Alan,

a) Can you please advise we need to supply a bid bond to bid this project? The specifications do not discuss one, but I want to double check.
Please see the response above

b) Also, what is the estimated value?
Please see the response above

7. **From: Mark Saran <mark@simileconstruction.com>**
Sent: Monday, July 25, 2016 11:05 AM
To: Alan Montanelli
Subject: City Hall Relocation, 1st & 7th Floors, Pre-bid Question

Alan, confirming my question on the phone:

a) Does the City have a Rough Order of Magnitude budget for this project?
Please see the response above

b) Does the City currently have funds for this project? (Reference "Bidder's Checklist" paragraph 1.19.)
Yes, this project is fully funded.

c) What is the project schedule? Start date? Time allotted for the job? (Reference "Bidder's Checklist" paragraph 2.5.4.)
Please see the job walk responses.

POSTED 8/01/16

The City received the following questions during the 8/01/16 job walk:

1. Will the contractor be required to move any furniture that is currently located in the suites?
No, the City will be responsible for moving or removing any furniture.

2. What is the project duration?
Please see the specifications for this information

3. Will any remaining door frames need to be painted?
No, remaining door frames can be left untouched.

4. Has asbestos testing been done and what were the results?
Yes, testing has been done and the report was clean

5. Will the contractor be responsible for any pre-existing issues from previous tenant improvements?
The contractor is only responsible for what is in the specifications

The City received the following questions during the 7/27/16 job walk:

1. What hours during the day are available for work?

The building hours are 6:30AM – 10:00PM Monday through Friday. These can be flexible with reasonable advance notice, say 24 hours.

Sprinkler work, fire alarms or any other work that requires the system to be down will only be allowed between the hours of 6:30am and 3:00pm weekdays.

2. What is the project start date?
   This depends on a variety of factors including Council approval of the contract.

3. Will there be office space available for the contractor?
   There is no specific location available. Please utilize a space in the location where the construction is taking place.

4. Will parking be provided for this construction? Daily rates?
   There will be no onsite parking as the lot will not park most construction vehicles. They will be allowed to load on the dock but then they must find offsite parking. The Market Street Garage would be a good option.

5. What are the CBRE-allowed vendors for the low voltage systems (i.e., Security, Telecom, and Fire Alarm)?

   - **Fire alarm detection and notification must be Simplex. Simplex contact information is:**

     Tamara Schissel
     916-283-0308
     tschissel@simplexgrinnel.com

   - **Building access is Emerge and is serviced by ITS inc and Microbiz Security Co.**

     ITS
     Steven Kim
     209-952-5955

     Microbiz
     Todd Chritton
     925-766-5395
     Todd@mbiz.com

   - **Building HVAC DDC control system is Delta controls and is only serviced by Emcor Services or Environmental Systems Inc. (ESI).**

Emcor
Tracey Jans
916-636-1825
tracy.jans@emcorgroup.com

Environmental Systems Inc.
TJ Kay
916-344-1711
tjkay@esite.net

6. What access is available for moving materials and equipment to the 1st and 7th floors?
   A freight elevator, with a 5,000lbs rating will be available. Availability and scheduling of this elevator will need to be coordinated with CBRE. The loading dock is only available for loading and unloading.

7. Can the freight elevator be left on the floor where the materials have been unloaded?
   Yes, unless it is required on a different floor.

8. Will there be a laydown area available?
   Staging will be allowed in the suite where work is taking place or in the suites on the first floor that the City is leasing. No staging will be allowed in the parking structure. No vehicles are allowed on the plaza.

9. Will the contractor need to clean or replace the window tinting?
   No, the City will be responsible for the window tinting. However, the contractor must keep the windows clean. Any cleaning required during construction will be the contractor's responsibility.

POSTED 7/26/16

Please Note: Page E0.00 of the plans under Plans, Attachments & Agendas has been replaced with an updated version.

POSTED 7/21/16

1. **Communication** – please send your communication via email.
2. **Questions** – the last day to make inquiries is August 4, 2016.
3. **Answers** – clarifications and answers will be posted by August 11, 2016.
4. **Proposals due** promptly by 2:00 pm, Thursday, August 18, 2016, City Clerk's Office.

SECTION 21 00 00 - FIRE PROTECTION

PART 1- GENERAL

A. The General Conditions apply to this Section, also applicable provisions of SECTION 21 00 00.

B. All of the specific conditions of the preceding "General Requirements for the Mechanical Trades" are included as a part of these specifications.

1) The Contractor shall provide a complete fire sprinkler system for the tenant improvement which ties into the existing system. Contractor to submit fire sprinkler drawings to the building department for review and approval.

2) This specification includes the complete installation and furnishing of all labor materials, equipment and supplies required for the performance of all operations relating to the Fire Protection System.

3) All work shall be done in a first-class and workmanlike manner, complete in all respects, and including all items specified herein, or as necessary for the accomplishment of a complete satisfactory and approved installation.

4) The Contractor shall tie into the existing building fire alarm system. Currently vender is Simplex.

C. Scope

1) Connection to city water main.

2) Underground fire main.

3) Excavation and backfill.

4) Post Indicator Valve.

5) Pumper Siamese Connection.

6) Automatic Sprinkler Riser.

7) Wet Pipe Sprinkler System.

8) Flow Switches.

9) Detailed Layout Drawings.

10) Hydraulic Calculations.

D. Work By Electrical Contractor

1) Electrical Contractor shall provide power to the alarm system.

2) The Fire Protection Contractor shall connect the power to the alarm system and be responsible for its operation.

E. Work By Alarm Contractor

1) Furnish and install local and remote fire alarm systems as required by local code.

2) Furnish, install, and connect tamper switches.

3) The Alarm Contractor shall connect the power to the alarm system and be responsible for its operation.

F. Regulations

1) The Fire Protection System under these specifications shall be in accordance with the Standards of the National Fire Protection Association (NFPA) and all other authorities having jurisdiction.

2) Failure on the part of the Sprinkler Contractor to fulfill the above requirements will not relieve him of the responsibility of executing all work necessary for a complete and approved installation without extra expense to the Owner.

3) The contractor shall prepare any detailed diagrams, drawings and calculations which may be required by any governing authorities.

G. Service Fees

1) The Fire Protection Contractor shall apply for and pay all inspection, permit, license, and other service fees required by the local authorities in connection with the work under this Contract.

H. Excavation

1) The Fire Protection Contractor shall do all excavating required for the installation of all piping.

2) All excavations shall be made in compliance with the plans, and in such manner, and to such depths and widths, as will give ample room for installing the pipes; for bracing, sheeting or otherwise supporting the sides of the excavation, and for the pumping of ground water if encountered.

3) The bottoms of trenches must be carefully excavated and trimmed to the elevation and shape of the bottom of the pipe wall. The bottom of each trench shall be recessed to receive the hubs of bell and spigot pipe to be uniformly supported on firm undisturbed earth for its entire length.

4) Corrections in depth of excavation, caused by excavating to an extent greater than that required for the elevation of the pipes, shall be made by bedding the pipe with coarse gravel, thoroughly settled, or by a dry cement-sand-gravel mixture placed at the time the pipes are being installed.

5) Where pipes are laid in firm undisturbed earth, excavation may be done at such time as required to suit the progress of the work. Where pipes occur in disturbed or filled ground the excavation shall be done only after the backfill has been finally settled and made ready for constructing the floor slabs or pavements.

6) The site shall be inspected so that provision is included in job cost for rock excavation or any other unusual condition.

I. Backfilling

1) After the underground piping has been laid, and all tests have been made and approved, the trenches shall be backfilled as follows:

2) Backfill under and within 10 feet of floors, walks and roads shall be clean sand placed in 6" - 8" layers for full depth of excavation.

3) Backfill outside of building shall be clean soil to 12" over the buried lines. The remaining depth of backfill may be excavated earth, free of rocks, clay, cinders, brickbats or other debris.

4) Tracer wire and caution tape shall be laid per latest NFPA and Fire Department requirements.

5) All backfill should be tamped in 6" to 8" layers with heavy hand or pneumatic tampers.

6) Surplus earth from these excavation shall be removed from the premises by this Contractor.

J. Shoring

1) The Fire Protection Contractor shall provide all shoring, bracing, or sheet pilings necessary to maintain the banks of the excavations and he shall remove same as the work progresses and as the filling is accomplished, unless otherwise ordered by the General Contractor. The arrangement of shoring must be such as to prevent any movement of the trench banks. All timber used in shoring shall be removed on completion of the work. Timber which cannot be removed shall remain in place at the expense of the Contractor.

K. Pumping

1) The Fire Protection Contractor shall do all pumping required to keep his excavations free of water.

L. Underground Pipe & Fittings

1) This Contractor shall furnish and install all underground pipe, fittings, valves, rods, clamps, etc. as required for a complete approved underground fire protection system.

2) All underground pipe and fittings shall be approved Johns-Manville C900 Bluebrute. Joints shall be ring-tight or mechanical joints.

3) All underground pipe and fittings shall be anchored in accordance with the NFPA recommendations at all changes in direction and elsewhere as required.

4) All underground pipe outside the building shall be installed with not less than the minimum cover as recommended by NFPA. Where necessary to avoid other underground services, pipe shall be offset down to maintain the minimum cover.

M. Post Indicating Valves

1) Furnish and install Post Indicating Valves for the Automatic Sprinkler Risers, as required. Post Indicator Valves shall have a glass-covered indicator and tamper switches.

N. Automatic Sprinkler Risers & Alarm Check Valves

1) Furnish Automatic Sprinkler Riser as required for the building.

2) In each Automatic Sprinkler Riser provide an approved alarm check valve complete with all trimmings required by NFPA. Furnish a 2-pole electric flow switch and a local alarm gong. The second pole of switch will be utilized by the owner for the centrally located building protection alarm system.

O. Portable Fire Extinguishers

1) Portable Fire Extinguishers of type and quantities required by the NFPA and locations as indicated on the drawings.

P. Siamese Pumper Connection

1) Furnish a Siamese Pumper Connection where required.

Q. Overhead Piping

1) For overhead work, the weight, size, and type of pipe and fittings shall be in accordance with the latest schedule of the NFPA.

2) All main piping shall be placed to leave not less than 12" between the sides of the pipes and any electric light outlets. Branch pipes, located not more than 10" from the ceilings, shall clear the light outlets by 6" or as otherwise required to avoid light reflectors.

3) All sprinkler piping shall be offset where required to meet requirements of other trades.

4) All sprinkler piping shall be supported in an approved manner by means of approved hangers. Pipe 2" and over shall be supported from panel points only.

5) No drilling of any structural member will be allowed without the approval of the Structural Engineer.

R. Sprinkler Heads

1) Unfinished Areas: Sprinkler heads shall be upright automatic spray type of ordinary degree temperature rating. Sprinkler heads installed in the vicinity of heat producing equipment shall be of the temperature rating required by the NFPA.

2) Finished Areas: In finished ceiling areas, the sprinkler heads shall be an automatic spray type of ordinary degree temperature rating. Sprinkler heads shall be quick response type and have flush assembly plate cover. Color to match the ceiling. Contractor shall assume two (2) separate ceiling colors, in addition to standard while.

3) Sprinkler heads shall be located symmetrically with respect to ceiling tiles, patterns within ceiling tiles, lighting fixtures and air diffusers.

4) The Sprinkler Contractor shall furnish four (4) spare heads, packed in a suitable container. Heads shall be representative, and in proportion to the number of each type and temperature rated heads installed. In addition, furnish not less than two (2) special sprinkler head wrenches.

S. Drains

1) Required valved drains shall be provided at base of risers and at low points of overhead systems where they will not drain by gravity. A. S. R. drains shall be piped to outside of building.

T. Flushing

1) Flush underground system in accordance with NFPA Standards.

U. Test Of Completed System

1) Test of the underground piping shall be made as the installation progresses and before the trenches are completely backfilled.

2) Upon completion of the work, the Fire Protection Contractor shall notify the proper insurance authorities and arrange with them to have their authorized inspector in attendance when final job inspection and tests are conducted.

3) All parts of the completed system shall be hydrostatically pressured-tested at 200 pounds per square inch for a minimum two (2) hour period. All defects made evident by the tests shall be properly repaired by this Contractor. Leaks in overhead lines shall be repaired only by means of tightening or replacing the fittings and not by resorting to any caulking method.

V. Hazard Classification

1) The entire building is to be sprinklered, new and existing.

2) The Sprinkler System shall be installed on a Light Hazard Schedule.

W. Water Supply

1) The water supply for the Fire Protection System shall be as shown on the Plumbing Site Plan.

END OF SECTION

CITY HALL RELOCATION PROJECT

Tentative Schedule - 400 E Main Street

TASKS	ANTICIPATED COMPLETION	REVISED 3/28 COMPLETION
nal Admin Services Seating Chart to IT/Movers	5/16/2016	8/8/2016
SD to coordinate move of copy equipment & water service w/vendor	5/23/2016	
Issue Key Cards & Parking Access for Admin Services staff	5/23/2016	8/18/2016
IT to Test network connections		8/12/2016
Admin Services Move-in	8/12/2016	**8/28/2016**

Phase III (7th Floor & City Clerk Office on 1st Floor) - Bid Process

Design-Construction Drawings Complete		7/11/2016
Notify City Clerk		7/18/2016
Bid Packet Posted to Bid Flash		7/21/2016
Public Notice published in The Record		7/23 & 7/24
Job Walk		7/27/2016
Additional question		8/4/2016
Answers from city		8/11/2016
Bids Due		8/18/2016
Constract Awarded by Council - staff report due by August 22		9/27/2016
Contract Executed		
Issue PO		

7th Floor (City Manager & City Attorney) & 1st Floor (City Clerk)

Construction Begins		
Construction Ends		
Modular/Office Furniture Installation		
Final CM Seating Chart to IT/Movers		
CM to coordinate move of copy equipment & water service w/vendor		
Issue Key Cards & Parking Access for CM staff		
City Manager Move-in		
Final CA Seating Chart to IT/Movers		
A to coordinate move of copy equipment & water service w/vendor		
Issue Key Cards & Parking Access for CA staff		
City Attorney Move-in		
Modular Furniture Installation		
Final CC Seating Chart to IT/Movers		
CC to coordinate move of copy equipment w/vendor		
Issue Key Cards & Parking Access for CC		
City Clerk Move-in		

1st Floor (Revenue Services, Mayor/Council Ofcs & Chamber)

Construction Begins		
Construction Ends		
Modular Furniture/Counter Installation		
Final Revenue Services Seating Chart to IT/Movers		
Revenue Services to coordinate move of copy equipment w/vendor		
Issue Key Cards & Parking Access for Revenue Services staff		
Revenue Services Move-in		
Furniture/Chairs for Chamber		
Audio/Visual Equipment for Chamber		
Final Mayor/Council Seating Chart to IT/Movers		
Mayor/Council to coordinate move of copy equipment w/vendor		
Issue Key Cards & Parking Access for Mayor/Council staff		
Mayor/Council Move-in		

Corey Chatfield

From: Alan Montanelli
Sent: Thursday, July 28, 2016 10:59 AM
To: Alan Montanelli
Cc: Corey Chatfield; Peter Rosado
Subject: PUR 15-033 City Hall Relocation 1st & 7th Floor relocation tenant improvements

Good morning,

A discrepancy regarding the time for the mandatory job walk on this project was recently discovered in the bid documents. One location in the document had the starting time as 10:00 am instead of 9:00 am. In order to address this issue, we will be holding an additional mandatory job walk on Monday, August 1, 2016 at 10:00 am.

Please note, if you attended the job walk on July 27, 2016 at 9:00 am and are on the sign in sheet, you are not required to be at the additional job walk scheduled for 8/01/16 in order to bid on this project. Attendance on July 27, 2016 satisfies that requirement. However, you are welcome to attend on 8/01/16 if so desired.

Any questions asked and answered on both job walks will be recorded and included in the official City responses to be posted on our bidflash page at http://www.stocktongov.com/services/business/bidflash .

Thank you,

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

Addendum 1

LDA Partners
DESIGNERS & ARCHITECTS

Project:	**City of Stockton – City Hall Relocation: City Clerk, City Manager, and City Attorney**
Project No:	**PUR 15-033**
Date:	**8/11/16**

From Architect:	LDA Partners, LLP 222 Central Court Stockton, CA 95204	Phone: 209.943.0405 E-mail: prosado@ldapartners.com

This Addendum forms a part of the Contract Documents and modifies the original issued August 27, 2015 as noted below. Acknowledge receipt of this addendum in submittal of bid.

The Following Changes, deletions, additions, and/or alterations in, on and to the Drawings and Specifications shall apply to proposals made for and to the execution of the various parts of the work affected thereby.

Careful Note of This Addendum shall be taken by all parties of interest so that the proper allowance may be made in all computations, estimates and contracts, and all trades affected shall be fully advised in the performance of the work which will be required of them.

In Case of Conflict between Drawings, Specifications, and this Addendum, this Addendum shall govern. This Addendum supersedes all previous Drawings, Specifications, and Instructions pertaining to these items.

I. DRAWING CHANGES, SHEETS & SKETCHES ISSUED WTH THIS ADDENDUM:
   a. G0.00: Revised General Notes.
   b. A9.00: Revised door information and hardware related to door 131A.
   c. E0.00: Revised note.
   d. E1.71: Revised Plan Notes and identify location of panel.

II. SPECIFICATIONS CHANGES:
   a. None

III. NEW DRAWINGS ISSUED WITH THIS ADDENDUM:
   a. None

IV. NEW SPECIFICATIONS ISSUED WITH THIS ADDENDUM:
   a. Provided spec section 21 00 00

V. SUBSTITUTIONS: Note that any subsequent costs from work or design changes from the proposed bidder substitution to the project shall be the responsibility of said bidder. All substitutions shall be completed to the satisfaction of the Owner.

a. None

VI. CLARIFICATION:

1. The fire sprinkler/protection system will be design/build. See added spec section 21 00 00.
2. Wall touchup locations are provided on PUR_15-033_City Hall wall touchup.pdf document.

End of Addendum 1

Corey Chatfield

From: Peter Rosado <PRosado@ldapartners.com>
Sent: Wednesday, August 10, 2016 2:02 PM
To: Alan Montanelli
Cc: Corey Chatfield; Eric Wohle
Subject: City Hall - PUR 15-033 Addendum 1
Attachments: Section 210000 Fire Protection.pdf; PUR_15-033_City Hall wall touchup.pdf; PUR_15-033 E sheet Addendum 1.pdf; PUR_15-033 A sheet Addendum 1.pdf; COS 1&7 Addendum 1.pdf; COS 1&7 Addendum 1.doc

Hi Alan,

Please see attached documents for addendum 1.
The file named "COS 1&7 Addendum 1" has a summary of revisions to the bid documents. This is a standard format of how we send addendums out of our office.

To answer the questions on the Word doc you sent over:

1. Can you quantify the amount of drywall repairs, holes, cracks, minor touch up etc.? Answer: Wall touchup locations are provided on PUR_15-033_City Hall wall touchup.pdf document.

- On sheet A2.11- 1st floor demolition ceiling plan – storage room 146 shows to demolish ceiling and legend shows to remain. Are the shaded areas to remain or demolish? Answer: Ceilings to be demolished are noted on the plan.

- Will the fire sprinkler heads need to be relocated for addition of new walls? They are not shown on the plans or mentioned in the specification. Answer: The fire sprinkler/protection system will be design/build. See added spec section 21 00 00.

If you have any questions please let us know.
Thanks,

PETER ROSADO
AIA, Architect | Associate

LDA Partners
DESIGNERS & ARCHITECTS

209.943.0405
www.ldapartners.com

From: Alan Montanelli [mailto:Alan.Montanelli@stocktonca.gov]
Sent: Tuesday, August 09, 2016 8:26 AM
To: Peter Rosado; Corey Chatfield
Subject: Emailed Questions-responses needed
Importance: High

Hello Pete and Corey,

Here is my final list of questions that were emailed by the deadline. I highlighted the questions requiring a response from LDA.

Also, please review any emails you might have received with questions to confirm that we have captured them all.

I'll need responses to the highlighted questions by end of day tomorrow.

Thank you!

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

SECTION 21 00 00 - FIRE PROTECTION

PART 1- GENERAL

A. The General Conditions apply to this Section, also applicable provisions of SECTION 21 00 00.

B. All of the specific conditions of the preceding "General Requirements for the Mechanical Trades" are included as a part of these specifications.

1) The Contractor shall provide a complete fire sprinkler system for the tenant improvement which ties into the existing system. Contractor to submit fire sprinkler drawings to the building department for review and approval.

2) This specification includes the complete installation and furnishing of all labor materials, equipment and supplies required for the performance of all operations relating to the Fire Protection System.

3) All work shall be done in a first-class and workmanlike manner, complete in all respects, and including all items specified herein, or as necessary for the accomplishment of a complete satisfactory and approved installation.

4) The Contractor shall tie into the existing building fire alarm system. Currently vender is Simplex.

C. Scope

1) Connection to city water main.

2) Underground fire main.

3) Excavation and backfill.

4) Post Indicator Valve.

5) Pumper Siamese Connection.

6) Automatic Sprinkler Riser.

7) Wet Pipe Sprinkler System.

8) Flow Switches.

9) Detailed Layout Drawings.

10) Hydraulic Calculations.

D. Work By Electrical Contractor

1) Electrical Contractor shall provide power to the alarm system.

2) The Fire Protection Contractor shall connect the power to the alarm system and be responsible for its operation.

E. Work By Alarm Contractor

1) Furnish and install local and remote fire alarm systems as required by local code.

2) Furnish, install, and connect tamper switches.

3) The Alarm Contractor shall connect the power to the alarm system and be responsible for its operation.

