



# Technical Specification

## Humboldt County Jail Accessibility Improvements

PROJECT NUMBER: 2019-102



August 2020

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NOTICE TO CONTRACTORS

SECTION 00 00 20

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NOTICE IS HEREBY GIVEN that informal sealed bids are invited by the County Administrative Office/Purchasing Agent of Humboldt County, a public body, corporate and politic, for the performance of all the work and the furnishing of all the labor, materials, supplies, tools, and equipment for the following project:

CONSTRUCTION OF  
JAIL ACCESSIBILITY IMPROVEMENTS  
COUNTY OF HUMBOLDT  
PROJECT NUMBER: 2019-102

Pursuant to the Contract Documents on file with the County Administrative Office of Humboldt County.

A pre-bid meeting is scheduled for 2:00 PM, Pacific Daylight Time, September 29, 2020 at the Humboldt County Courthouse Conf. Room A, 825 5th Street, Eureka, California. Contract Documents, Plans, and Specifications will be available on September 15, 2020.

Each Bid must be contained in a sealed envelope addressed as set forth in said Bid Documents, and filed at the office of the Clerk of the Board of Supervisors of Humboldt County, 825 5th Street, Room 111, Eureka, California at or before 2:00 PM, Pacific Daylight Time, on October 6, 2020. All Bids will be publicly opened and summary amounts read aloud. The officer whose duty it is to open the Bids will decide when the specified time for the opening of Bids has arrived.

Plans and Specifications and other Contract Document forms will be available for examination at the County Administrative Office, Room 112, 825 5th