F. Regulations

1) The Fire Protection System under these specifications shall be in accordance with the Standards of the National Fire Protection Association (NFPA) and all other authorities having jurisdiction.

2) Failure on the part of the Sprinkler Contractor to fulfill the above requirements will not relieve him of the responsibility of executing all work necessary for a complete and approved installation without extra expense to the Owner.

3) The contractor shall prepare any detailed diagrams, drawings and calculations which may be required by any governing authorities.

G. Service Fees

1) The Fire Protection Contractor shall apply for and pay all inspection, permit, license, and other service fees required by the local authorities in connection with the work under this Contract.

H. Excavation

1) The Fire Protection Contractor shall do all excavating required for the installation of all piping.

2) All excavations shall be made in compliance with the plans, and in such manner, and to such depths and widths, as will give ample room for installing the pipes; for bracing, sheeting or otherwise supporting the sides of the excavation, and for the pumping of ground water if encountered.

3) The bottoms of trenches must be carefully excavated and trimmed to the elevation and shape of the bottom of the pipe wall. The bottom of each trench shall be recessed to receive the hubs of bell and spigot pipe to be uniformly supported on firm undisturbed earth for its entire length.

4) Corrections in depth of excavation, caused by excavating to an extent greater than that required for the elevation of the pipes, shall be made by bedding the pipe with coarse gravel, thoroughly settled, or by a dry cement-sand-gravel mixture placed at the time the pipes are being installed.

5) Where pipes are laid in firm undisturbed earth, excavation may be done at such time as required to suit the progress of the work. Where pipes occur in disturbed or filled ground the excavation shall be done only after the backfill has been finally settled and made ready for constructing the floor slabs or pavements.

6) The site shall be inspected so that provision is included in job cost for rock excavation or any other unusual condition.

I. Backfilling

1) After the underground piping has been laid, and all tests have been made and approved, the trenches shall be backfilled as follows:

2) Backfill under and within 10 feet of floors, walks and roads shall be clean sand placed in 6" - 8" layers for full depth of excavation.

3) Backfill outside of building shall be clean soil to 12" over the buried lines. The remaining depth of backfill may be excavated earth, free of rocks, clay, cinders, brickbats or other debris.

4) Tracer wire and caution tape shall be laid per latest NFPA and Fire Department requirements.

5) All backfill should be tamped in 6" to 8" layers with heavy hand or pneumatic tampers.

6) Surplus earth from these excavation shall be removed from the premises by this Contractor.

J. Shoring

1) The Fire Protection Contractor shall provide all shoring, bracing, or sheet pilings necessary to maintain the banks of the excavations and he shall remove same as the work progresses and as the filling is accomplished, unless otherwise ordered by the General Contractor. The arrangement of shoring must be such as to prevent any movement of the trench banks. All timber used in shoring shall be removed on completion of the work. Timber which cannot be removed shall remain in place at the expense of the Contractor.

K. Pumping

1) The Fire Protection Contractor shall do all pumping required to keep his excavations free of water.

L. Underground Pipe & Fittings

1) This Contractor shall furnish and install all underground pipe, fittings, valves, rods, clamps, etc. as required for a complete approved underground fire protection system.

2) All underground pipe and fittings shall be approved Johns-Manville C900 Bluebrute. Joints shall be ring-tight or mechanical joints.

3) All underground pipe and fittings shall be anchored in accordance with the NFPA recommendations at all changes in direction and elsewhere as required.

4) All underground pipe outside the building shall be installed with not less than the minimum cover as recommended by NFPA. Where necessary to avoid other underground services, pipe shall be offset down to maintain the minimum cover.

M. Post Indicating Valves

1) Furnish and install Post Indicating Valves for the Automatic Sprinkler Risers, as required. Post Indicator Valves shall have a glass-covered indicator and tamper switches.

N. Automatic Sprinkler Risers & Alarm Check Valves

1) Furnish Automatic Sprinkler Riser as required for the building.

2) In each Automatic Sprinkler Riser provide an approved alarm check valve complete with all trimmings required by NFPA. Furnish a 2-pole electric flow switch and a local alarm gong. The second pole of switch will be utilized by the owner for the centrally located building protection alarm system.

O. Portable Fire Extinguishers

1) Portable Fire Extinguishers of type and quantities required by the NFPA and locations as indicated on the drawings.

P. Siamese Pumper Connection

1) Furnish a Siamese Pumper Connection where required.

Q. Overhead Piping

1) For overhead work, the weight, size, and type of pipe and fittings shall be in accordance with the latest schedule of the NFPA.

2) All main piping shall be placed to leave not less than 12" between the sides of the pipes and any electric light outlets. Branch pipes, located not more than 10" from the ceilings, shall clear the light outlets by 6" or as otherwise required to avoid light reflectors.

3) All sprinkler piping shall be offset where required to meet requirements of other trades.

4) All sprinkler piping shall be supported in an approved manner by means of approved hangers. Pipe 2" and over shall be supported from panel points only.

5) No drilling of any structural member will be allowed without the approval of the Structural Engineer.

R. Sprinkler Heads

1) Unfinished Areas: Sprinkler heads shall be upright automatic spray type of ordinary degree temperature rating. Sprinkler heads installed in the vicinity of heat producing equipment shall be of the temperature rating required by the NFPA.

2) Finished Areas: In finished ceiling areas, the sprinkler heads shall be an automatic spray type of ordinary degree temperature rating. Sprinkler heads shall be quick response type and have flush assembly plate cover. Color to match the ceiling. Contractor shall assume two (2) separate ceiling colors, in addition to standard while.

3) Sprinkler heads shall be located symmetrically with respect to ceiling tiles, patterns within ceiling tiles, lighting fixtures and air diffusers.

4) The Sprinkler Contractor shall furnish four (4) spare heads, packed in a suitable container. Heads shall be representative, and in proportion to the number of each type and temperature rated heads installed. In addition, furnish not less than two (2) special sprinkler head wrenches.

S. Drains

1) Required valved drains shall be provided at base of risers and at low points of overhead systems where they will not drain by gravity. A. S. R. drains shall be piped to outside of building.

T. Flushing

1) Flush underground system in accordance with NFPA Standards.

U. Test Of Completed System

1) Test of the underground piping shall be made as the installation progresses and before the trenches are completely backfilled.

2) Upon completion of the work, the Fire Protection Contractor shall notify the proper insurance authorities and arrange with them to have their authorized inspector in attendance when final job inspection and tests are conducted.

3) All parts of the completed system shall be hydrostatically pressured-tested at 200 pounds per square inch for a minimum two (2) hour period. All defects made evident by the tests shall be properly repaired by this Contractor. Leaks in overhead lines shall be repaired only by means of tightening or replacing the fittings and not by resorting to any caulking method.

V. Hazard Classification

1) The entire building is to be sprinklered, new and existing.

2) The Sprinkler System shall be installed on a Light Hazard Schedule.

W. Water Supply

1) The water supply for the Fire Protection System shall be as shown on the Plumbing Site Plan.

END OF SECTION

GENERAL ELECTRICAL LEGEND

- CONDUIT –SURFACE MOUNTED OR ABOVE CEILING –EMT WITH COMPRESSION FITTING UNLESS NOTED ON PLANS
- CONDUIT –CONCEALED BELOW FLOOR IN SLAB OR UNDERGROUND IN PVC SCH 40 WITH PVC ELBOWS
- HOMERUN TO PERSPECTIVE PANEL OR CABINET –BRANCH CIRCUIT WITH OUT FURTHER DESIGNATION IS A #12 WIRE CIRCUIT
- FLEX (GROUND, NEUTRAL, WIRE SIZE, CKT. WIRE)
- TERMINAL CABINET
- PANEL BOARD –SEE SCHEDULE
- MOTOR/EXHAUST FAN –N.I.C.S. –CONNECT AS REQUIRED
- DUPLEX RECEPTACLE –18" A.F.F. U.O.N.
- QUADPLEX RECEPTACLE –18" A.F.F. U.O.N.
- FLOOR POWER RECEPTACLE –WALKER OR EQUAL
- 30A. –4 WIRE GROUND RECEPTACLE +18" A.F.F. – HUBBELL, BRYANT, OR EQUAL
- 50A. –4 WIRE GROUND RECEPTACLE +18" A.F.F. – HUBBELL, BRYANT, OR EQUAL
- GFCI RECEPTACLE +18" A.F.F. U.O.N.
- DUPLEX RECEPTACLE –18" A.F.F. U.O.N. 50% TO BE SWITCHED
- QUADPLEX RECEPTACLE –18" A.F.F. U.O.N. 50% TO BE SWITCHED
- JUNCTION BOX –4 11/16" x 2 1/8" SQUARE OR SMALL
- JUNCTION BOX –LARGER THAN 4 11/16" x 2 1/8" SQUARE
- FLOOR JUNCTION BOX –WALKER OR EQUAL

LIGHTING LEGEND

SEE FIXTURE SCHEDULE FOR EXACT CALL OUT & DESCRIPTION

- FIXTURE IDENTIFICATION –LETTER INDICATES FIXTURE TYPE –NUMERAL INDICATES LAMP QUANTITY AND WATTAGE
- 1 RELAY ROOM CONTROLLER. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER
- 2 RELAY ROOM CONTROLLER. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER
- 3 RELAY ROOM CONTROLLER. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER
- CEILING MOUNT OCCUPANCY SENSOR. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER.
- WALL MOUNT OCCUPANCY SENSOR. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER.
- SINGLE-ZONE PHOTOSENSOR. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER.
- MULTI-ZONE PHOTOSENSOR. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER.
- PLUG LOAD CONTROLLER. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER.
- EMERGENCY LIGHTING CONTROL UNIT. SEE CONTROLS LEGEND FOR REQUIRED PART NUMBER.

COMMUNICATIONS LEGEND

- MULTIFUNCTION OUTLET –DATA/TELE./CATV –AT&T/LOCAL –SERIES OR EQUAL +18" –"#" DENOTES # OF CAT-6 DATA, "T" DENOTES TELE, "V" DENOTES CATV DROPS –2 CAT-6 U.O.N. PROVIDE MIN 3/4"C TO INTERSTITIAL CEILING SPACE, ROUTED WITHIN NEAREST WALL.
- MAIN DISTRIBUTION FRAME –RACK OR BACKBOARD –SEE PLANS
- INTERMEDIATE DISTRIBUTION FRAME –RACK OR BACKBOARD –SEE PLANS
- ENCLOSE CIRCLE DENOTES FLOOR OUTLET –WALKER OR EQUAL
- CEILING MOUNTED WIRELESS ACCESS MONITOR. 1 CAT-5E TO BE ROUTED WITHIN INTERSTITIAL CEILING SPACE.
- INTERCOM HANDSET –COMPATIBLE SPECIFIED SYSTEM +48"
- WALL MOUNTED ALARM SYSTEM ACCESS UNIT
- WALL MOUNTED CARD READER

FIRE ALARM LEGEND

SEE FIRE ALARM EQUIPMENT SCHEDULE FOR EXACT EQUIPMENT DESCRIPTION

- FIRE ALARM CONTROL PANEL
- REMOTE ANNUNCIATOR AT CONSTANTLY ATTENDED LOCATION +48"
- SMOKE DETECTOR / HEAT DETECTOR — DETECTOR SUBSCRIPTS: A ATTIC, U UNDER FLOOR/PLATFORM, D DUCT
- MANUAL PULL STATION +48" A.F.F. – TYPICAL
- ELECTRIC HORN –SUBSCRIPTS: w –WR –WEATHER PROOF
- STROBE –RATING AS NOTED
- COMBINATION HORN/STROBE –STROBE RATING AS NOTED

ELECTRICAL ABBREVIATIONS

[illegible]

ELECTRICAL COMPLIANCE NOTES

THE INTENT OF THE DRAWINGS AND SPECIFICATION IS TO CONSTRUCT THE PROPOSED BUILDING IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF TITLE 22, DIVISION 7, CHAPTER 7, CALIFORNIA CODE OF REGULATIONS AND TITLE 24 –– ALL APPLICABLE PARTS OF LATEST EFFECTIVE EDITIONS.

RESPONSIBILITIES OF ARCHITECT/ENGINEER OF RECORD AND CONSULTANTS, PROJECT INSPECTOR, AND GENERAL CONTRACTOR SHALL BE IN ACCORDANCE WITH CA HEALTH AND SAFETY CODE, SECTIONS 15000–150233. VERIFIED REPORTS FOR THE CONSTRUCTION ARE REQUIRED BY C.C.R.1 TITLE 22, CHAPTER 7, SECTION 94071.

ALL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM TO THE FOLLOWING CODES AND REGULATIONS AS APPLICABLE:

2013 CALIFORNIA ADMINISTRATIVE CODE (CAC)
PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
2013 CALIFORNIA BUILDING CODE (CBC)
PART 2, TITLE 24, CCR
BASED ON THE 2012 INTERNATIONAL BUILDING CODE (IBC)
2013 CALIFORNIA ELECTRICAL CODE (CEC)
PART 3, TITLE 24, CCR
BASED ON THE 2011 NATIONAL ELECTRICAL CODE (NEC)
2013 CALIFORNIA MECHANICAL CODE (CMC)
PART 4, TITLE 24, CCR
BASED ON THE 2012 UNIFORM MECHANICAL CODE (UMC)
2013 CALIFORNIA PLUMBING CODE (CPC)
PART 5, TITLE 24, CCR
BASED ON THE 2012 UNIFORM PLUMBING CODE (UPC)
2013 CALIFORNIA FIRE CODE (CFC)
PART 9, TITLE 24, CCR
BASED ON THE 2012 INTERNATIONAL FIRE CODE (IFC)

UNLESS OTHERWISE STATED, IT IS INTENDED THAT THE ABOVE CODES AND REGULATIONS REFER TO THE LATEST EDITION OR REVISION IN EFFECT ON THE DATE OF THE CONTRACT. NOTHING ON THE DRAWING IS TO BE CONSTRUED AS REQUIRING OR PERMITTING WORK THAT IS CONTRARY TO THE ABOVE LISTED CODES AND REGULATIONS, OR OTHER LOCAL, STATE OR FEDERAL CODES OR REGULATIONS WHICH MAY BE APPLICABLE.

GENERAL ELECTRICAL NOTES

1. PROVIDE ALL LABOR, MATERIALS, TOOLS, PLANT EQUIPMENT, TRANSPORTATION AND ALL PERFORM ALL OPERATIONS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF ALL ELECTRICAL WORK REQUIRED FOR THE COMPLETE AND OPERATING SYSTEMS AS OUTLINED WITHIN THE SCOPE OF WORK.
2. UNDERWRITERS LABORATORIES, INC., SHALL MEET THEIR REQUIREMENTS AND SHALL BEAR THEIR LABEL WHEREVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS REGULARLY FURNISHED BY THAT AGENCY.
3. THE SIZE AND LOCATIONS OF EQUIPMENT ARE SHOWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL MAKE USE OF ALL DATA IN ALL CONTRACT DOCUMENTS AND VERIFY THIS INFORMATION AT THE SITE.
4. CONDUCTORS SHALL BE COPPER CONDUCTORS TYPE AS NOTED ON CONSTRUCTION DOCUMENTS.
5. ALL REQUIRED CONDUITS SHALL BE PROVIDED BY E.C. LOW VOLTAGE WIRING SHALL BE BY MECHANICAL CONTRACTOR, LINE VOLTAGE (50 VOLTS OR MORE) SHALL BE BY ELECTRICAL CONTRACTOR.
6. ALL CONDUITS SHALL BE SUPPORTED AND BRACED PER OPM NO. OPM–0043–13, THE "SEISMIC RESTRAINT GUIDELINES FOR SUSPENDED DISTRIBUTION SYSTEMS" FOR PIPES AND CONDUITS ONLY. LAYOUT DRAWINGS, SHOWING THE BRACING/SUPPORT LOCATIONS AND REFERENCES TO DETAILS FROM THE RELEVANT OSHPD PRE–APPROVALS FOR PIPING/DUCTS/CONDUITS EXCEPT FIRE SPRINKLERS, NEED TO BE SUBMITTED FOR USE BY THE IOR AND OSHPD STAFF. THE LAYOUT DRAWINGS NEED TO BE REVIEWED AND ACCEPTED BY THE AOR AND SEOR PRIOR TO STARTING INSTALLATION OF THE BRACING/SUPPORT. IOR SHALL ENSURE THE ABOVE REQUIREMENTS ARE SATISFIED.
7. DO NOT PENETRATE STRUCTURAL MEMBERS, INCLUDING BEAMS, COLUMNS, OR FOOTINGS, WITHOUT PRIOR WRITTEN CONSENT OF THE SEOR. SHOULD IT BECOME NECESSARY TO PENETRATE SUCH MEMBERS, NOTIFY THE DISTRICT IN WRITING WITHOUT DELAY, PRIOR TO PROCEEDING WITH CONSTRUCTION AROUND SUCH MEMBERS.
8. ALL ELECTRICAL WORK SHALL CONFORM WITH THE 2013 CALIF. ELECTRICAL CODE CALIFORNIA TITLE 17, 19 & 24 ALONG WITH N.F.P.A. STANDARDS AND THE STATE FIRE MARSHAL'S REQUIREMENTS.
9. ALL WORK TO BE IN ACCORDANCE WITH REQUIREMENTS OF STATE & GOVERNING LOCAL FIRE CODES AND BUILDING CODES.
10. WHERE EXISTING CONSTRUCTION IS CUT, DAMAGED, OR REMODELED, PATCH WITH MATERIALS TO MATCH IN KIND, QUALITY, AND PERFORMANCE.
11. WORK SHALL BE EXECUTED IN A CAREFUL AND ORDERLY MANNER WITH THE LEAST POSSIBLE DISTURBANCE TO PUBLIC AND TO OCCUPANTS OF EXISTING BUILDING.
12. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR SAFETY OF ALL PERSONS ON OR ABOUT THE CONSTRUCTION SITE, IN ACCORDANCE WITH APPLICABLE LAWS AND CODES. GUARD ALL HAZARDS IN ACCORDANCE WITH THE SAFETY PROVISIONS OF THE LATEST MANUAL OF ACCIDENT PREVENTION PUBLISHED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA.
13. ~~CLEAN ALL EXPOSED SURFACES AND NEW EQUIPMENT AFTER COMPLETION.~~
14. CONTRACTOR TO COORDINATE WITH OWNER REQUIREMENT FOR LOW VOLTAGE SYSTEMS SUCH AS, BUT NOT LIMITED TO: SECURITY, PHONES, DATA, CLOSED CIRCUIT T.V., ETC. ELECTRICAL CONTRACTOR SHALL INCLUDE ALL REQUIRED LOW VOLTAGE SYSTEM SUB–CONSULTANTS IN THEIR BID AND CONTRACT. (1)
15. ALL CONDUIT SHALL BE TYPE EMT CONDUIT UNLESS OTHERWISE NOTED. TYPE MC CABLE SHALL NOT BE USED UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DOCUMENTS.
16. OPERATED DEVICES SUCH AS, BUT NOT LIMITED TO, TELE/DATA OUTLETS, RECEPTACLE OUTLETS AND LIGHT SWITCHES INSTALLED IN AREAS NOT RESTRICTED TO AUTHORIZED MAINTENANCE PERSONAL SHALL BE MOUNTED AT A MINIMUM OF +15" AFF., AS MEASURED FROM THE BOTTOM OF THE DEVICE OUTLET BOX, AND MAXIMUM OF +48" AFF., AS MEASURED FROM THE TOP OF THE DEVICE OUTLET BOX.
17. ALL CHANGE ORDER PROPOSALS AND CHANGE ORDERS, BOTH ADDITIVE AND DEDUCTIVE, SHALL BE BASED UPON AND BE ACCOMPANIED BY A DETAILED MATERIALS AND LABOR BREAKDOWN FOR EACH SPECIFIC TASK AND/OR ITEM. THE BREAKDOWN SHALL INCLUDE ACTUAL MATERIALS COSTS PLUS OVERHEAD AND PROFIT, AS WELL AS LABOR UNITS BASE UPON THE MOST RECENT NECA MANUAL OF LABOR UNITS (NECA INDEX #4090) OR EQUIVALENT PUBLICATION FOR EACH SPECIFIC TASK AND ITEM. LABOR COSTS SHALL BE COMPUTED AS OUTLINED WITHIN THE GENERAL CONDITIONS, BASED UPON THE NECA LABOR TABLES FOR EACH TASK REQUIRED. MATERIALS COSTS SHALL INCLUDE ACTUAL CONTRACTOR INVOICE PLUS NO MORE THAN 15% MARKUP. THE OWNER AND CONTRACTOR AGREE TO THE ABOVE CHANGE ORDER COST PROCEDURE, FOR BOTH ADDITIVE AND DEDUCTIVE CHANGE ORDERS.
18. ALL PERSONNEL WORKING WITH ENERGIZED EQUIPMENT WITHIN THE RESTRICTED ZONE PER NFPA–70E SHALL COMPLY WITH ALL NFPA–70E AND OSHA REQUIREMENTS AND BE ARC FLASH SAFETY CERTIFIED.

GENERAL ELECTRICAL NOTES CONT.

19. PRIOR TO SUBMISSION OF ANY BID, THE CONTRACTOR SHALL PERFORM A THOROUGH FIELD SURVEY OF THE EXISTING SITE CONDITIONS AND FEATURES. ANY SITE CONDITIONS WHICH MAY CAUSE SIGNIFICANT DEVIATION FROM THE DESIGN DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF ARCHITECT/ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO SUBMISSION OF THE CONTRACTOR'S BID. VERIFY DIMENSIONS OF ALL OWNER–FURNISHED OPERATING EQUIPMENT TO ENSURE PROPER COORDINATION WITH CONSTRUCTION.
20. SCHEDULE ALL WORK WITH THE BUILDING MANAGEMENT INCLUDING CONSTRUCTION ACCESS AND STORAGE.
21. THE CONSTRUCTION SCHEDULE PROCEDURE SHALL BE APPROVED BY THE CITY AND THE BUILDING MANAGEMENT PRIOR TO THE START OF CONSTRUCTION.
22. ALL UTILITIES REQUIRED FOR THE CONTINUOUS OPERATION OF ALL EXISTING FACILITIES MUST BE MAINTAINED IN SERVICE AT ALL TIMES.
23. CONTRACTOR SHALL PROVIDE DUST COVERS AS REQUIRED TO CONTAIN DUST AND DEBRIS WITHIN CONSTRUCTION AREA. BROOM CLEAN ALL AREAS EACH DAY. KEEP DIRT AND DUST TO A MINIMUM.
24. ALL REMOVED ITEMS DEEMED TO HAVE VALUE BY THE OWNER SHALL BE DELIVERED TO A PLACE OF STORAGE AT THE SITE AS DIRECTED. ALL OTHER ITEMS MUST BE DISPOSED OF OFF SITE IN A LEGAL MANNER.
25. IF ANY PART OF THIS CONTRACTOR'S WORK DEPENDS UPON THE WORK OF A SEPARATE CONTRACTOR, THIS CONTRACTOR SHALL INSPECT SUCH OTHER WORK AND PROMPTLY REPORT IN WRITING TO THE PROJECT ARCHITECT ANY DEFECTS IN SUCH OTHER WORK THAT RENDERS IT UNSUITABLE TO RECEIVE THE WORK OF THIS CONTRACTOR. FAILURE OF THIS CONTRACTOR TO SO INSPECT AND REPORT SHALL CONSTITUTE AN ACCEPTANCE OF THE OTHER CONTRACTOR'S WORK, EXCEPT AS TO DEFECTS WHICH MAY DEVELOP IN OTHER CONTRACTOR'S WORK AFTER EXECUTION OF THIS CONTRACTOR'S WORK.
26. WHEREVER MORE THAN ONE (1) MANUFACTURER'S PRODUCT IS SPECIFIED, THE FIRST–NAMED PRODUCT IS THE BASIS FOR THE PROJECT DESIGN AND THE USE OF ALTERNATIVE NAMED MANUFACTURER'S PRODUCTS OR SUBSTITUTES MAY REQUIRE MODIFICATIONS IN THE PROJECT DESIGN AND CONSTRUCTION. IF SUCH ALTERNATIVES ARE PROPOSED BY CONTRACTOR AND ARE FAVORABLY REVIEWED BY THE ARCHITECT/ENGINEER OF RECORD, THE CONTRACTOR SHALL ASSUME COSTS REQUIRED TO MAKE NECESSARY REVISIONS AND MODIFICATIONS INCLUDING ADDITIONAL COSTS TO THE OWNER FOR EVALUATIONS OF MODIFICATION OF THE PROJECT DESIGN SUBMITTED BY CONTRACTOR TO THE ARCHITECT/ENGINEER OF RECORD. SUBSTITUTED ITEMS THAT REQUIRE CALCULATIONS SHALL HAVE CALCULATIONS SUBMITTED WITH SHOP DRAWINGS BEFORE APPROVAL WILL BE CONSIDERED.
27. THE CONTRACTOR SHALL GUARANTEE THAT ALL WORK DONE UNDER THIS SPECIFICATION WILL BE FREE FROM FAULTY MATERIALS OR WORKMANSHIP AND HEREBY AGREES TO REPAIR OR REPLACE WITHOUT COST TO THE OWNER AND TO HIS SATISFACTION ALL DEFECTS OR IMPERFECTIONS APPEARING IN SAID WORK WITHIN A PERIOD OF ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE BY THE OWNER OF ALL WORK DONE UNDER THIS SPECIFICATION.
28. STANDARD SPECIFICATIONS –TITLE 8, TITLE 24 & OSHA REQUIREMENTS. SCHEDULE CONSTRUCTION WITH OWNER AND UTILITY COMPANY IN ADVANCE.
29. SCHEDULE ALL ELECTRICAL OUTAGES WITH OWNER AND OBTAIN APPROVAL FOR THE SAME. INCLUDE ANY OVERTIME OR STANDBY GENERATORS AS REQUIRED IN THE BID.
30. ALL GROUNDING OF DEVICES AND EQUIPMENT SHOWN ON PLANS SHALL BE IN ACCORDANCE WITH CEC 250.122.
31. ALL ELECTRICAL EQUIPMENT EXPOSED TO WEATHER SHALL BE LISTED FOR EXTERIOR USE.
32. ALL EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
33. PROVIDE 3/4"C RISER ABOVE CEILING SPACE AT EACH DATA/TELE OUTLET LOCATION SHOWN. COORDINATE ROUTING OF SIGNAL CABLE WITH FACILITY I.T. DEPARTMENT.
34. THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE AVAILABILITY OF SPARE BRANCH CIRCUITS AND ALL EXISTING BRANCH CIRCUITS, WITHIN THE SCOPE OF WORK, AT TIME OF CONSTRUCTION. SHOULD ANY NEW OR EXISTING BRANCH CIRCUITS DEVIATE FROM THE APPROVED CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL COORDINATE THE UPDATED CIRCUIT INFORMATION WITH THE EEOR. ALL DEVICES AND EQUIPMENT WITHIN THE SCOPE OF WORK OF THIS PROJECT SHALL HAVE THEIR BRANCH CIRCUIT OF UTILIZATION CLEARLY AND PERMANENTLY IDENTIFIED AT THE LOCATION OF THE DEVICE OR EQUIPMENT PRIOR TO RECEIVING A JOB COMPLETION SIGN OFF FROM THE EEOR.
35. THE CONTRACTOR SHALL CONDUCT INSULATION RESISTANCE TESTING PER IEEE STANDARDS USING A CERTIFIED TESTING COMPANY ON ALL FEEDERS EQUAL TO OR LARGER THAN 60 AMPS. CONTRACTOR SHALL SUBMIT TEST REPORT TO THE ENGINEER FOR APPROVAL. INCLUDE ALL COST IN THE BID.
36. PROVIDE A COMPLETE ARC–FLASH ANALYSIS TO COMPRISE ALL PANELS, FEEDERS AND DEVICES WITHIN AND SERVING THIS FACILITY, NFPA 70E REQUIREMENTS, PREPARED BY A REGISTERED CALIFORNIA ENGINEER. SUBMIT REPORT TO ENGINEER FOR APPROVAL. INCLUDE ALL COST IN THE BID.
37. THE ENTIRE PROJECT SHALL BE RE–LAMPED AND FIXTURES CLEANED, WITHIN 10 DAYS OF THE PROJECT COMPLETION OF ACCEPTANCE BY THE OWNER. –ALL NEW FIXTURES– TYPICAL. INCLUDE THESE COST IN THE BID.

CONTROL LEGEND NOTES:

1. ALL DEVICES SHALL BE EXACT PART NUMBER PROVIDED OR APPROVED EQUAL.

LIGHTING CONTROL LEGEND

SYMBOL	DESCRIPTION
	ROOM CONTROLLER WATT STOPPER PART NO. LMRC-211 OR APPROVED EQUAL
	ROOM CONTROLLER WATT STOPPER PART NO. LMRC-212 OR APPROVED EQUAL
	ROOM CONTROLLER WATT STOPPER PART NO. LMRC-213 OR APPROVED EQUAL
	1-BUTTON DIMMING WALL SWITCH WATT STOPPER PART NO. LMDM-101 OR APPROVED EQUAL
	MOTION SENSING LOW VOLTAGE SWITCH WATT STOPPER PART NO. LMDW-101 OR APPROVED EQUAL
	INFRARED CEILING SENSOR 360 DEG. WATT STOPPER PART NO. LMPC-100 OR APPROVED EQUAL
	INFRARED CEILING SENSOR 180 DEG. WATT STOPPER PART NO. LMDX-100 OR APPROVED EQUAL
	SINGLE-ZONE CLOSED LOOP PHOTOSENSOR WATT STOPPER PART NO. LMLS-400 OR APPROVED EQUAL
	MULTI-ZONE CLOSED LOOP PHOTOSENSOR WATT STOPPER PART NO. LMLS-500 OR APPROVED EQUAL
	LOAD CONTROLLER (PLUG LOAD CONTROLLER) WATT STOPPER PART NO. LMPL-101 OR APPROVED EQUAL
	EMERGENCY LIGHTING CONTROL UNIT WATT STOPPER PART NO. ELCU-200 OR APPROVED EQUAL
— LV —	CAT-5E/6 L.V. CABLE IN 3/4" MIN. EMT OR FRC (SEE MANUFACTURE FOR CONNECTION SPECIFICATIONS)

LIGHTING FIXTURE SCHEDULE

DESIG.	SYMBOL	LAMP QTY/WATTS	DESCRIPTION	MANUFACTURER
A		LED 32.5 WATTS	RECESSED LED TROFFER 2'X2' 2806 LUMENS 277V	PHILLIPS LIGHTING VERSAFORM 4122-01-ST-L-98-E-5-7 -2
B		LED 42.4 WATTS	RECESSED LED TROFFER 2'X4' 3944 LUMENS 277V	PHILLIPS LIGHTING VERSAFORM 4124-01-ST-L-98-0-5-7 -2
C		LED 39.6 WATTS	1'X4' LED SURFACE MOUNT TROFFER 277V	PHILLIPS LIGHTING VERSAFORM 4114-S1-ST-L-8C-E-5-7 -2
D1		LED 15 WATTS	6" LED DOWN LIGHT 277V	PHILLIPS LIGHTING LIGHTOLIER LYTECASTER FRAME KIT: L6R-A-Z10-U-VA LIGHT: L6R-15-90-35-VA TRIM: L6R-D-W
E		LED	EMERGENCY EXIT LIGHT 277V	CHLORIDE SYMMETRY SERIES S-N-U-R-W

NOTE:
ALL LIGHT FIXTURES WITH DIMMING SHALL HAVE 2#18, CLASS 2 LOW VOLTAGE WIRING FROM ROOM CONTROLLER TO LIGHT FIXTURE FOR DIMMING CONTROL.

MILLER PEZZONI & ASSOCIATES, INC.
CONSULTING ELECTRICAL ENGINEERS

LDA partners

BID SET

CITY HALL RELOCATION CITY CLERK AND CITY MANAGER

COVER SHEET

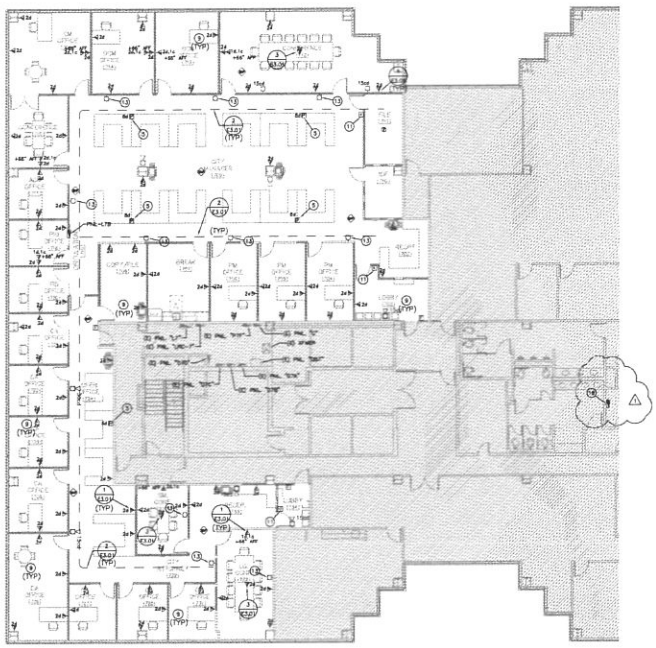
CITY OF STOCKTON
425 N. EL DORADO

REV. NO.	DESCRIPTION	DATE	BY	APRVD
1	ADDENDUM 1	8/11/2016	CNW	SV

SCALE:
DESIGNED BY: SV
DRAWN BY: CNW
CHECKED BY: KLP
RECORD DWG: 7-18-2016

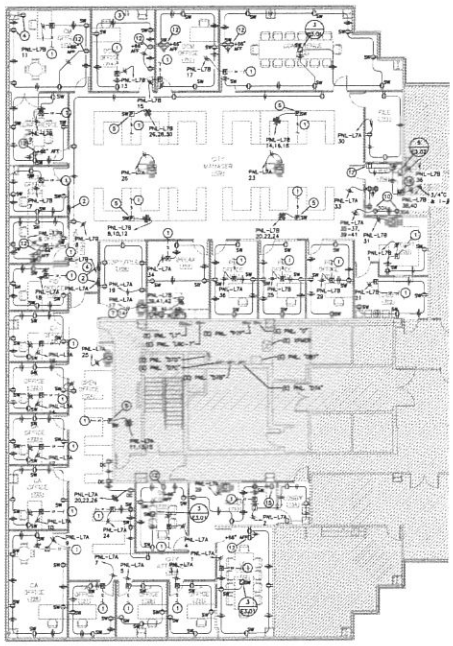
SHEET NO. E0.00

08/08/16 1:45:04 PM F:\15\383 CITY OF STOCKTON CITY HALL RELOCATION\EMCP\1ST & 7TH FLOOR\SHEETS\COVER SHEET.DWG



2 PROPOSED SIGNAL PLAN

SCALE: 1/8"=1'-0"



1 PROPOSED POWER PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY (E) PANEL BOARD SCHEDULE AND UPDATE SCHEDULES. CONTRACTOR SHALL ALSO INFORM CITY OF DISCREPANCIES.
2. CONTRACTOR SHALL INVESTIGATE EXISTING BLANKED AND/OR ABANDONED SWITCHBOXES IN VICINITY OF NEW DEVICES SHOWN. IF EXISTING ABANDONED BACK-BOXES ARE WITHIN 36" OF NEW DEVICE LOCATION, CONTRACTOR SHALL COORDINATE THE RE-USE OF THE EXISTING BACK-BOX WITH THE NEW DEVICE. IF EXISTING ABANDONED BACK-BOXES ARE NOT WITHIN 36" OF NEW DEVICES LOCATION SHALL BE CONSIDERED FOR USE AND COORDINATED WITH THE CITY FOR GENERAL PURPOSE OUTLETS ONLY.
3. ALL UNUSED BOXES IN WALL AND FLOOR SHALL BE REMOVED BOTH AND .25" IN THEIR ENTIRETY FOR FUTURE USE.
4. ALL COAXIAL CABLING SHALL BE TAN TO THE DEVICE ALLOWING FOR FUTURE CABLE TV SERVICE.
5. FIRE ALARM DEVICES TO BE COORDINATED WITH FIRE ALARM VENDOR. SHOP DRAWINGS SHALL BE SUBMITTED TO EJOA FOR APPROVAL PRIOR TO INSTALLATION.

PLAN NOTES:

1. CAT 5E CABLE TO BE ROUTED FROM PLUG LOAD CONTROLLER TO ROOM LIGHTING CONTROLLER.
2. CONTRACTOR SHALL FRAME WALL TO 6" DEPTH MIN TO ALLOW FOR FLUSH MOUNT PANEL +/- DOOR N DOOR FOYER.
3. (E) RECEPT TO REMAIN ON (E) CIRCUIT CONTRACTOR SHALL NOT EXTEND (E) CIRCUIT TO NEW ELECTRICAL DEVICES.
4. INSTALL (N) DEVICE IN (E) RACK-BOX.
5. PROVIDE (N) DUAL CHANNEL POWER POLE - WIREMOLD 1507P OR APPROVED EQUAL. CHANNEL TO BE USED FOR POWER AND DATA DROP TO (N) OFFICE FURNITURE. ALL CUBICLES SHALL HAVE 2 DEDICATED DATA DROPS TO EACH. CONTRACTOR SHALL VERIFY LOCATION WITH CUSTOMER PRIOR TO ROUGH IN.
6. (N) EF RACK SHALL BE MOUNTED AS HIGH AS POSSIBLE WHILE STILL BEING UNDER THE PROPOSED CEILING GRID.
7. DEDICATED CIRCUIT SHALL BE PROVIDED AT NOTED LOCATION. DEDICATED CIRCUIT SHALL HAVE DEDICATED GROUND AND NEUTRAL (#) 3.
8. CONTRACTOR SHALL VERIFY RECEPTACLE HEIGHT AND LOCATION WITH OWNER PRIOR TO ROUGH IN.
9. PROVIDE CABLE SUPPORT FOR ALL DATA AND SIGNAL CABLES TO SUSPENDED BASKET TRAY SYSTEM. SEE DETAIL 2 ON SHEET E3.01 FOR CABLE SUPPORT DETAIL.
10. COORD. LOCATION OF 2-30AMP RECEPTACLES WITH CITY PRIOR TO ROUGH IN. COORDINATE NEAR CONFIGURATION WITH POWER PRIOR TO ROUGH IN.
11. CARD READER TO BE INSTALLED AT DOOR LOCATION. VERIFY LOCATION WITH CUSTOMER PRIOR TO ROUGH IN. CARD READER SHALL BE IN KIND WITH EXISTING CARD READERS IN THE BUILDING PROVIDE 4" SQUARE BACK-BOX w/ 3/4"C RISER TO INTERSTITIAL CEILING SPACE. CARD READER SHALL CONNECT TO NEW ENERGIE PANEL SHOWN ON DRAWING
12. PROVIDE BACKING TO SUPPORT 175LBS. COORDINATE WITH ARCHITECT
13. RELOCATED FIRE ALARM NOTIFICATION DEVICES AS SHOWN ON SHEET E0.11 TO BE RELOCATED TO LOCATION SHOWN ON DRAWING. COORDINATE WITH FIRE ALARM VENDOR.
14. CONTRACTOR SHALL COORDINATE RECEPTACLE CONFIGURATION TYPE. CUSTOMER PRINTER MAY REQUIRE SPECIAL RECEPTACLE. COORDINATE WITH CUSTOMER PRIOR TO ROUGH IN.
15. (N) RECEPTACLE TO BE INSTALLED 12" ABOVE COUNTER. COORDINATE LOCATION WITH CUSTOMER PRIOR TO ROUGH IN.
16. INSTALL NON FUSED DISCONNECT 30A IN CEILING FOR (N) A/C UNIT. PROVIDE 3/4"C FOR CONTROLS. LOCATION TO BE DETERMINED BY CUSTOMER.
17. INSTALL 3/4"C TO LOCATION TO BE DETERMINED BY CUSTOMER FOR THERMOSTAT.
18. INSTALL (N) ENERGIE PANEL TO TIE INTO EXISTING SYSTEM. CONNECT TO 5TH FLOOR PANEL TO PROVIDE INCOMING SIGNAL ALL NEW CARD READERS INSTALLED ON THIS FLOOR SHALL CONNECT TO THIS PANEL. COORDINATE WITH BUILDING OWNER ON PANEL REQUIREMENTS. PROVIDE 20A CIRCUIT EXTENDED FROM LOCAL BRANCH. CONTRACTOR SHALL ENSURE THAT CIRCUIT WILL NOT EXCEED 1500VA AFTER ADDITION.

REV. NO.	DESCRIPTION	DATE	BY	APPVD
1	ADDENDUM 1	8/1/2016	CMW	SV

CITY OF STOCKTON
PUBLIC WORKS

BID SET

LDA partners

CITY HALL RELOCATION CITY CLERK AND CITY MANAGER

7TH FLOOR PROPOSED POWER AND SIGNAL PLAN

SHEET NO.
E1.71
OF SHEETS
PROJECT NO.
17112.00

Addendum 1

LDA Partners
DESIGNERS & ARCHITECTS

Project: **City of Stockton – City Hall Relocation: City Clerk, City Manager, and City Attorney**
Project No: **PUR 15-033**
Date: **8/11/16**

From Architect: LDA Partners, LLP
222 Central Court
Stockton, CA 95204

Phone: 209.943.0405
E-mail: prosado@ldapartners.com

This Addendum forms a part of the Contract Documents and modifies the original issued August 27, 2015 as noted below. Acknowledge receipt of this addendum in submittal of bid.

The Following Changes, deletions, additions, and/or alterations in, on and to the Drawings and Specifications shall apply to proposals made for and to the execution of the various parts of the work affected thereby.

Careful Note of This Addendum shall be taken by all parties of interest so that the proper allowance may be made in all computations, estimates and contracts, and all trades affected shall be fully advised in the performance of the work which will be required of them.

In Case of Conflict between Drawings, Specifications, and this Addendum, this Addendum shall govern. This Addendum supersedes all previous Drawings, Specifications, and Instructions pertaining to these items.

I. DRAWING CHANGES, SHEETS & SKETCHES ISSUED WTH THIS ADDENDUM:
   a. G0.00: Revised General Notes.
   b. A9.00: Revised door information and hardware related to door 131A.
   c. E0.00: Revised note.
   d. E1.71: Revised Plan Notes and identify location of panel.

II. SPECIFICATIONS CHANGES:
   a. None

III. NEW DRAWINGS ISSUED WITH THIS ADDENDUM:
   a. None

IV. NEW SPECIFICATIONS ISSUED WITH THIS ADDENDUM:
   a. Provided spec section 21 00 00

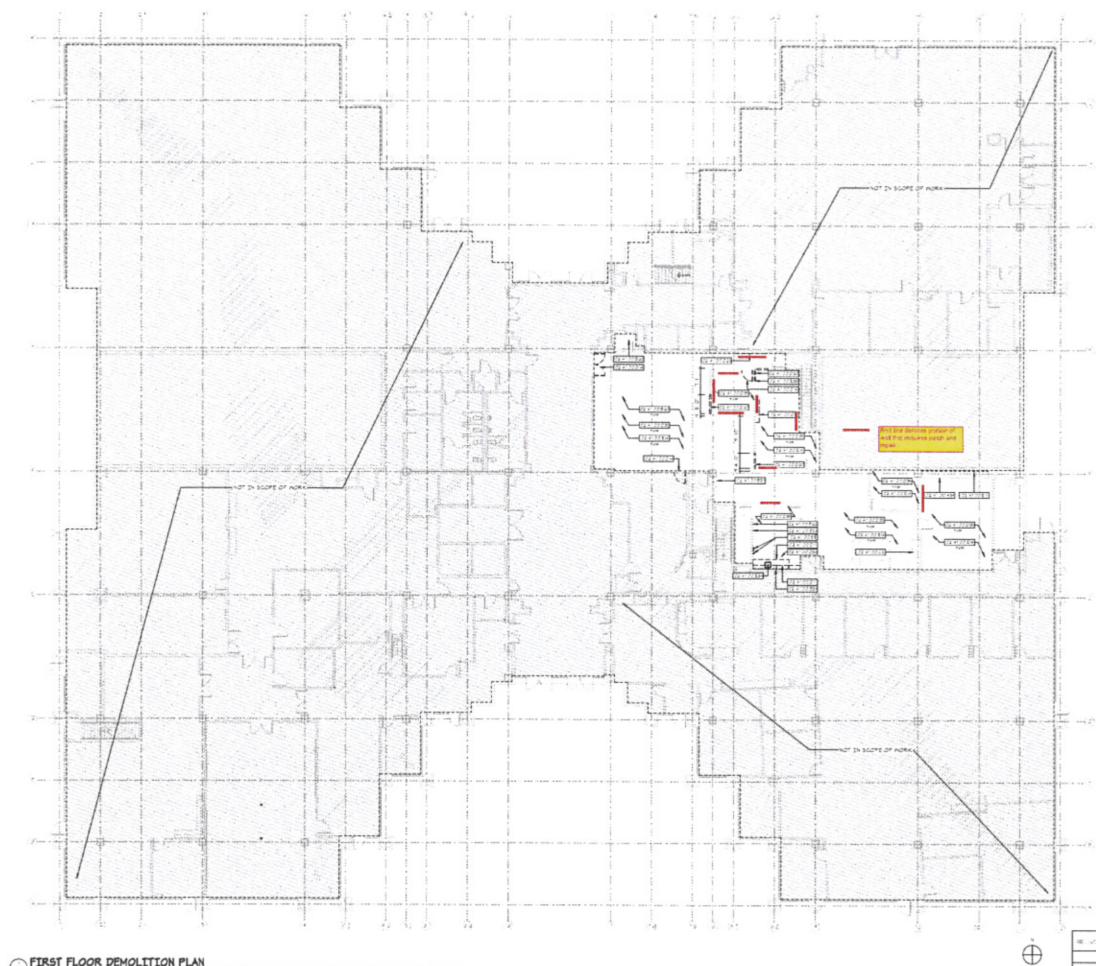
V. SUBSTITUTIONS: Note that any subsequent costs from work or design changes from the proposed bidder substitution to the project shall be the responsibility of said bidder. All substitutions shall be completed to the satisfaction of the Owner.

a. None

VI. CLARIFICATION:

1. The fire sprinkler/protection system will be design/build. See added spec section 21 00 00.
2. Wall touchup locations are provided on PUR_15-033_City Hall wall touchup.pdf document.

End of Addendum 1



FIRST FLOOR DEMOLITION PLAN

LEGEND

EXISTING WALL TO REMAIN
EXISTING DOOR TO REMAIN
EXISTING WALL TO BE REMOVED
EXISTING DOOR TO BE REMOVED
NOT IN SCOPE OF WORK

GENERAL DEMO. NOTES

1. CONTRACTOR SHALL NOT CUT OR ALTER STRUCTURAL MEMBERS UNLESS INDICATED TO DO SO IN THE CONTRACT DOCUMENTS OR WRITTEN APPROVAL RECEIVED FROM THE ARCHITECT.
2. UNLESS OTHERWISE NOTED ON DRAWINGS ALL MATERIAL INDICATED TO BE REMOVED SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DISPOSED OUTSIDE THE PROJECT SITE.
3. CONTRACTOR TO CUT, CAP, AND REMOVE EXISTING UTILITIES AS SHOWN. IF UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED, IMMEDIATELY NOTIFY THE ARCHITECT. CEASE OPERATION IN THE IMMEDIATE AREA AND DO NOT DISTURB UNTIL THE ARCHITECT DIRECTS THE DISPOSITION OF SUCH UTILITY.
4. DEMOLITION SHOWN IS DIAGRAMMATIC AND GENERAL. PERFORM ALL DEMOLITION SHOWN AND REQUIRED FOR THE CONSTRUCTION OF THE PROJECT INCLUDING ALL ITEMS IN THE WAY OF NEW WORK WHETHER OR NOT SPECIFICALLY SHOWN.
5. CONTRACTOR TO COORDINATE EXTENTS OF DEMOLITION W/ ITEM INDICATED AS NEW CONSTRUCTION.
6. PATCH, REPAIR, AND TEXTURE ANY AND ALL WALL DAMAGE, WALL ANCHOR HOLES, ETC.
7. REFER TO PLUMBING DRAWINGS FOR DEMOLITION RELATIVE TO PLUMBING SCOPE OF WORK.
8. REFER TO MECHANICAL DRAWINGS FOR DEMOLITION RELATIVE TO HVAC SCOPE OF WORK.
9. REFER TO ELECTRICAL DRAWINGS FOR DEMOLITION RELATIVE TO ELECTRICAL SCOPE OF WORK.

KEYNOTES

02 41 00.A04	EXISTING COUNTER TOP TO REMAIN
02 41 00.B20	PATCH, REPAIR & PAINT EXISTING WALLS
02 41 00.B22	REMOVE WALL PAPER
02 41 00.B87	REMOVE AND REPLACE ELEC. PANEL TRIM
02 41 00.B88	PATCH, REPAIR, AND TEXTURE GYP. BD. AT WALL PAPER REMOVAL LOCATIONS
02 41 00.C3	SALVAGE ITEM. RE-USE IN NEW WORK
02 41 00.D11	DEMOLISH CASEWORK
02 41 00.D14	DEMOLISH DOOR AND FRAME
02 41 00.D16	DEMOLISH DOOR, FRAME, AND HARDWARE
02 41 00.D20	DEMOLISH PARTITION
02 41 00.D28	DEMOLISH MARKER BOARD
02 41 00.D35	DEMOLISH CARPET. CLEAN & PREPARE FLOOR SURFACE WITHIN ROOM
02 41 00.D36	DEMOLISH VINYL FLOORING & PREPARE FLOOR SURFACE WITHIN ROOM
02 41 00.E9	DEMOLISH SOAP DISPENSER
02 41 00.E11	DEMOLISH PLUGMOLD RACEWAY
02 41 00.E14	DEMOLISH RUBBER WALL BASE
02 41 00.E34	DEMOLISH SINK
02 41 00.E38	DEMOLISH POCKET DOOR AND FRAME

BID SET

LDA partners LLP

CITY HALL RELOCATION CITY CLERK AND CITY MANAGER

FIRST FLOOR DEMOLITION PLAN

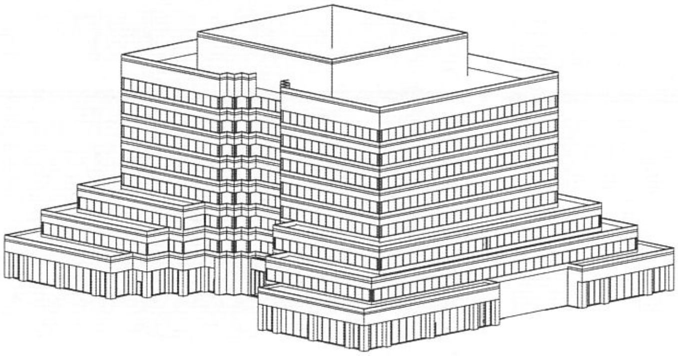
CITY OF STOCKTON
425 N. EL DORADO

REV. NO.	DESCRIPTION	DATE	BY	APP'D

SCALE: AS SHOWN
DESIGNED BY:
DRAWN BY:
CHECKED BY:
RECORD DWG:

APPROVED BY: DATE
CITY ENGINEER
STOCKTON, CALIFORNIA

SHEET NO.
A2.10
OF SHEETS
PROJECT NO.



PROPOSED PROJECT FOR

CITY OF STOCKTON

CITY HALL RELOCATION

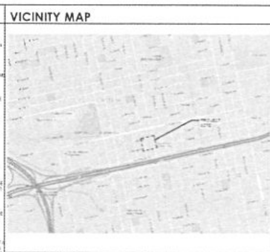
CITY CLERK, CITY ATTORNEY AND CITY MANAGER

400 EAST MAIN STREET, STOCKTON, CA

GENERAL NOTES

1. ON-SITE VERIFICATION OF ALL DIMENSIONS AND DETAILS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR FOR HIS INDIVIDUAL WORK. THE OWNER OR ARCHITECT SHALL BE NOTIFIED IF ANY DISCREPANCIES ARE FOUND PRIOR TO COMMENCING ANY WORK. THE RESPONSIBILITY FOR WORK COMPLETED WITHOUT PROPER NOTIFICATION SHALL BE BORN BY THE INDIVIDUAL CONTRACTOR INVOLVED.
2. THE CONTRACT DOCUMENTS INDICATE THE EXTENT AND APPROXIMATE LOCATION OF ELEMENTS OF THE BUILDING AND SITE. ALL CONDITIONS, LOCATIONS, DEVICES AND ELEMENTS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING THE WORK.
3. WORK PERFORMED IN CONNECTION WITH THESE CONTRACT DOCUMENTS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA), ALL APPLICABLE STATE AND LOCAL CODES, ORDINANCES AND ZONING REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. THIS PROJECT SHALL COMPLY WITH TITLE 24, 2013 CBC, CMC, CPC, CEC, BASED ON THE 2012 IBC, UMC, UPC, NEC, CALIFORNIA ENERGY CODE BASED ON THE 2013 CALIFORNIA ENERGY STANDARDS, AND CA GREEN BLDG CODE.
4. IT SHALL BE UNDERSTOOD THAT THE INTENT OF THESE CONSTRUCTION DOCUMENTS IS TO CONSTRUCT THE FACILITY IN ACCORDANCE WITH THE APPLICABLE CODES AND ORDINANCES. SHOULD ANY CONDITION BE UNCOVERED OR DEVELOP DURING THE EXECUTION OF THE DOCUMENTS WHICH IS NOT DEFINED HEREIN, THE CONTRACTOR SHALL CEASE WORK AND NOTIFY THE ARCHITECT AT ONCE.
5. THE TYPICAL DETAILS SHOWN IN THESE PLANS SHALL APPLY IN ALL SIMILAR CASES UNLESS SPECIFICALLY NOTED OTHERWISE. WHERE NO DETAIL IS SHOWN, CONSTRUCTION SHALL BE AS INDICATED FOR OTHER SIMILAR WORK AND OR APPLICABLE INDUSTRY PRACTICE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF INSTALLATION, INSPECTION AND FINAL APPROVAL OF ALL UTILITIES.
7. VERIFY ALL DIMENSIONS, EXISTING CONDITIONS AND METHODS OF CONSTRUCTION PRIOR TO START OF ANY WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
8. IT IS NOT THE INTENT OF THESE CONTRACT DOCUMENTS TO SEPARATE THE WORK INTO SUBTRADE DIVISIONS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO DIVIDE THE WORK AND ORGANIZE ALL WORK AS REQUIRED TO COMPLETE THE WORK AS INTENDED BY THESE DOCUMENTS.
9. SITE DEVELOPMENT AND GRADING SHALL PROVIDE ACCESS TO PRIMARY ENTRANCES AND NORMAL PATHS OF TRAVEL, AND SHALL INCORPORATE PEDESTRIAN RAMPS, CURB RAMPS, ETC. ALL RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1:12, OR AS NOTED ON THESE CONSTRUCTION DOCUMENTS. ANY PATH OF TRAVEL SHALL BE CONSIDERED A RAMP IF ITS SLOPE IS GREATER THAN 1 FT. RISE IN 20 FT. RUN (5%).
10. EACH PARKING FACILITY WHERE PARKING IS PROVIDED FOR THE PUBLIC, GUESTS OR EMPLOYEES SHALL PROVIDE ACCESSIBLE PARKING AND LOADING STALLS DESIGNATED SPECIFICALLY FOR HANDICAPPED PERSONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE COMMENCEMENT OF WORK. HE SHALL BE RESPONSIBLE FOR THE LOCATION AND PRESERVATION OF ALL SUCH FACILITIES IN THE AREA OF CONSTRUCTION, AND SHALL NOTIFY UTILITY COMPANIES 48 HOURS IN ADVANCE OF ANY CONSTRUCTION UNDERGROUND SERVICE ALERT 1-800-227-2600.
12. EACH PARKING SPACE RESERVED FOR PERSONS WITH PHYSICAL DISABILITIES SHALL BE IDENTIFIED BY A REFLECTORIZED SIGN PERMANENTLY POSTED IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE, CONSISTING OF A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT IN WHITE ON A BLUE BACKGROUND. THE SIGN SHALL NOT BE SMALLER THAN 70 SQ. IN. IN AREA AND WHEN POSTED IN A PATH OF TRAVEL, SHALL BE A MINIMUM HEIGHT OF 80 INCHES FROM THE BOTTOM OF THE SIGN TO THE PARKING SPACE FINISH GRADE. IN ADDITION A SIGN AS SPECIFIED IN TITLE 24 ACCESSIBILITY STANDARDS SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE. SAID SIGNS SHALL BE NOT LESS THAN 17 INCHES X 22 INCHES IN SIZE WITH LETTERING NOT LESS THAN 1 INCH HIGH.
13. PROVIDE A CLEAR AND LEVEL LANDING ON EACH SIDE OF AN EXIT DOOR. THE LANDING SHALL BE 60 INCHES IN LENGTH WHERE THE DOOR SWINGS AWAY FROM THE LANDING, AND 60 INCHES IN LENGTH IN THE DIRECTION OF DOOR SWING AS MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN THE CLOSED POSITION.
14. GENERAL DEMOLITION: WHENEVER EXISTING FACILITIES OR MATERIALS ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF WORK COVERED BY THE DRAWINGS AND SPECIFICATIONS, SAID FACILITIES AND MATERIALS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SAID FACILITIES OR MATERIALS SHALL BE EQUAL TO OR BETTER THAN THE ORIGINAL FACILITIES OR MATERIALS. THE FINISH PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE COUNTY AND ITS AGENTS.
15. CONTRACTOR TO INCLUDE AN ALLOWANCE FOR THE PURCHASE AND INSTALLATION OF 100 (HUNDRED) FT CAST ALUMINUM LETTERS. FINISH, WORDING AND FONT TO BE DETERMINED.
16. NO WORK SHALL COMMENCE AT THE PROJECT SITE BEFORE A BUILDING PERMIT IS FULLY EXECUTED AND AVAILABLE FOR POSTING AT THE JOB SITE.
17. CONSTRUCTION LIMITS: CONTRACTOR AND SUB-CONTRACTORS, WORKERS AND OTHER PERSONNEL RELATED TO THIS SCOPE OF WORK, SHALL BE CONFINED WITHIN THE AREAS DESIGNATED AS CONSTRUCTION LIMITS AS INDICATED BY THE DRAWINGS AND RELATED AREAS. AREAS BEYOND THIS SCOPE OF WORK SHALL BE OFF LIMITS AND THEIR USE SHALL BE PROHIBITED WITHOUT PRIOR AUTHORIZATION OF CITY OF STOCKTON. THE GENERAL CONTRACTOR SHALL VERIFY THESE LIMITS AND BE RESPONSIBLE TO INFORM THE APPROPRIATE PERSONNEL AND ENFORCE THESE LIMITS.
18. PROVIDE CONTINUOUS 16GA. X REQD. WIDTH (6" MIN) FLAT BACKING STRAP AT WALLS WITH WALL MOUNTED EQUIPMENT, CASEWORK AND/OR ACCESSORIES. TYPICAL UNLESS OTHERWISE NOTED.
19. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONTRACT DOCUMENTS AND THE EXISTING FIELD CONDITIONS AND SHALL AT ONCE REPORT TO THE ARCHITECT ANY ERROR, INCONSISTENCY, OR OMISSION HE MAY DISCOVER. THE CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK AT ANY TIME WITHOUT APPROVED CONTRACT DOCUMENTS OR WHERE REQUIRED APPROVED SHOP DRAWINGS, PRODUCT LITERATURE, DATA, SAMPLES OR INSTALLATION INSTRUCTIONS.
20. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT, WHERE APPLICABLE, FOR ANY WORK DONE WITHIN THE RIGHT OF WAY OR EASEMENTS FROM THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS IN ADVANCE OF COMMENCEMENT OF THE WORK OR AS REQUIRED BY SAID PERMITS.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, FITTING, OR PATCHING THAT MAY BE REQUIRED TO COMPLETE THE INTENT OF THESE CONSTRUCTION DOCUMENTS, TO MAKE ITS SEVERAL PARTS FIT TOGETHER PROPERLY. THE CONTRACTOR SHALL PATCH ARCHITECTURAL FINISHES AS NECESSARY TO ACCOMPLISH WORK DEFINED IN STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND ARCHITECTURAL DRAWINGS. EXISTING FIELD CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AND ACCEPTED AS CONDITIONS OF THIS SCOPE OF WORK.
22. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PG&E AND/OR SERVICE PROVIDER FOR ANY NEW SERVICE INSTALLATIONS. THE CONTRACTOR SHALL COORDINATE THE SHUTDOWN OF THE FACILITIES WITH THE OWNER FOR AS MINIMAL DURATION AS POSSIBLE. INTERCEPT THE EXISTING SERVICE CONDUIT, EXTEND IT TO NEW TRANSFORMERS AND PAD (TO BE INSTALLED BY CONTRACTOR) AND EXTEND SECONDARY CONDUITS TO THE NEW SWITCHBOARD. COORDINATE WITH THE OWNER TO VERIFY LOCATIONS. PROVIDE TRAFFIC BARRIER POSTS PER PG&E REQUIREMENTS.
23. CONTRACTOR SHALL FLUSH ALL WATER, SEWER, AND DRAIN LINES PRIOR TO HOOK UP.
24. DIMENSIONS SHALL BE MEASURED TO FACE OF FRAMING U.N.O.
25. PROVIDE 2% SLOPE AWAY FROM THE BUILDING FOR 10'-0" AT FRONT AND SIDES.
26. NO DRAINAGE ACROSS OR ONTO ADJACENT PROPERTY.
27. [illegible]
28. CONTRACTOR TO PROTECT FLOORS, WALLS, CEILINGS AND OTHER FINISHES AND ELEMENTS OF THE EXISTING BUILDING. CONTRACTOR TO PATCH, REPAIR, AND PAINT/FINISH ANY DAMAGE CAUSED TO EXISTING BUILDING ELEMENTS AT NO ADDITIONAL COST TO THE OWNER.

VICINITY MAP



APPLICABLE CODES

2013 CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24 AS AMENDED THROUGH AUGUST 1, 2012
PART 1 CALIFORNIA ADMINISTRATIVE CODE
PART 2 CALIFORNIA BUILDING CODE (VOLUMES 1 AND 2) W/ APPROVED DSA ACCESS COMPLIANCE EMERGENCY REGULATIONS PACKAGE ON JULY 18 2012
PART 3 CALIFORNIA ELECTRICAL CODE
PART 4 CALIFORNIA MECHANICAL CODE
PART 5 CALIFORNIA PLUMBING CODE
PART 6 CALIFORNIA ENERGY CODE
PART 9 CALIFORNIA FIRE CODE
PART 11 CALIFORNIA GREEN BUILDING CODE
PART 12 CALIFORNIA REFERENCE STANDARDS CODE
TITLE 19 PUBLIC SAFETY - STATE FIRE MARSHALL REGULATIONS

2013 NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS

2013 NFPA 14 INSTALLATION OF STANDPIPE AND HOSE SYSTEMS

2013 NFPA 17 DRY CHEMICAL EXTINGUISHING SYSTEMS

2013 NFPA 17A WET CHEMICAL EXTINGUISHING SYSTEMS

2013 NFPA 20 INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

2013 NFPA 22 WATER TANKS FOR PRIVATE FIRE PROTECTION

2013 NFPA 24 INSTALLATION OF PRIVATE FIRE SERVICE MAINS

2014 NFPA 25 INSPECTION, TESTING AND MAINTENANCE OF WATER BASED FIRE PROTECTION SYSTEMS

2013 NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE

CONTACTS

OWNER:
City of Stockton
ADDRESS:
425 N El Dorado Street
Stockton, CA 95202
PHONE: 209-937-8862
CONTACT: Janice Miller
EMAIL: janice.miller@stocktonca.gov

ARCHITECT:
LDA Partners, LLP
ADDRESS:
4 S. Central Ct
Stockton, CA 95204
PHONE: 209-943-0405 **FAX:** 209-943-0415
CONTACT: Peter Rosado, AIA
EMAIL: prosado@ldapartners.com
CONTACT: Jose Ochoa
EMAIL: jochoa@ldapartners.com

STRUCTURAL ENGINEER:
LPFF
ADDRESS:
1509 Eureka Road, Suite 230
Roseville, CA 95661
PHONE: 916-772-7688 **FAX:** 209-724-0152
CONTACT: Tim Mathewson
EMAIL: tim.mathewson@lsff.com

MECHANICAL ENGINEER:
Capital Engineering, Inc.
ADDRESS:
11020 Sun Center Drive, Suite 100
Rancho Cordova, CA 95670
PHONE: 916-851-3500
CONTACT: Kevin Dillman
EMAIL: kdillman@capital-engineering.com

PLUMBING ENGINEER:
Capital Engineering, Inc.
ADDRESS:
11020 Sun Center Drive, Suite 100
Rancho Cordova, CA 95670
PHONE: 916-851-3500
CONTACT: Kevin Dillman
EMAIL: kdillman@capital-engineering.com

ELECTRICAL ENGINEER:
Miller Pozzoni and Associates, Inc.
ADDRESS:
400 10th Street, Suite #7
Modesto, CA 95354
PHONE: 209-575-0212 **FAX:** 209-575-0413
CONTACT: Kevin Pozzoni
EMAIL: kpozzoni@mpa-e.com
CONTACT: Shawn Vincent
EMAIL: svincent@mpa-e.com

PROJECT DATA

REFERENCE	DESCRIPTION	INTERPRETATION
DESCRIPTION		
SCOPE	INTERIOR TENANT IMPROVEMENT OF EXISTING FIRST AND SEVENTH FLOORS	INTERIOR OFFICE REMODEL CONSISTING OF DEMOLITION OF WALLS, DOORS, WINDOWS, CASEWORK, PLUMBING FIXTURES, AND CEILINGS. CONSTRUCTION OF NEW WALLS, DOORS, WINDOWS, CEILINGS, CASEWORK AND PLUMBING FIXTURES FOR OFFICE SPACE TO CREATE NEW GOVERNMENT OFFICE SUITES FOR CITY HALL WITHIN EXISTING TENANT SUITES ON THE FIRST AND SEVENTH FLOORS.
LOCATION	400 E. MAIN STREET STOCKTON, CA 95202	
ZONING	CD	COMMERCIAL DOWNTOWN
APN	149-150-24	
GENERAL INFORMATION		
	1ST FLOOR AREA	4,070 SF (WITHIN EXISTING SPACE)
	7TH FLOOR AREA	8,486 SF (WITHIN EXISTING SPACE)
	TOTAL BUILDING AREA	12,546 SF (WITHIN EXISTING SPACE)
OCCUPANCY		
CBC 303.1	GROUP B	OFFICE
CBC 903.2	AUTOMATIC FIRE SPRINKLERS	YES (EXISTING)
CBC TABLE 601	CONSTRUCTION TYPE	TYPE IB

ABBREVIATIONS

ABV	ABOVE	FE	FIRE EXTINGUISHER	PLAM	PLASTIC LAMINATE
ACOUS	ACOUSTICAL	FEC	FIRE EXTINGUISHER CABINET	PLAS	PLASTER
ACT	ACOUSTICAL CEILING TILE	FG	FINISH GROUP	PLYWD	PLYWOOD
AD	AREA DRAIN	FH	FIRE HYDRANT	PR	PAIR
ADJ	ADJUSTABLE	FHC	FIRE HOSE CABINET	PT	PAINT
AFF	ABOVE FINISH FLOOR	FIN	FINISH	PTD	PAINTED
ALT	ALTERNATE	FLR	FLOOR	R	RISER
ALUM	ALUMINUM	FLUOR	FLOURESCENT	RAD	RADIUS
APPROX	APPROXIMATE	FRP	FIBER REINFORCED PLASTIC	RCP	REFLECTED CEILING PLAN
ARCH	ARCHITECT			RD	ROOF DRAIN
B.O.	BOTTOM OF	FT	FOOT OR FEET	RE	REFER
BALC	BALCONY	FUR	FURRING	REF	REFRIGERATOR
BD	BOARD	G.S.M.	GALVANIZED SHEET METAL	REINF	REINFORCED
BET	BETWEEN	GAL	GALLON	REQD	REQUIRED
BLDG	BUILDING	GALV	GALVANIZED	RESIL	RESILIENT
BLKG	BLOCKING	GB	GRAB BAR	RM	ROOM
BLW	BELOW	GC	GENERAL CONTRACTOR	RO	ROUGH OPENING
BM	BEAM	GL	GLASS	RTU	ROOF TOP UNIT (MECH)
BOT	BOTTOM	GND	GROUND	S	SOUTH
BRKT	BRACKET	GWB	GYPSUM BOARD	SAFB	SOUND ATTENUATION FIBER BATT
BLKHD	BULKHEAD	GYP	GYPSUM	SC	SCUPPER
BUR	BUILT UP ROOF	H.W.H.	HOT WATER HEATER	SCHED	SCHEDULE
C.G.	CORNER GUARD	HDWD	HARDWOOD	SEAL	SEALANT
CAB	CABINET	HDWR	HARDWARE	SECT	SECTION
CALK	CAULKING	HM	HOLLOW METAL	SF	SQUARE FOOT
CEM	CEMENT	HORIZ	HORIZONTAL	SHT	SHEET
CER	CERAMIC	HR	HOUR	SIM	SIMILAR
CJ	CONTROL JOINT	HT	HEIGHT	SPEC	SPECIFICATION
CLG	CEILING	ID	INNER DIAMETER	SQ	SQUARE
CLOS	CLOSET	INCAN	INCANDESCENT	SS	STAINLESS STEEL
CLR	CLEAR	INSUL	INSULATION	STD	STANDARD
CO	CASED OPENING	INT	INTERIOR	STL	STEEL
COL	COLUMN	JAN	JANITOR	STOR	STORAGE
CONC	CONCRETE	JST	JOIST	STRUCT	STRUCTURAL
CONT	CONTINUOUS	JT	JOINT	SUSP	SUSPENDED
CPT	CARPET	LAM	LAMINATE	SYM	SYMMETRICAL
CT	CERAMIC TILE	LAV	LAVATORY	T	TREAD
CTR	CENTER	LBS	POUNDS	T&G	TONGUE & GROOVE
DBL	DOUBLE	LDG	LANDING	TEL	TELEPHONE
DET	DETAIL	LT	LIGHT	TER	TERRAZZO
DIA	DIAMETER	MAX	MAXIMUM	THK	THICK
DIM	DIMENSION	MECH	MECHANICAL	THR	THRESHOLD
DN	DOWN	MEMB	MEMBRANE	TO	TOP OF
DR	DOOR	MFR	MANUFACTURER	TYP	TYPICAL
DS	DOWN SPOUT	MIN	MINIMUM	UC	UNDERCUT
DW	DISHWASHER	MISC	MISCELLANEOUS	UNFIN	UNFINISHED
DWG	DRAWING	MO	MASONRY OPENING	UNO	UNLESS NOTED OTHERWISE
EX	EXISTING	MTD	MOUNTED	UON	UNLESS OTHERWISE NOTED
E	EAST	MTL	METAL	UTL	UTILITY
EA	EACH	(N)	NEW	VCT	VINYL COMPOSITION TILE
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	N	NORTH	VERT	VERTICAL
ELEC	ELECTRIC	NIC	NOT IN CONTRACT	VIF	VERIFY IN FIELD
ELEV	ELEVATION	NO	NUMBER	VTR	VENT TERMINATION PIPE
EMER	EMERGENCY	NOM	NOMINAL	VWC	VINYL WALL COVERING
ENCL	ENCLOSURE	NTS	NOT TO SCALE	W	WEST
EOS	EDGE OF SLAB	O/F	OVERFLOW PIPE	W/	WITH
EQ	EQUAL	OA	OVERALL	W/O	WITHOUT
EQUIP	EQUIPMENT	OC	ON CENTER	WC	WATERCLOSET
ETR	EXISTING TO REMAIN	OD	OUTSIDE DIAMETER	WIN	WINDOW
EW	EACH WAY	OFF	OFFICE	WP	WATERPROOF
EXP. JT	EXPANSION JOINT	OH	OPPOSITE HAND	WS	WETSTACK
EXST	EXISTING	OPG	OPENING	WSCT	WAINSCOT
F.O.	FACE OF	OPP	OPPOSITE	WT	WEIGHT
FA	FIRE ALARM	PART	PARTITION		
FAP	FIRE ANNUNCIATOR PANEL	PERIM	PERIMETER		
FD	FLOOR DRAIN	PG	PAINT GRADE		

SHEET INDEX

SHT. NO.	SHEET TITLE
GENERAL	
G0.00	COVER SHEET
G1.00	CALGREEN MANDATORY MEASURES
G2.01	FIRST FLOOR LIFE SAFETY PLAN
G2.07	SEVENTH FLOOR LIFE SAFETY PLAN
G3.00	SIGNAGE DETAILS
G4.00	ACCESSIBILITY STANDARDS – DETAILS
ARCHITECTURAL	
A0.10	FIRST FLOOR DEMOLITION PLAN
A0.11	FIRST FLOOR DEMOLITION CEILING PLAN
A0.70	SEVENTH FLOOR DEMOLITION PLAN
A0.71	SEVENTH FLOOR DEMOLITION CEILING PLAN
A1.10	FIRST FLOOR PLAN
A1.13	FIRST FLOOR DIMENSION PLAN - QUADRANT C
A1.14	FIRST FLOOR ANNOTATION FLOOR PLAN - QUADRANT C
A1.70	SEVENTH FLOOR DIMENSION FLOOR PLAN
A1.71	SEVENTH FLOOR ANNOTATION FLOOR PLAN
A4.11	FIRST FLOOR REFLECTED CEILING PLAN - QUADRANT C
A4.70	SEVENTH FLOOR REFLECTED CEILING PLAN
A9.00	DOOR AND WINDOW SCHEDULES
A9.01	ROOM FINISH SCHEDULE
AD.01	DETAILS
STRUCTURAL	
S1.0	GENERAL NOTES & SHEET INDEX
S2.1	OVERALL FIRST FLOOR PLAN
S2.2	OVERALL 7TH FLOOR PLAN
S2.4	1ST FLOOR PLAN QUADRANT C
S3.1	1ST FLOOR REFLECTED CEILING PLAN QUADRANT C
S3.2	7TH FLOOR REFLECTED CEILING PLAN
S4.1	DETAILS
S4.2	DETAILS
S4.3	DETAILS
MECHANICAL	
M0.10	HVAC LEGENDS, SCHEDULES AND NOTES
M0.11	HVAC LEGENDS, SCHEDULES AND NOTES
M0.12	TITLE 24 DOCUMENTATION
M0.13	TITLE 24 DOCUMENTATION
M1.10	1ST FLOOR HVAC DEMOLITION PLAN
M1.70	7TH FLOOR HVAC DEMOLITION PLAN
M2.10	1ST FLOOR OVERALL ZONING PLAN
M2.12	1ST FLOOR HVAC PLAN - QUADRANT C
M2.71	7TH FLOOR OVERALL ZONING PLAN
M2.72	7TH FLOOR HVAC PLAN
M5.11	HVAC DETAILS
M7.11	HVAC CONTROL DIAGRAMS

SHT. NO.	SHEET TITLE
PLUMBING	
P0.10	PLUMBING LEGENDS, SCHEDULES AND NOTES
P1.10	1ST FLOOR PLUMBING PLAN
P1.12	1ST FLOOR PLUMBING PLAN - QUADRANT C
P1.70	7TH FLOOR PLUMBING PLAN
ELECTRICAL	
E0.00	COVER SHEET
E0.10	OVERALL 1ST FLOOR PLAN
E0.70	OVERALL 7TH FLOOR PLAN
ED1.11	1ST FLOOR DEMOLITION PLANS
ED1.71	7TH FLOOR DEMOLITION POWER AND SIGNAL PLAN
ED2.71	7TH FLOOR DEMOLITION LIGHTING PLAN
E1.11	1ST FLOOR QUADRANT C POWER AND SIGNAL
E1.71	7TH FLOOR PROPOSED POWER AND SIGNAL PLAN
E2.11	1ST FLOOR QUADRANT C LIGHTING PLAN
E2.71	7TH FLOOR PROPOSED LIGHTING PLAN NORTH SECTION
E2.72	7TH FLOOR PROPOSED LIGHTING PLAN SOUTH SECTION
E3.01	DETAILS
E3.02	DETAILS
E3.03	PANEL SCHEDULES
E7.04	CALIFORNIA TITLE 24
E7.05	CALIFORNIA TITLE 24

LEGEND

GRID LINE		DOOR REFERENCE NUMBER	
ELEVATION REFERENCE – DETAIL NUMBER – SHEET NUMBER		RATED DOOR REFERENCE NUMBER	
SECTION REFERENCE – DETAIL NUMBER – SHEET NUMBER		WINDOW / STOREFRONT REFERENCE NUMBER	
DETAIL REFERENCE – DETAIL NUMBER – SHEET NUMBER		FINISH MATERIAL TAG - REFER TO FINISHES LEGEND	
KEYNOTE REFERENCE – SEQUENCE NUMBER – CSI DIVISION NUMBER			
LEVEL NAME – ELEVATION HEIGHT MARKER – HEIGHT			
SPOT ELEVATION HEIGHT MARKER			
ROOM NAME – ROOM REFERENCE – NAME – NUMBER – AREA			
WALL TYPE REFERENCE			

BID SET

LDA partners LLP

CITY HALL RELOCATION CITY CLERK AND CITY MANAGER

COVER SHEET

CITY OF STOCKTON
425 N. EL DORADO

REV. NO.	DESCRIPTION	DATE	BY	APPR.
1	ADDENDUM 1	[illegible]	PR	PR

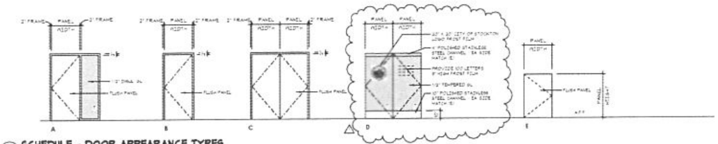
SCALE: AS SHOWN
DESIGNED BY: PR
DRAWN BY: [illegible]
CHECKED BY: PR
RECORD DWG: [illegible]

APPROVED BY: DATE
CITY ENGINEER
STOCKTON, CALIFORNIA

SHEET NO.
G0.00
OF SHEETS
PROJECT NO.
[illegible]

DOOR SCHEDULE

NO	TYPE	PANEL: DOOR WIDTH 1	PANEL: DOOR WIDTH 2	PANEL: HEIGHT	PANEL: THICKNESS	PANEL: CORE	FRAME	DETAILS: HEAD	DETAILS: JAMB	DETAILS: THRESHOLD / SILL	DETAILS: MULLION	FIRE RATING	HDWR GROUP	COMMENTS
1ST FLOOR														
[illegible]	D	3'-0"	3'-0"	7'-0"	1/2"	GLASS							1	(N) CASED ALUM FRAME W/ APPLIED STOP
[illegible]	E	3'-0"			1 3/4"	WOOD	ALUM		7/A9.01				2	
[illegible]													4	EXISTING DOOR
[illegible]													5	EXISTING DOOR
[illegible]													4	EXISTING DOOR
[illegible]													4	EXISTING DOOR
[illegible]													5	EXISTING DOOR
[illegible]													6	EXISTING DOOR
[illegible]													6	EXISTING DOOR
143	A	3'-0"		7'-0"	1 3/4"	WOOD		6/A9.01	5/A9.01				4	
144	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01			45 MIN	2	
146													3	EXISTING DOOR
2ND FLOOR														
103	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				1	CARD READER
104	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
105	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
106	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
107	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
108	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				3	
110	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01			45 MIN	1	CARD READER
111	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				2	
112A	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				3	
112B	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				3	
113	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
114	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
115	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				2	
116A	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
116B	C	3'-0"	3'-0"	7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				4	
117	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
119	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
120	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
121	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
122	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
123	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
124	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				3	
125	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
126	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				2	
127	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
128	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
130	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				3	
131	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				2	
132	A	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	5/A9.01				8	
133	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				1	CARD READER
134	B	3'-0"		7'-0"	1 3/4"	WOOD	ALUM	6/A9.01	7/A9.01				8	



SCHEDULE - DOOR APPEARANCE TYPES

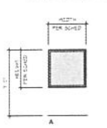
1/4" = 1'-0"

DOOR NOTES

1. ALL DOORS THAT ARE HAND ACTIVATED SHALL BE OPERABLE WITH A SINGLE EFFORT BY A LEVER TYPE HARDWARE, PANIC BARS, PUSH PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE
2. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 LBS. FOR EXTERIOR AND INTERIOR DOORS, SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED NOT TO EXCEED 15 LBS.
3. EXIT DOORS SHALL BE FURNISHED & INSTALLED WITH HARDWARE ALLOWING DOOR TO BE OPENED FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. PAIRS OF EXIT DOORS SHALL BE FURNISHED & INSTALLED WITH APPROVED AUTOMATIC FLUSH BOLTS ON ONE OF THE DOOR LEAVES AND NO SURFACE MOUNTED HARDWARE INSTALLED ON SAME LEAF. THE UNLATCHING OF BOTH DOOR LEAVES SHALL NOT REQUIRE MORE THAN ONE OPERATION.
4. FURNISH & INSTALL A READILY VISIBLE, DURABLE SIGN ABOVE EXIT DOORS STATING "THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS". THE SIGN SHALL BE IN LETTERS NOT LESS THAN 1 INCH HIGH ON A CONTRASTING BACKGROUND. WHEN UNLOCKED, THE EXIT DOOR(S) MUST BE FREE TO SWING WITHOUT OPERATION OF ANY LATCHING DEVICE.
5. THE FINISH OF ALL ALUMINUM STOREFRONT DOOR FRAMES SHALL BE CLEAR ANODIZED U.O.N.
6. SEE DETAIL 2/A9.00 FOR DOOR HARDWARE ACCESSIBILITY COMPLIANCE
7. SEE DETAIL 3/A9.00 FOR THRESHOLD ACCESSIBILITY COMPLIANCE
8. ALL GLAZING SHALL BE 1/2" INSULATED GLASS U.O.N.
9. HOLLOW METAL FRAME COLOR TO MATCH ADJACENT WALL COLOR
10. ALL GLAZING SHALL MEET THE REQUIREMENTS SET BY CBC 1A 1034.2.1
11. DOOR JAMB HINGE SIDES SHALL BE FRAMED 4 ½" FROM FRAMING, TYP. U.N.O.

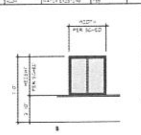
WINDOW SCHEDULE

NO	TYPE	SIZE: WIDTH	SIZE: HEIGHT	HEAD HEIGHT	DETAILS: HEAD	FRAME: MATERIAL	FRAME: FINISH	GLAZING: OPERABLE	GLAZING: FIXED	DETAILS: JAMB	DETAILS: SILL	COMMENTS
[illegible]	B	4'-0"	4'-0"	7'-0"	2/A9.01	ALUM	MATCH EXISTING		YES	2/A9.01		
[illegible]	B	4'-0"	4'-0"	7'-0"	4/A9.01	ALUM	MATCH EXISTING	YES		4/A9.01 SIM	4/A9.01	
[illegible]	B	4'-0"	4'-0"	7'-0"	4/A9.01	ALUM	MATCH EXISTING	YES		4/A9.01 SIM	4/A9.01	



1 WINDOW TYPE A

A9.00 1/4" = 1'-0"



2 WINDOW TYPE B

A9.00 1/4" = 1'-0"

WINDOW NOTES

A. ALL GLAZING SHALL COMPLY WITH SAFETY GLAZING REQUIREMENTS OF CHAPTER 24 OF THE CALIFORNIA STATE BUILDING CODE OF REGULATIONS AND THE CONSUMER PRODUCTS SAFETY COUNCIL THAT OCCUR IN THE FOLLOWING CONDITIONS:
1. INGRESS AND EGRESS DOORS (EXCEPT JALOUSIES)
2. FIXED AND SLIDING PANELS OF SLIDING DOOR ASSEMBLIES AND PANELS IN SWINGING DOORS OTHER THAN WARDROBE
3. FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE
4. GLAZING IN INDIVIDUAL FIXED OR OPERABLE PANEL OTHER THAT THOSE LOCATIONS DESCRIBED IN #3 ABOVE, THAT MEETS ALL THE FOLLOWING CONDITIONS:
   A. EXPOSED AREA OF AN INDIVIDUAL PANE GREATER THAT 9 SQ. FT.
   B. EXPOSED BOTTOM EDGE LESS THAN 18" ABOVE THE FLOOR
   C. EXPOSED TOP EDGE GREATER THAN 36" ABOVE THE FLOOR
   D. ONE OR MORE WALKING SURFACES WITHIN 36" HORIZONTAL OF THE PLANE OF THE GLAZING
B. ALL GLAZING SHALL MEET THE REQUIREMENTS SET BY CBC 1A 1034.2.1

SCHEDULE - HARDWARE GROUPS

HDW - QTY	HDW - TYPE	HDW - DESCRIPTION	HDW - FINISH	HDW - MFR
GROUP 1				
3	HINGE	FBB179 4 1/2 x 4 1/2	26D	ST
1	OFFICE LOCK	ND40PDSPA	626	BE
1	CYLINDER	20-0V1C4EB20 3HD	626	SC
1	DOOR CLOSER	7500	689	NO
1	WALL STOP	406	US32D	IV
1	CARD READER			HES
1	ELECTRIC STRIKE	9600-12 24D	630	HES
1	REMOTE BUTTON	RB1		SC
GROUP 2				
3	HINGE	FBB179 4 1/2 x 4 1/2	26D	ST
1	OFFICE LOCK	ND40PDSPA	626	BE
1	CYLINDER	20-0V1C4EB20 3HD	626	SC
1	WALL STOP	FS436CCV	626	IV
GROUP 3				
3	HINGE	FBB179 4 1/2 x 4 1/2	26D	ST
1	PASSAGE SET	ND10S RH	626	BE
1	DOOR CLOSER	7500	689	NO
1	WALL STOP	406	US32D	IV
GROUP 4				
6	HINGE	FBB168 4 1/2 x 4 1/2	26D	ST
2	CONCEALED VERT ROD EXIT	PL 2103 LBR 4903D	630	PR
1	CYLINDER	20-0V1C4EB20 3HD	626	SC
2	DOOR CLOSER	7500	689	NO
2	WALL STOP	406	US32D	IV
1	GASKETING	S44D		PE
1	ASTRAGAL	S772D		PE
1	PASSAGE SET	ND10S RH	626	BE
1	DUMMY LEVER	ND170	626	BE
GROUP 5				
3	HINGE	FBB179 4 1/2 x 4 1/2	26D	ST
1	PASSAGE SET	ND10S RH	626	BE
1	WALL STOP	406	US32D	IV
GROUP 6				
1	ALL HARDWARE BY GATE SUPPLIER			OO
GROUP 7				
2	CYLINDER	20-0V1C4EB20 3HD	626	SC
2	LOCKING PULL SETS	LP1101 OBU ADA 06	626	AA
2	DOOR CLOSER	20-0V4-T1 ARM 26 CLRS07046		JK
2	FLOOR PIVOT	20-510	626	JK
2	WALL STOP	406	US32D	IV
GROUP 8				
1	CYLINDER	20-0V1C4EB20 3HD	626	SC
GROUP 9				
1	CYLINDER	20-0V1C4EB20 3HD	626	SC
1	BLANK ROSETTE AT INTERIOR SIDE		626	SC

ABBREVIATIONS

ST STANLEY
BE STANLEY SECURITY SOLUTIONS INC (BE)
IV IVES
SC SCHLAGE
NO NORTON
OO OTHER
AA ASSA ABLOY
JK JACKSON

REV. NO.	DESCRIPTION	DATE	BY	APPR'D
1	ADDENDUM 1	[illegible]	PR	PR

BID SET

These documents are property of LDA Partners LLP and are not to be reproduced, changed or copied without the expressed written consent of LDA Partners LLP.

LDA partners

CITY HALL RELOCATION CITY CLERK AND CITY MANAGER

DOOR AND WINDOW SCHEDULES

CITY OF STOCKTON
425 N. EL DORADO

SCALE: AS SHOWN
DESIGNED BY: PR
DRAWN BY: HM
CHECKED BY: PR
RECORD DWG: [illegible]

APPROVED BY: DATE

CITY ENGINEER
STOCKTON, CALIFORNIA

SHEET NO.
A9.00
OF SHEETS
PROJECT NO.
STLDA 15

BIDDER'S CHECKLIST
CITY OF STOCKTON / PURCHASING DIVISION

Did You:

*X Complete the following bid documents (FROM THIS PACKET ONLY SUBMIT PAGES 15 to 18, along with any other requirements):

- *X Sign and notarize by jurat certificate the "Non-Collusion Affidavit" form. An "All-Purpose Acknowledgment" form will not be sufficient.
- *X Complete and sign the "Bid to be Submitted" form.
- *X Sign the "Bidder's Agreement" form. **Include (with bid) name and e-mail address for City contact, if different from signatoree**
- *X Proof of registration of self and any subcontractors with the State of California Department of Industrial Relations
- *X Recheck your math on each item extension and total column. Do not superimpose numerals on your bid forms. If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid.

*X Submit one (1) ORIGINAL of all bid documents. Additionally, submit one (1) CD with an electronic version of the bid documents.

*X Review all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

*X Deliver sealed bid to City Hall, City Clerk's Office (1st floor), 425 North El Dorado Street, Stockton, CA 95202, before **August 18, 2016, at 2:00 p.m.** Sealed bid shall be marked "Bid" and indicate project name, number, and bid opening date.
Please note that some overnight delivery services do not deliver directly to the City Clerk's Office. This could result in the bid arriving in the City Clerk's Office after the bid opening deadline and therefore not being accepted. NOTE: The Stockton City Clerk's office is closed from 12 noon to 1 p.m. for lunch.

A) CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS
B) (PUR 15-033)
C) AUGUST 18, 2016

CONTACT INFORMATION:

Information on Technical Data	Information on Bid Process/Clarification
Corey Chatfield, Economic Development (209) 937-8059 e-mail: Corey.Chatfield@stocktonca.gov	Alan Montanelli, Buyer (209) 937-8350 e-mail: Alan.Montanelli@stocktonca.gov

*If not completed as required, your proposal may be voided.
***DISCLAIMER**: The City does not assume any liability or responsibility for errors/omissions in any document transmitted electronically.
*THIS FORM IS FOR YOUR INFORMATION ONLY AND DOES NOT NEED TO BE SUBMITTED WITH YOUR PROPOSAL.

BID DOCUMENTS

A) BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS

B) PUR 15-033

C) AUGUST 18, 2016

COMPANY NAME: Haggerty Construction, Inc.

CONTACT NAME: Dominique Fryer

ADDRESS: 2747 Wigwam Drive, Stockton, CA 95205

TELEPHONE NUMBER: (209) 475-9898

EMAIL: dominique@haggertyconstruction.net

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
1	Plans Dated 7/14/16 - Specs Dated 7/21/16 - Addendum #1	$ 1 /ea.	$1,343,000.00
		$ N/A /ea.	$ N/A
		Subtotal	$1,343,000.0
		Sales Tax (9%)	$ N/A
		GRAND TOTAL	$1,343,000.0

The bidder warranties this equipment for a minimum period of 3 years.

Complete delivery will be made within 105 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

Haggerty Construction, Inc.
FIRM

2474 Wigwam Drive, Stockton, CA 95205
ADDRESS

SIGNED BY

Estimator
TITLE OR AGENCY

08/18/16
DATE

(209) 475-9898
TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) **CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS**

B) **PUR 15-033**

C) **AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

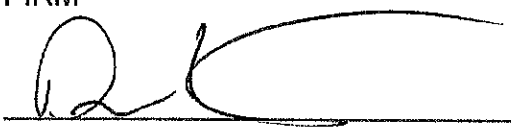
3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

Haggerty Construction, Inc.
FIRM

2474 Wigwam Drive, Stockton, CA 95205
ADDRESS


SIGNED BY

Estimator
TITLE OR AGENCY

dominique@haggertyconstruction.net
E-MAIL ADDRESS

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

HAGGERTY CONSTRUCTION, INC. being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

* See attached sheet

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____ being first duly sworn, deposes and says: That they are the _____ of _____ a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

* See Attached Sheet

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA, _____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____ who is the party making the foregoing bid; that the other partner, or partners, are _____ that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

* See Attached Sheet

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18th day of August, 2016,
Date *Month* *Year*
by (1) Dominique Fryer
(and (2) —),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

JENNIFER MORSE
Commission # 2105731
Notary Public - California
San Joaquin County
My Comm. Expires Apr 4, 2019

Signature _____
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non-Collusion Affidavit Document Date: —

Number of Pages: 1 Signer(s) Other Than Named Above: —

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18th (Date) day of August (Month), 2016 (Year), by

(1) Dominique Fryer

(and (2) _____),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

JENNIFER MORSE
Commission # 2105731
Notary Public - California
San Joaquin County
My Comm. Expires Apr 4, 2019

Signature _____
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Non-Collusion Affidavit Document Date: _____

Number of Pages: 1 Signer(s) Other Than Named Above: _____

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

CALIFORNIA JURAT WITH AFFIANT STATEMENT **GOVERNMENT CODE § 8202**

☒ See Attached Document (Notary to cross out lines 1–6 below)
☐ See Statement Below (Lines 1–6 to be completed only by document signer[s], *not* Notary)

Signature of Document Signer No. 1 *Signature of Document Signer No. 2 (if any)*

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

Subscribed and sworn to (or affirmed) before me on this 18th day of August, 2016
Date *Month* *Year*
by (1) Dominique Fryer
(and (2)),
Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

JENNIFER MORSE
Commission # 2105731
Notary Public - California
San Joaquin County
My Comm. Expires Apr 4, 2019

Signature
Signature of Notary Public

Seal
Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Non-Collusion Affidavit Document Date:
Number of Pages: 1 Signer(s) Other Than Named Above:

©2014 National Notary Association • www.NationalNotary.org • 1-800-US NOTARY (1-800-876-6827) Item #5910

HAGGERTY
CONSTRUCTION, INC

2474 Wigwam Drive, Suite A
Stockton, CA 95205
(209) 475-9898 p
(209) 451-0011 f
haggertyconstruction.net
info@haggertyconstruction.net
Lic. #944274

Thursday, August 18, 2016

Proof of DIR Registration

To whom it may concern;

Per question #1 on the Questions and Answers form on the City Hall Phase 2 TI project for the City of Stockton, we are verifying that Haggerty Construction, Inc. as well as all proposed subcontractors are currently registered and up to date with the Department of Industrial Relations. We would be happy to provide further proof upon request.

Kind regards,

Dominique Fryer

Estimator
The Team@ Haggerty Construction, Inc.

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Friday, August 26, 2016 10:02 AM
To: Corey Chatfield
Cc: Janice Miller; Eric Wohle; Gary Perata; Ryan Haggerty; Blake Wyatt; Peter Rosado
Subject: RE: LETTER OF INTENT
Attachments: 16152_Preliminary Schedule 082316_City Hall TI_HCI.pdf; 16152_Schedule of Values 082416_City Hall Stockton Phase 2 TI_HCI.pdf

Corey,

Per your request, please see attached Preliminary Schedule and Schedule of Values for the City Hall 1st and 7th Floor TI project. If you have any questions regarding any of this information please do not hesitate to let us know. We look forward to meeting with you at the Preconstruction meeting!

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Peter Rosado [mailto:PRosado@ldapartners.com]
Sent: Wednesday, August 24, 2016 3:39 PM
To: Dominique Fryer <Dominique@haggertyconstruction.net>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Cc: Janice Miller <Janice.Miller@stocktonca.gov>; Eric Wohle <EWohle@ldapartners.com>; Gary Perata <gary@haggertyconstruction.net>; Ryan Haggerty <ryan@haggertyconstruction.net>; Blake Wyatt <blake@haggertyconstruction.net>
Subject: RE: LETTER OF INTENT

Hi Corey,

I spoke with Dominique to go over the request below and why the deadlines for this information are important to the City. He said they will provide the info by the end of this week and certainly before 8/31. Haggerty

Schedule of Values

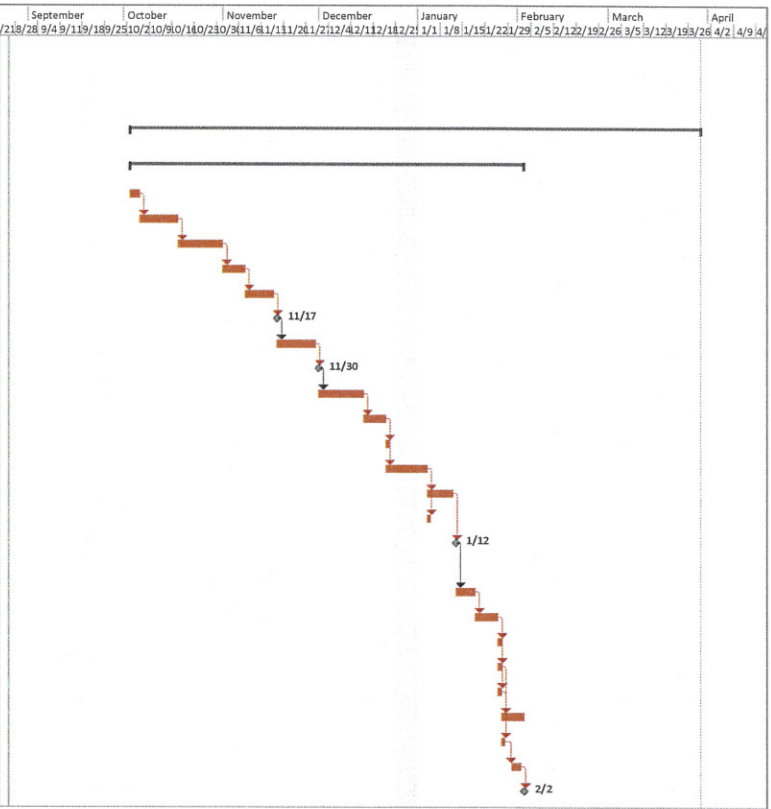
08/24/16

Schedule of Values
Totals; by Phase/Division; with Notes
Job# 16152 to 16152, Phase 2 to 2

Item/Cost Code		Description	Amount
16152 City Hall Stockton Phase 2			
2 Construction			
1000	General Requirement		132,553.99
2000	Site Work		56,323.73
3000	Concrete		2,166.30
5000	Metals		866.52
6000	Woods & Plastics		25,270.94
7000	Therm/Moist Project		8,259.01
8000	Doors & Windows		77,631.82
9000	Finishes		357,137.91
10000	Specialties		3,624.21
13000	Special Construction		60,244.72
15000	Mechanical & Plumbing		195,387.01
16000	Electrical		423,533.84
		Phase Total:	**1,343,000.00**
		Grand Total:	**1,343,000.00**

Notes:

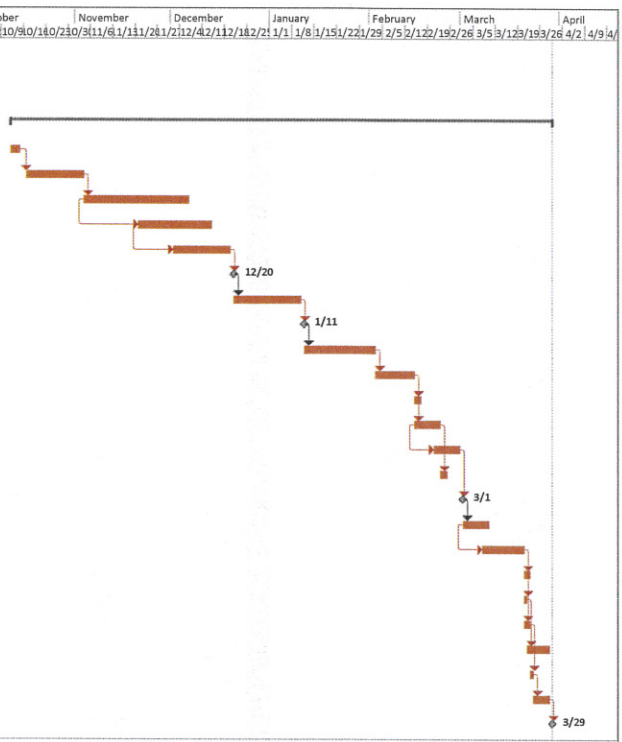
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**CITY HALL RELOCATION**					
2							
3							
4		**Construction**	**120 days**	**Mon 10/3/16**	**Wed 3/29/17**		
5		**City Clerks Office 1st. Floor**	**81 days**	**Mon 10/3/16**	**Thu 2/2/17**		
6		Mobilization	3 days	Mon 10/3/16	Wed 10/5/16		
7		Demo	8 days	Thu 10/6/16	Mon 10/17/16	6	
8		Overhead MEPS	10 days	Tue 10/18/16	Mon 10/31/16	7	
9		Wall Framing	5 days	Tue 11/1/16	Mon 11/7/16	8	
10		Rough inwall MEP's	6 days	Tue 11/8/16	Wed 11/16/16	9	
11		Rough Framing Inspection	0 days	Thu 11/17/16	Thu 11/17/16	10FS+1 day	
12		Hang Drywall	6 days	Fri 11/18/16	Tue 11/29/16	11	
13		Drywall Screw Inspection	0 days	Wed 11/30/16	Wed 11/30/16	12FS+1 day	
14		Tape/Finish Drywall	10 days	Thu 12/1/16	Wed 12/14/16	13	
15		Paint	5 days	Thu 12/15/16	Wed 12/21/16	14	
[illegible]		Install Door Frames	1 day	Thu 12/22/16	Thu 12/22/16	15	
17		Install Ceiling Grid	4 days	Thu 12/22/16	Tue 1/3/17	15	
18		MEPS Finish Trim	6 days	Wed 1/4/17	Wed 1/11/17	17	
19		Install Millwork	1 day	Wed 1/4/17	Wed 1/4/17	17	
20		Overhead MEPS/Ceiling Inspection	0 days	Thu 1/12/17	Thu 1/12/17	18FS+1 day	
21		Install Ceiling Tiles	4 days	Fri 1/13/17	Wed 1/18/17	20	
22		Install Flooring	5 days	Thu 1/19/17	Wed 1/25/17	21	
23		Install Doors/Hardware	1 day	Thu 1/26/17	Thu 1/26/17	22	
24		Install Signage/Life Safety	1 day	Thu 1/26/17	Thu 1/26/17	22	
25		Final Clean	1 day	Thu 1/26/17	Thu 1/26/17	22	
26		Final Inspections	5 days	Fri 1/27/17	Thu 2/2/17	24	
27		Punch List walk	1 day	Fri 1/27/17	Fri 1/27/17	25	
28		Punch List	3 days	Mon 1/30/17	Wed 2/1/17	27	
29		Turn Over	0 days	Thu 2/2/17	Thu 2/2/17	28FS+1 day	



Project: Preliminary Schedule 08-
Date: Fri 8/26/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
30							
31							
32							
33		**City Manager 7th Floor**	**113 days**	**Wed 10/12/16**	**Wed 3/29/17**		
34		Mobilization	3 days	Wed 10/12/16	Fri 10/14/16		
35		Demo	14 days	Mon 10/17/16	Thu 11/3/16	34	
36		Overhead MEPS	20 days	Fri 11/4/16	Tue 12/6/16	35	
37		Wall Framing	15 days	Mon 11/21/16	Tue 12/13/16	36SS+10 days	
38		Rough inwall MEP's	12 days	Fri 12/2/16	Mon 12/19/16	37SS+7 days	
39		Rough Framing Inspection	0 days	Tue 12/20/16	Tue 12/20/16	38FS+1 day	
40		Hang Drywall	10 days	Wed 12/21/16	Tue 1/10/17	39	
41		Drywall Screw Inspection	0 days	Wed 1/11/17	Wed 1/11/17	40FS+1 day	
42		Tape/Finish Drywall	16 days	Thu 1/12/17	Thu 2/2/17	41	
43		Paint	8 days	Fri 2/3/17	Tue 2/14/17	42	
44		Install Door Frames	2 days	Wed 2/15/17	Thu 2/16/17	43	
45		Install Ceiling Grid	6 days	Wed 2/15/17	Wed 2/22/17	43	
		MEPS Finish Trim	6 days	Tue 2/21/17	Tue 2/28/17	45SS+4 days	
47		Install Millwork	2 days	Thu 2/23/17	Fri 2/24/17	45	
48		Overhead MEPS/Ceiling Inspe	0 days	Wed 3/1/17	Wed 3/1/17	46FS+1 day	
49		Install Ceiling Tiles	6 days	Thu 3/2/17	Thu 3/9/17	48	
50		Install Flooring	9 days	Wed 3/8/17	Mon 3/20/17	49SS+4 days	
51		Install Doors/Hardware	2 days	Tue 3/21/17	Wed 3/22/17	50	
52		Install Signage/Life Safety	1 day	Tue 3/21/17	Tue 3/21/17	50	
53		Final Clean	2 days	Tue 3/21/17	Wed 3/22/17	50	
54		Final Inspections	5 days	Wed 3/22/17	Tue 3/28/17	52	
55		Punch List walk	1 day	Thu 3/23/17	Thu 3/23/17	53	
56		Punch List	3 days	Fri 3/24/17	Tue 3/28/17	55	
57		Turn Over	0 days	Wed 3/29/17	Wed 3/29/17	56FS+1 day	



Project: Preliminary Schedule 08-
Date: Fri 8/26/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

Construction will also provide contact information for the superintendent and project manager. It is anticipated that the super finishing up the 2nd floor project will transfer to this project as he is most familiar with the building.

Thanks,

PETER ROSADO
AIA, Architect | Associate

LDA Partners
DESIGNERS & ARCHITECTS

209.943.0405
www.ldapartners.com

From: Dominique Fryer [mailto:Dominique@haggertyconstruction.net]
Sent: Wednesday, August 24, 2016 1:39 PM
To: Corey Chatfield
Cc: Janice Miller; Eric Wohle; Peter Rosado; Gary Perata; Ryan Haggerty; Blake Wyatt
Subject: RE: LETTER OF INTENT

Corey,

We have received your Letter of Intent and will have the requested items delivered to you as soon as possible. Thank you again for providing us with this information and we look forward to attending the preconstruction meeting.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

HAGGERTY CONSTRUCTION, INC

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Best of 2014 San Joaquin Best of 2015 San Joaquin

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Corey Chatfield [mailto:Corey.Chatfield@stocktonca.gov]
Sent: Wednesday, August 24, 2016 11:03 AM
To: Dominique Fryer <Dominique@haggertyconstruction.net>
Cc: Janice Miller <Janice.Miller@stocktonca.gov>; Eric Wohle <EWohle@ldapartners.com>; prosado

(prosado@ldapartners.com) <prosado@ldapartners.com>
Subject: LETTER OF INTENT

August 24, 2016

Haggerty Construction, Inc.
2474 Wigwam Drive #A
Stockton, Ca 95205
Attn: Dominique Fryer

LETTER OF INTENT

The City of Stockton intends to authorize, subject to City Council approval, a contract between the City and Haggerty Construction, Inc., for the construction of the tenant improvements for the City Hall Relocation 1st and 7th floor project (PUR_15-033) at 400 East Main Street in Downtown Stockton.

Formal approval by the Stockton City Council is anticipated to occur on September 27, 2016, after which a contract will be executed and a preconstruction meeting held authorizing Haggerty Construction to proceed with the terms of the agreement. In order to bring forward the construction contract for Council approval, the following information is required:

1. Proposed Construction Schedule
2. Schedule of Values

The above items are needed no later than Wednesday, August 31, 2016, in order to meet the submittal deadline for the September 27 Council meeting. Feel free to contact me at 209-937-8059 should you have any questions.

JANICE MILLER, DEPUTY DIRECTOR
ECONOMIC DEVELOPMENT DEPARTMENT

COREY CHATFIELD
PROJECT MANAGER

JM:CC

cc: Eric Wohle and Pete Rosado, LDA Partners

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Wednesday, August 24, 2016 1:40 PM
To: Corey Chatfield
Cc: Janice Miller; Eric Wohle; prosado (prosado@ldapartners.com); Gary Perata; Ryan Haggerty; Blake Wyatt
Subject: RE: LETTER OF INTENT

Corey,

We have received your Letter of Intent and will have the requested items delivered to you as soon as possible. Thank you again for providing us with this information and we look forward to attending the preconstruction meeting.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Corey Chatfield [mailto:Corey.Chatfield@stocktonca.gov]
Sent: Wednesday, August 24, 2016 11:03 AM
To: Dominique Fryer <Dominique@haggertyconstruction.net>
Cc: Janice Miller <Janice.Miller@stocktonca.gov>; Eric Wohle <EWohle@ldapartners.com>; prosado (prosado@ldapartners.com) <prosado@ldapartners.com>
Subject: LETTER OF INTENT

August 24, 2016

Haggerty Construction, Inc.
2474 Wigwam Drive #A

Stockton, Ca 95205
Attn: Dominique Fryer

LETTER OF INTENT

The City of Stockton intends to authorize, subject to City Council approval, a contract between the City and Haggerty Construction, Inc., for the construction of the tenant improvements for the City Hall Relocation 1st and 7th floor project (PUR_15-033) at 400 East Main Street in Downtown Stockton.

Formal approval by the Stockton City Council is anticipated to occur on September 27, 2016, after which a contract will be executed and a preconstruction meeting held authorizing Haggerty Construction to proceed with the terms of the agreement. In order to bring forward the construction contract for Council approval, the following information is required:

1. Proposed Construction Schedule
2. Schedule of Values

The above items are needed no later than Wednesday, August 31, 2016, in order to meet the submittal deadline for the September 27 Council meeting. Feel free to contact me at 209-937-8059 should you have any questions.

JANICE MILLER, DEPUTY DIRECTOR
ECONOMIC DEVELOPMENT DEPARTMENT

COREY CHATFIELD
PROJECT MANAGER

JM:CC

cc: Eric Wohle and Pete Rosado, LDA Partners

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Tuesday, August 23, 2016 1:29 PM
To: Corey Chatfield
Subject: RE: Schedule of Values

Corey,

I will gladly provide you with a Schedule of Values for the project along with the other information. Typically we do not provide these documents until we have received an Award Letter and/or Letter of Intent. Is there any way you could get one of these sent over to me today and/or tomorrow morning? That way I could send all of the requested information to you shortly after.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Corey Chatfield [mailto:Corey.Chatfield@stocktonca.gov]
Sent: Tuesday, August 23, 2016 12:38 PM
To: Dominique Fryer <Dominique@haggertyconstruction.net>
Subject: Schedule of Values

Dominique, Can you also send me a schedule of Values.
Thanks,
Corey

Corey Chatfield
Project Manager
Economic Development Department
209-937-8059

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Tuesday, August 23, 2016 11:07 AM
To: Corey Chatfield
Cc: Ryan Haggerty; Blake Wyatt; Gary Perata
Subject: RE: Start date and time line

Corey,

We are currently in the process of completing an in-house preconstruction meeting for this project. Please allow us 24 hours to provide you with our responses to your previous email.

One item that we would request given the October 3rd start date is that we be provided a "stop schedule" or schedule extension for those holidays that will fall within the project duration including, but not limited to the 5 business days between Christmas and New Year's.

Our team looks forward to working with you on this project and appreciate this opportunity to provide you with our services. Please feel free to let me know if you have any further questions and/or concerns.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

HAGGERTY CONSTRUCTION, INC

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Corey Chatfield [mailto:Corey.Chatfield@stocktonca.gov]
Sent: Tuesday, August 23, 2016 10:46 AM
To: Dominique Fryer <Dominique@haggertyconstruction.net>
Subject: Start date and time line

Dominique

Thank you for sending requested information. I am working hard to complete the steps at City Hall. If everything comes together as we anticipate we'd like a start date of October 3rd. Is this feasible for Haggerty? Can you send me a projected time lime and completion date?
Thanks,
Corey

Corey Chatfield
Project Manager
Economic Development Department
209-937-8059

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 22, 2016 4:06 PM
To: Corey Chatfield
Subject: RE: Haggerty Construction INC
Attachments: 15-033_CSLB Exp 113016_HCI.pdf; 15-033_City of Stockton License Exp 063017_HCI.pdf; 15-033_W9_HCI.pdf; 15-033_Insurance Certificate_HCI.pdf

Corey,

Please see attached requested info. Let me know if you have any questions and/or need any further information. Thank you again.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Corey Chatfield [mailto:Corey.Chatfield@stocktonca.gov]
Sent: Monday, August 22, 2016 1:59 PM
To: Dominique Fryer <Dominique@haggertyconstruction.net>
Subject: Haggerty Construction INC

Dominique,
A few thing I will need right away to push this project along are a copy of your current business license, proof of insurance and a copy of your w9. The sooner I get these items the quicker I can get your contract signed and approved. Any questions don't hesitate to call. I appreciate your help on this.
Thanks,
Corey

Corey Chatfield
Project Manager

Economic Development Department
209-937-8059

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

Consumer Affairs

License Number **944274** Entity CORP

Business Name HAGGERTY CONSTRUCTION INC

Classification(s) B

Expiration Date 11/30/2016 www.cslb.ca.gov

CITY OF STOCKTON
BUSINESS LICENSE TAX CERTIFICATE

BUSINESS LICENSE TAX ACCOUNT NUMBER:
17-00124567
CONTROL NUMBER
(0107612)

BUSINESS ADDRESS:
2474 WIGWAM DR A

STOCKTON CA 95205

HAGGERTY CONSTRUCTION INC.
2474 WIGWAM DR A

STOCKTON CA 95205

EXPIRATION DATE:
June 30, 2017

BUSINESS LICENSE CLASSIFICATION: GEN CONTRACTORS-ANNUAL

BUSINESS DESCRIPTION: CLASS B GENERAL CONTRACTOR

THIS LICENSE MUST BE KEPT AT THE FIXED LOCATION OF THE BUSINESS IT HAS BEEN ISSUED FOR, AND DISPLAYED UPON DEMAND.
- OR –
IN THE CASE OF A LICENSEE NOT AT A FIXED LOCATION, THE LICENSEE SHALL KEEP THIS LICENSE UPON HIS PERSON AT ALL TIMES WHILE TRANSACTING AND CARRYING ON BUSINESS AND DISPLAY IT UPON DEMAND.

Licenses must be renewed by the last day of the month following the expiration date, which is the date the license tax has been paid through. It is the business owner's responsibility to renew the business license or notify the city that they are no longer doing business, even if they do not receive a renewal application by mail.

Notify the City of Stockton, Business License Customer Service unit of any changes to the business either by mail City of Stockton, P.O. Box 1570, Stockton, CA 95201-1570, or in our office City Hall, Administrative Services Department, 425 North El Dorado Street, Stockton, CA 95202.

Office hours are Monday through Friday 8:00 a.m. to 5:00 p.m.
Open through lunch, Closed every other Friday

Authorized Agent for City of Stockton

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 22, 2016 10:54 AM
To: Alan Montanelli; Corey Chatfield
Subject: RE: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Alan,

Thank you for reaching back out to me. I have submitted them to the clerk's office this morning and would be happy to answer any questions should you have them. I look forward to hearing from you and hope you have a great day!

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Alan Montanelli [mailto:Alan.Montanelli@stocktonca.gov]
Sent: Monday, August 22, 2016 7:55 AM
To: Dominique Fryer <Dominique@haggertyconstruction.net>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: RE: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Good morning,

Monday before noon will be fine. This can be submitted to Purchasing on the third floor of City Hall. Just ask for me at the counter.

Thank you,

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

From: Dominique Fryer [mailto:Dominique@haggertyconstruction.net]
Sent: Friday, August 19, 2016 11:18 AM
To: Alan Montanelli <Alan.Montanelli@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Allen & Corey,

I went down to the City Hall this morning to deliver the CD/USB copy of our bid per the bid documents and the office is closed today! Please verify that you received this electronic copy of the bid (attached) and that it will be acceptable to submit this information to the clerk's office on Monday, August 22. I look forward to hearing from you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 15, 2016 2:50 PM
To: Alan Montanelli; Corey Chatfield; Corey Chatfield
Subject: RE: Bid Package - City Hall Phase 2 TI - HCI

Alan,

Great! Thank you and my apologies for not noticing that before I reached out to you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Alan Montanelli [mailto:Alan.Montanelli@stocktonca.gov]
Sent: Monday, August 15, 2016 2:14 PM
To: Dominique Fryer <Dominique@haggertyconstruction.net>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: RE: Bid Package - City Hall Phase 2 TI - HCI

Hello Dominique,

Please refer to the latest Q&A on our website page for answers to your questions. These questions were asked by other contractors as well and answered by the City. The direct link is:

http://www.stocktongov.com/services/business/bidFlash/projDetail.html?dept=Economic_Development,idnum=PUR_15-033

Thank you,

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

From: Dominique Fryer [mailto:Dominique@haggertyconstruction.net]
Sent: Monday, August 15, 2016 2:03 PM
To: Corey Chatfield <Corey.Chatfield@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Cc: Alan Montanelli <Alan.Montanelli@stocktonca.gov>
Subject: Bid Package - City Hall Phase 2 TI - HCI

Corey,

We are preparing our bid package and noticed the bid forms a requiring labor, performance and maintenance bonds, but I have found nothing regarding a bid bond. Is a bid bond going to be required? Lastly, the bid documents are also calling out for us to provide a CD of the bid docs. Will a USB flash drive be acceptable?

Thank you for your time and I look forward to hearing from you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

HAGGERTY CONSTRUCTION, INC

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Best of 2014 San Joaquin Best of 2015 San Joaquin

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Friday, August 19, 2016 11:18 AM
To: Alan Montanelli; Corey Chatfield
Subject: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction
Attachments: 16152_Bid Forms Completed 081816_City Hall Stockton Phase 2 TI_HCI.pdf

Allen & Corey,

I went down to the City Hall this morning to deliver the CD/USB copy of our bid per the bid documents and the office is closed today! Please verify that you received this electronic copy of the bid (attached) and that it will be acceptable to submit this information to the clerk's office on Monday, August 22. I look forward to hearing from you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

HAGGERTY CONSTRUCTION, INC

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Best of 2014 San Joaquin Best of 2015 San Joaquin

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

CITY OF STOCKTON

REQUEST FOR SEALED BIDS
CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS FOR THE CITY OF STOCKTON, CALIFORNIA
(PUR 15-033)

Stockton All-America City 2004 1999

A MANDATORY JOB WALK WILL BE HELD ON JULY 27, 2016 AT 9:00 A.M. PROMPTLY IN THE LOBBY OF 400 E. MAIN, STOCKTON, CA

BIDS WILL BE RECEIVED UNTIL THE HOUR OF
2:00 O'CLOCK P.M., THURSDAY, AUGUST 18, 2016,
IN THE OFFICE OF THE CITY CLERK,
FIRST FLOOR, CITY HALL, 425 NORTH EL DORADO STREET,
STOCKTON, CALIFORNIA 95202-1997

NOTICE INVITING SEALED BIDS

NOTICE IS HEREBY GIVEN that sealed bids are invited by the City of Stockton, California for specifications for **CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS (PUR 15-033)** in strict accordance with the specifications.

The City of Stockton has begun the process of relocating City offices to 400 E. Main St., Stockton, CA. In preparation for this move, the City is inviting bids for the construction of an interior remodel on the first and seventh floors in accordance with the plans and specifications provided for this project.

The bid specifications and forms can be obtained from the City of Stockton's website at www.stocktongov.com/bidflash and must be delivered to the Office of the City Clerk, City Hall, 425 North El Dorado Street, Stockton, California, up to but not later than **2:00 p.m., on Thursday, AUGUST 18, 2016.**

A mandatory job walk will be held on July 27, 2016 at 9:00 a.m. promptly in the lobby of 400 E. Main, Stockton, CA. Interested bidders arriving at 9:01 a.m. or later will not be admitted. Failure to attend will result in your bid being rejected.

The City reserves the right to reject any and/or all bids received.

Information on Technical Data
Corey Chatfield, Economic Development
(209) 937-8059
e-mail: Corey.Chatfield@stocktonca.gov

Information on Bid Process/Clarification
Alan Montanelli, Buyer
(209) 937-8350
e-mail: Alan.Montanelli@stocktonca.gov

DISCLAIMER: The City does not assume any liability of responsibility for errors/omissions in any document transmitted electronically.

Dated: **July 21, 2016**

//s//BONNIE PAIGE
CITY CLERK OF THE CITY OF STOCKTON

BIDDER'S CHECKLIST
CITY OF STOCKTON / PURCHASING DIVISION

Did You:

* X Complete the following bid documents (FROM THIS PACKET ONLY SUBMIT PAGES 15 to 18, along with any other requirements):

  * X Sign and notarize by jurat certificate the "Non-Collusion Affidavit" form. An "All-Purpose Acknowledgment" form will not be sufficient.

  * X Complete and sign the "Bid to be Submitted" form.

  * X Sign the "Bidder's Agreement" form. **Include (with bid) name and e-mail address for City contact, if different from signatoree**

  * X Proof of registration of self and any subcontractors with the State of California Department of Industrial Relations

  * X Recheck your math on each item extension and total column. Do not superimpose numerals on your bid forms. If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid.

* X Submit one (1) ORIGINAL of all bid documents. Additionally, submit one (1) CD with an electronic version of the bid documents.

* X Review all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

* X Deliver sealed bid to City Hall, City Clerk's Office (1st floor), 425 North El Dorado Street, Stockton, CA 95202, before **August 18, 2016, at 2:00 p.m**. Sealed bid shall be marked "Bid" and indicate project name, number, and bid opening date.
Please note that some overnight delivery services do not deliver directly to the City Clerk's Office. This could result in the bid arriving in the City Clerk's Office after the bid opening deadline and therefore not being accepted. NOTE: The Stockton City Clerk's office is closed from 12 noon to 1 p.m. for lunch.

A) CITY OF STOCKTON CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS
B) (PUR 15-033)
C) AUGUST 18, 2016

CONTACT INFORMATION:

Information on Technical Data	Information on Bid Process/Clarification
Corey Chatfield, Economic Development (209) 937-8059 e-mail: Corey.Chatfield@stocktonca.gov	Alan Montanelli, Buyer (209) 937-8350 e-mail: Alan.Montaneli@stocktonca.gov

*If not completed as required, your proposal may be voided.
***DISCLAIMER**: The City does not assume any liability or responsibility for errors/omissions in any document transmitted electronically.
*THIS FORM IS FOR YOUR INFORMATION ONLY AND DOES NOT NEED TO BE SUBMITTED WITH YOUR PROPOSAL.

BID DOCUMENTS

A) BID – CITY HALL RELOCATION 1ST & 7TH FLOORS TENANT IMPROVEMENTS

B) PUR 15-033

C) AUGUST 18, 2016

COMPANY NAME: Haggerty Construction, Inc.

CONTACT NAME: Dominique Fryer

ADDRESS: 2747 Wigwam Drive, Stockton, CA 95205

TELEPHONE NUMBER: (209) 475-9898

EMAIL: dominique@haggertyconstruction.net

BID TO BE SUBMITTED

Quantity	Description	Unit Price	Amount
1	Plans Dated 7/14/16 - Specs Dated 7/21/16 - Addendum #1	$ 1 /ea.	$ 1,343,000.00
		$ N/A /ea.	$ N/A
		Subtotal	$1,343,000.00
		Sales Tax (9%)	$ N/A
		GRAND TOTAL	$1,343,000.00

The bidder warranties this equipment for a minimum period of 3 years.

Complete delivery will be made within 105 calendar days from award of bid.

Any questions regarding specifications should be directed to Janice Miller, Economic Development, at telephone (209) 937-8862.

Haggerty Construction, Inc.	2474 Wigwam Drive, Stockton, CA 95205
FIRM	ADDRESS
	Estimator
SIGNED BY	TITLE OR AGENCY
08/18/16	(209) 475-9898
DATE	TELEPHONE

NOTE: Bidders are to mark their sealed bids to clearly indicate the content as:

A) CITY OF STOCKTON CITY HALL RELOCATION 1st & 7th FLOOR TENANT IMPROVEMENTS

B) PUR 15-033

C) **AUGUST 18, 2016**

IF YOU DO NOT WISH TO BID, PLEASE RETURN YOUR BID IMMEDIATELY STATING REASON.

BIDDER'S AGREEMENT

In submitting this bid, as herein described, the bidder agrees that:

1. They have carefully examined the specifications and all other provisions of this form and understand the meaning, intent, and requirements of same.

2. They have reviewed and understand all clarifications/questions/answers on the City's website at www.stocktongov.com/bidflash

3. They will enter into written contract and furnish the item(s)/service(s) in the time specified in strict conformity with the specifications and conditions contained therein for the price quoted by the bidder on this bid.

4. The proposed price is inclusive of all freight and handling charges and includes delivery to the City of Stockton, Municipal Service Center, or if specified, to the alternate point of delivery shown in the specifications.

5. They have signed and notarized the attached Non-Collusion Affidavit form whether individual, corporate or partnership. Must be "A Jurat" notarization.

Haggerty Construction, Inc.	2474 Wigwam Drive, Stockton, CA 95205
FIRM	ADDRESS
	Estimator
SIGNED BY	TITLE OR AGENCY

dominique@haggertyconstruction.net
E-MAIL ADDRESS

NOTE: If erasures or interlineations appear on your bid form, they must be initialed by the person preparing the bid. Bids shall be mailed or delivered to:

OFFICE OF THE CITY CLERK
FIRST FLOOR, CITY HALL
425 NORTH EL DORADO STREET
STOCKTON, CALIFORNIA 95202-1997

On or before **2:00 p.m. AUGUST 18, 2016**, and publicly opened immediately thereafter in the City Council Chambers.

SPECIAL NOTE: U.P.S. OR OTHER SPECIAL HANDLING SERVICES DO NOT DELIVER DIRECTLY TO THE CITY CLERK'S OFFICE. BIDDERS ARE ADVISED THAT IF A SPECIAL HANDLING SERVICE IS USED, BIDS MAY NOT REACH THE CITY CLERK'S OFFICE IN TIME FOR BID OPENING AND WILL BE REJECTED AND RETURNED TO BIDDER.

NON-COLLUSION

No. 1 **AFFIDAVIT FOR INDIVIDUAL BIDDER**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____being first duly sworn, deposes and says: That on behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Individual Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

See Attached Documents in Original Bid

Signature _____

No. 2 **AFFIDAVIT FOR CORPORATION BIDDER**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____being first duly sworn, deposes and says: That they are the_____ of _____ a corporation, which corporation is the party making the foregoing bid, that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation to put in a sham bid, or that such other person, firm or corporation shall or should refrain from bidding; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature Corporation Bidder)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

See attached documents in original bid

Signature _____

No. 3 **AFFIDAVIT FOR FIRM, ASSOCIATION, OR CO-PARTNERSHIP**

STATE OF CALIFORNIA,_____)ss.
County of _____)
(insert)

_____,
each being first duly sworn, depose and say: That they are a member of the firm, association or co-partnership,

designated as _____who is the party making the foregoing bid; that the other partner, or partners, are _____that such bid is genuine and not sham or collusive, or made in the interest or behalf of any person not named herein; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly with, or induced or solicited any other bid or person, firm or corporation shall or should refrain from proposing; and has not in any manner sought by collusion to secure to themselves any advantage over or against the City, or any person interested in said improvement, or over any other Bidder.

_____
(Signature)

_____
(Signature)

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20_____
_____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

See attached documents in original bid

Signature _____

HAGGERTY
CONSTRUCTION, INC

2474 Wigwam Drive, Suite A
Stockton, CA 95205
(209) 475-9898 p
(209) 451-0011 f
haggertyconstruction.net
info@haggertyconstruction.net
Lic. #944274

Friday, August 19, 2016

Proof of DIR Registration

To whom it may concern;

Per question #1 on the Questions and Answers form on the City Hall Phase 2 TI project for the City of Stockton, we are verifying that Haggerty Construction, Inc. as well as all proposed subcontractors are currently registered and up to date with the Department of Industrial Relations. We would be happy to provide further proof upon request.

Kind regards,

Dominique Fryer

Estimator
The Team@ Haggerty Construction, Inc.

Subcontractor List

Project #: 15-033

Project: City Hall 1st & 7th Floor TI

General Contractor: Haggerty Construction, Inc.

Address: 2474 Wigwam Drive, Stockton, CA 95205
License #: 944274 DIR #: 1000006169

Subcontractor Name	Location	License #	DIR #
El Dorado	Folsom	999817	1000022353
Allen's Cabinets	Lincoln	719680	1000004789
Interior Wood Specialties	Modesto	714669	1000011574
Stockton Progressive Glass	Stockton	819683	1000010716
Delta City Drywall	Citrus Heights	853303	1000005819
Arrow Acoustics	Hayward	260647	1000001883
All About Floors	Concord	720907	1000015014
Herlache & Sons Painting	Roseville	472047	1000002225
Tyco/Simplexx Grinnell	Sacramento	986047	1000000576
Cosco Fire Protection	Rocklin	577621	1000002305
Comfort Air	Stockton	85895	1000008331
Carr Electric	Stockton	388146	1000001507

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 22, 2016 10:54 AM
To: Alan Montanelli; Corey Chatfield
Subject: RE: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Alan,

Thank you for reaching back out to me. I have submitted them to the clerk's office this morning and would be happy to answer any questions should you have them. I look forward to hearing from you and hope you have a great day!

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Alan Montanelli [mailto:Alan.Montanelli@stocktonca.gov]
Sent: Monday, August 22, 2016 7:55 AM
To: Dominique Fryer <Dominique@haggertyconstruction.net>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: RE: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Good morning,

Monday before noon will be fine. This can be submitted to Purchasing on the third floor of City Hall. Just ask for me at the counter.

Thank you,

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

From: Dominique Fryer [mailto:Dominique@haggertyconstruction.net]
Sent: Friday, August 19, 2016 11:18 AM
To: Alan Montanelli <Alan.Montanelli@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Allen & Corey,

I went down to the City Hall this morning to deliver the CD/USB copy of our bid per the bid documents and the office is closed today! Please verify that you received this electronic copy of the bid (attached) and that it will be acceptable to submit this information to the clerk's office on Monday, August 22. I look forward to hearing from you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

Corey Chatfield

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 22, 2016 4:06 PM
To: Corey Chatfield
Subject: RE: Haggerty Construction INC
Attachments: 15-033_CSLB Exp 113016_HCI.pdf; 15-033_City of Stockton License Exp 063017_HCI.pdf; 15-033_W9_HCI.pdf; 15-033_Insurance Certificate_HCI.pdf

Corey,

Please see attached requested info. Let me know if you have any questions and/or need any further information. Thank you again.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Corey Chatfield [mailto:Corey.Chatfield@stocktonca.gov]
Sent: Monday, August 22, 2016 1:59 PM
To: Dominique Fryer <Dominique@haggertyconstruction.net>
Subject: Haggerty Construction INC

Dominique,
A few thing I will need right away to push this project along are a copy of your current business license, proof of insurance and a copy of your w9. The sooner I get these items the quicker I can get your contract signed and approved. Any questions don't hesitate to call. I appreciate your help on this.
Thanks,
Corey

Corey Chatfield
Project Manager

Economic Development Department
209-937-8059

Alan Montanelli

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 15, 2016 2:50 PM
To: Alan Montanelli; Corey Chatfield; Corey Chatfield
Subject: RE: Bid Package - City Hall Phase 2 TI - HCI

Alan,

Great! Thank you and my apologies for not noticing that before I reached out to you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Alan Montanelli [mailto:Alan.Montanelli@stocktonca.gov]
Sent: Monday, August 15, 2016 2:14 PM
To: Dominique Fryer <Dominique@haggertyconstruction.net>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: RE: Bid Package - City Hall Phase 2 TI - HCI

Hello Dominique,

Please refer to the latest Q&A on our website page for answers to your questions. These questions were asked by other contractors as well and answered by the City. The direct link is:

http://www.stocktongov.com/services/business/bidFlash/projDetail.html?dept=Economic_Development,idnum=PUR_15-033

Thank you,

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

From: Dominique Fryer [mailto:Dominique@haggertyconstruction.net]
Sent: Monday, August 15, 2016 2:03 PM
To: Corey Chatfield <Corey.Chatfield@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Cc: Alan Montanelli <Alan.Montanelli@stocktonca.gov>
Subject: Bid Package - City Hall Phase 2 TI - HCI

Corey,

We are preparing our bid package and noticed the bid forms a requiring labor, performance and maintenance bonds, but I have found nothing regarding a bid bond. Is a bid bond going to be required? Lastly, the bid documents are also calling out for us to provide a CD of the bid docs. Will a USB flash drive be acceptable?

Thank you for your time and I look forward to hearing from you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

Alan Montanelli

From: Dominique Fryer <Dominique@haggertyconstruction.net>
Sent: Monday, August 22, 2016 10:54 AM
To: Alan Montanelli; Corey Chatfield
Subject: RE: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Alan,

Thank you for reaching back out to me. I have submitted them to the clerk's office this morning and would be happy to answer any questions should you have them. I look forward to hearing from you and hope you have a great day!

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

---

From: Alan Montanelli [mailto:Alan.Montanelli@stocktonca.gov]
Sent: Monday, August 22, 2016 7:55 AM
To: Dominique Fryer <Dominique@haggertyconstruction.net>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: RE: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Good morning,

Monday before noon will be fine. This can be submitted to Purchasing on the third floor of City Hall. Just ask for me at the counter.

Thank you,

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax (209) 937-8355

From: Dominique Fryer [mailto:Dominique@haggertyconstruction.net]
Sent: Friday, August 19, 2016 11:18 AM
To: Alan Montanelli <Alan.Montanelli@stocktonca.gov>; Corey Chatfield <Corey.Chatfield@stocktonca.gov>
Subject: PUR 15-033 - City Hall Relocation 1st & 7th Floor TI - Haggerty Construction

Allen & Corey,

I went down to the City Hall this morning to deliver the CD/USB copy of our bid per the bid documents and the office is closed today! Please verify that you received this electronic copy of the bid (attached) and that it will be acceptable to submit this information to the clerk's office on Monday, August 22. I look forward to hearing from you.

Kind regards,

Dominique Fryer | Estimator
dominique@haggertyconstruction.net | (209) 639-9013

HAGGERTY CONSTRUCTION, INC

The Team @
Haggerty Construction, Inc.
2474 Wigwam Dr. Suite A | Stockton, CA 95205
(209) 475-9898 | (209) 451-0011

Save a Tree - Think Before You Print.
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Haggerty Construction, Inc. 2474 Wigwam Drive, Suite A, Stockton, CA 95205, www.haggertyconstruction.net

Alan Montanelli

From: Alan Montanelli
Sent: Thursday, July 21, 2016 4:52 PM
To: 'ronce@haggertyconstruction.net'; 'info@haggertyconstruction.net'
Subject: New Project-City Hall Relocation Project 1st and 7th floor tenant improvements
Attachments: REQUEST FOR SEALED BID PUR 15-033 NOTICE.PDF

Please be advised that a new project has been posted by the City of Stockton at www.stocktongov.com/bidflash for the City of Stockton City Hall Relocation project PUR 15-033. This project can be located under the Economic Development Department tab.

Thank you for your interest in City of Stockton projects.

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

Alan Montanelli

From: Alan Montanelli
Sent: Thursday, July 28, 2016 10:59 AM
To: Alan Montanelli
Cc: Corey Chatfield; 'Peter Rosado'
Subject: PUR 15-033 City Hall Relocation 1st & 7th Floor relocation tenant improvements

Good morning,

A discrepancy regarding the time for the mandatory job walk on this project was recently discovered in the bid documents. One location in the document had the starting time as 10:00 am instead of 9:00 am. In order to address this issue, we will be holding an additional mandatory job walk on Monday, August 1, 2016 at 10:00 am.

Please note, if you attended the job walk on July 27, 2016 at 9:00 am and are on the sign in sheet, you are not required to be at the additional job walk scheduled for 8/01/16 in order to bid on this project. Attendance on July 27, 2016 satisfies that requirement. However, you are welcome to attend on 8/01/16 if so desired.

Any questions asked and answered on both job walks will be recorded and included in the official City responses to be posted on our bidflash page at http://www.stocktongov.com/services/business/bidflash .

Thank you,

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
Desk: (209) 937-8350
Fax: (209) 937-8855

Alan Montanelli

From: Alan Montanelli
Sent: Monday, August 22, 2016 9:50 AM
To: Concepcion Gayotin
Subject: PUR 15-033 City Hall Relocation 1st & 7th floor
Attachments: REQUEST FOR SEALED BID PUR 15-033 Section 1.30 DIR Requirements.pdf; BID - PUR 15-033 - Haggerty Construction Inc (003) DIR statement.pdf

Concepcion,

Just wanted to bring you up to speed on this project. Bids were received last week. However, the lowest bidder (Haggerty Construction) did not comply with the requirements to provide proof of DIR registration for both themselves and any subcontractors. I have included a copy of the page in our specifications that outlined what was required from bidders as well as what Haggerty's response to this requirement (a statement).

Thanks,

Alan

Alan Montanelli
Buyer
City of Stockton
Administrative Services/Purchasing
esk: (209) 937-8350
ax: (209) 937-8855

Corey Chatfield

From: Corey Chatfield
Sent: Monday, August 22, 2016 4:31 PM
To: Raeann Cycenas
Cc: Alan Montanelli
Subject: Insurance/Haggerty Construction
Attachments: 15-033_Insurance Certificate_HCI.pdf; CONSTRUCTION CONTRACT revised.docx

Raeann,
As you know we will be going to council shortly for approval of 2nd phase of construction project for City Hall relocation. The lowest bidder was Haggerty Construction. I have started to gather some of their information. Can you look at insurance information and see if it is sufficient. I have attached as with the contract. Anything else you need please don't hesitate to ask.
Thanks,
Corey

Corey Chatfield
Project Manager
Economic Development Department
209-937-8059

CITY OF STOCKTON
BUSINESS LICENSE TAX CERTIFICATE

BUSINESS LICENSE TAX ACCOUNT NUMBER:
17-00124567
CONTROL NUMBER
(0107612)

BUSINESS ADDRESS:
2474 WIGWAM DR A

STOCKTON CA 95205

HAGGERTY CONSTRUCTION INC.
2474 WIGWAM DR A

STOCKTON CA 95205

EXPIRATION DATE:
June 30, 2017

BUSINESS LICENSE CLASSIFICATION: GEN CONTRACTORS-ANNUAL

BUSINESS DESCRIPTION: CLASS B GENERAL CONTRACTOR

THIS LICENSE MUST BE KEPT AT THE FIXED LOCATION OF THE BUSINESS IT HAS BEEN ISSUED FOR, AND DISPLAYED UPON DEMAND.
- OR -
IN THE CASE OF A LICENSEE NOT AT A FIXED LOCATION, THE LICENSEE SHALL KEEP THIS LICENSE UPON HIS PERSON AT ALL TIMES WHILE TRANSACTING AND CARRYING ON BUSINESS AND DISPLAY IT UPON DEMAND.

Licenses must be renewed by the last day of the month following the expiration date, which is the date the license tax has been paid through. It is the business owner's responsibility to renew the business license or notify the city that they are no longer doing business, even if they do not receive a renewal application by mail.

Notify the City of Stockton, Business License Customer Service unit of any changes to the business either by mail City of Stockton, P.O. Box 1570, Stockton, CA 95201-1570, or in our office City Hall, Administrative Services Department, 425 North El Dorado Street, Stockton, CA 95202.

Office hours are Monday through Friday 8:00 a.m. to 5:00 p.m.
Open through lunch, Closed every other Friday

Authorized Agent for City of Stockton

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

Consumer Affairs

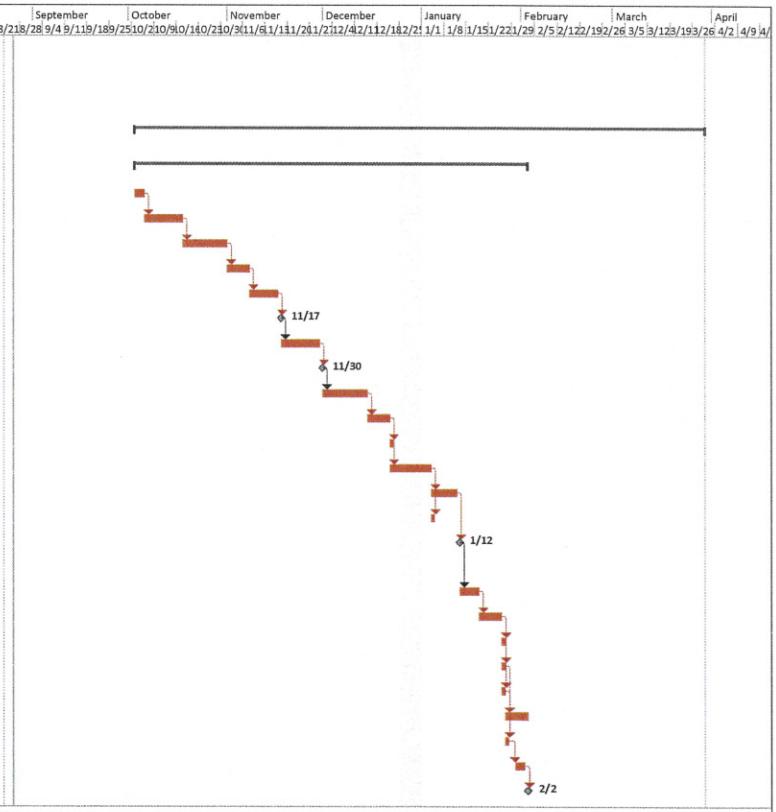
License Number **944274** Entity CORP

Business Name HAGGERTY CONSTRUCTION INC

Classification(s) B

Expiration Date 11/30/2016 www.cslb.ca.gov

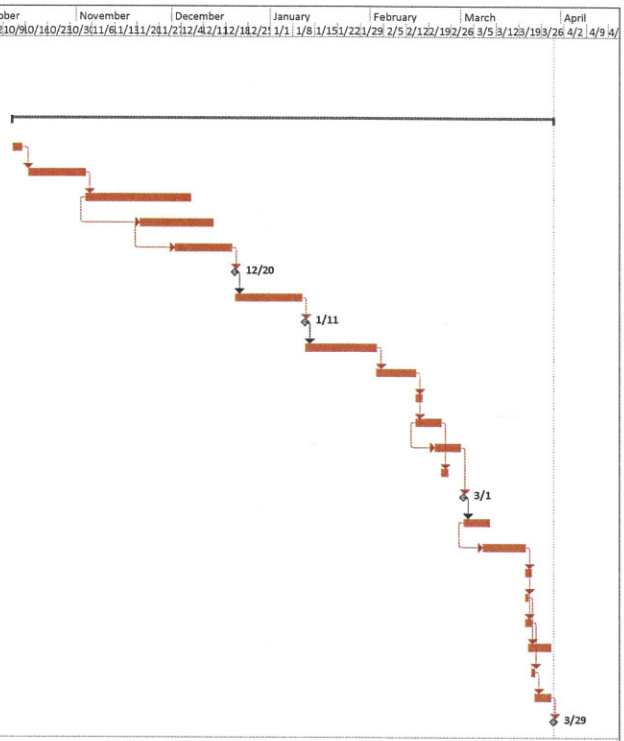
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**CITY HALL RELOCATION**					
2							
3							
4		**Construction**	**120 days**	**Mon 10/3/16**	**Wed 3/29/17**		
5		**City Clerks Office 1st. Floor**	**81 days**	**Mon 10/3/16**	**Thu 2/2/17**		
6		Mobilization	3 days	Mon 10/3/16	Wed 10/5/16		
7		Demo	8 days	Thu 10/6/16	Mon 10/17/16	6	
8		Overhead MEPS	10 days	Tue 10/18/16	Mon 10/31/16	7	
9		Wall Framing	5 days	Tue 11/1/16	Mon 11/7/16	8	
10		Rough inwall MEP's	6 days	Tue 11/8/16	Wed 11/16/16	9	
11		Rough Framing Inspection	0 days	Thu 11/17/16	Thu 11/17/16	10FS+1 day	
12		Hang Drywall	6 days	Fri 11/18/16	Tue 11/29/16	11	
13		Drywall Screw Inspection	0 days	Wed 11/30/16	Wed 11/30/16	12FS+1 day	
14		Tape/Finish Drywall	10 days	Thu 12/1/16	Wed 12/14/16	13	
15		Paint	5 days	Thu 12/15/16	Wed 12/21/16	14	
16		Install Door Frames	1 day	Thu 12/22/16	Thu 12/22/16	15	
17		Install Ceiling Grid	4 days	Thu 12/22/16	Tue 1/3/17	15	
18		MEPS Finish Trim	6 days	Wed 1/4/17	Wed 1/11/17	17	
19		Install Millwork	1 day	Wed 1/4/17	Wed 1/4/17	17	
20		Overhead MEPS/Ceiling Inspection	0 days	Thu 1/12/17	Thu 1/12/17	18FS+1 day	
21		Install Ceiling Tiles	4 days	Fri 1/13/17	Wed 1/18/17	20	
22		Install Flooring	5 days	Thu 1/19/17	Wed 1/25/17	21	
23		Install Doors/Hardware	1 day	Thu 1/26/17	Thu 1/26/17	22	
24		Install Signage/Life Safety	1 day	Thu 1/26/17	Thu 1/26/17	22	
25		Final Clean	1 day	Thu 1/26/17	Thu 1/26/17	22	
26		Final Inspections	5 days	Fri 1/27/17	Thu 2/2/17	24	
27		Punch List walk	1 day	Fri 1/27/17	Fri 1/27/17	25	
28		Punch List	3 days	Mon 1/30/17	Wed 2/1/17	27	
29		Turn Over	0 days	Thu 2/2/17	Thu 2/2/17	28FS+1 day	



Project: Preliminary Schedule 08-
Date: Fri 8/26/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
30							
31							
32							
33		**City Manager 7th Floor**	**113 days**	**Wed 10/12/1**	**Wed 3/29/17**		
34		Mobilization	3 days	Wed 10/12/1	Fri 10/14/16		
35		Demo	14 days	Mon 10/17/1	Thu 11/3/16	34	
36		Overhead MEPS	20 days	Fri 11/4/16	Tue 12/6/16	35	
37		Wall Framing	15 days	Mon 11/21/1	Tue 12/13/16	36SS+10 days	
38		Rough inwall MEP's	12 days	Fri 12/2/16	Mon 12/19/1	37SS+7 days	
39		Rough Framing Inspection	0 days	Tue 12/20/16	Tue 12/20/16	38FS+1 day	
40		Hang Drywall	10 days	Wed 12/21/1	Tue 1/10/17	39	
41		Drywall Screw Inspection	0 days	Wed 1/11/17	Wed 1/11/17	40FS+1 day	
42		Tape/Finish Drywall	16 days	Thu 1/12/17	Thu 2/2/17	41	
43		Paint	8 days	Fri 2/3/17	Tue 2/14/17	42	
		Install Door Frames	2 days	Wed 2/15/17	Thu 2/16/17	43	
		Install Ceiling Grid	6 days	Wed 2/15/17	Wed 2/22/17	43	
46		MEPS Finish Trim	6 days	Tue 2/21/17	Tue 2/28/17	45SS+4 days	
47		Install Millwork	2 days	Thu 2/23/17	Fri 2/24/17	45	
48		Overhead MEPS/Ceiling Inspe	0 days	Wed 3/1/17	Wed 3/1/17	46FS+1 day	
49		Install Ceiling Tiles	6 days	Thu 3/2/17	Thu 3/9/17	48	
50		Install Flooring	9 days	Wed 3/8/17	Mon 3/20/17	49SS+4 days	
51		Install Doors/Hardware	2 days	Tue 3/21/17	Wed 3/22/17	50	
52		Install Signage/Life Safety	1 day	Tue 3/21/17	Tue 3/21/17	50	
53		Final Clean	2 days	Tue 3/21/17	Wed 3/22/17	50	
54		Final Inspections	5 days	Wed 3/22/17	Tue 3/28/17	52	
55		Punch List walk	1 day	Thu 3/23/17	Thu 3/23/17	53	
56		Punch List	3 days	Fri 3/24/17	Tue 3/28/17	55	
57		Turn Over	0 days	Wed 3/29/17	Wed 3/29/17	56FS+1 day	



Project: Preliminary Schedule 08-
Date: Fri 8/26/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	Manual Progress
Summary	Inactive Task	Duration-only	Finish-only	

HAGGERTY CONSTRUCTION

Schedule of Values

08/24/16

Schedule of Values
Totals; by Phase/Division; with Notes
Job# 16152 to 16152, Phase 2 to 2

Item/Cost Code		Description	Amount
16152 City Hall Stockton Phase 2			
2 Construction			
1000	General Requirement		132,553.99
2000	Site Work		56,323.73
3000	Concrete		2,166.30
5000	Metals		866.52
6000	Woods & Plastics		25,270.94
7000	Therm/Moist Project		8,259.01
8000	Doors & Windows		77,631.82
9000	Finishes		357,137.91
10000	Specialties		3,624.21
13000	Special Construction		60,244.72
15000	Mechanical & Plumbing		195,387.01
16000	Electrical		423,533.84
		Phase Total:	**1,343,000.00**
		Grand Total:	**1,343,000.00**

Notes:

CITY OF STOCKTON

ECONOMIC DEVELOPMENT DEPARTMENT

Housing, Economic Development, Asset Management, and Parking Authority

City Hall • 425 North El Dorado Street, 3rd Floor • Stockton, CA 95202-1997 • 209/937-8539 • Fax 209/937-5099

www.stocktonca.gov

August 24, 2016

Haggerty Construction, Inc.
2474 Wigwam Drive #A
Stockton, Ca 95205
Attn: Dominique Fryer

LETTER OF INTENT

The City of Stockton intends to authorize, subject to City Council approval, a contract between the City and Haggerty Construction, Inc., for the construction of the tenant improvements for the City Hall Relocation 1st and 7th floor project (PUR_15-033) at 400 East Main Street in Downtown Stockton.

Formal approval by the Stockton City Council is anticipated to occur on September 27, 2016, after which a contract will be executed and a preconstruction meeting held authorizing Haggerty Construction to proceed with the terms of the agreement. In order to bring forward the construction contract for Council approval, the following information is required:

1. Proposed Construction Schedule
2. Schedule of Values

The above items are needed no later than Wednesday, August 31, 2016, in order to meet the submittal deadline for the September 27 Council meeting. Feel free to contact me at 209-937-8059 should you have any questions.

JANICE MILLER, DEPUTY DIRECTOR
ECONOMIC DEVELOPMENT DEPARTMENT

COREY CHATFIELD
PROJECT MANAGER

JM:CC

cc: Eric Wohle and Pete Rosado, LDA Partners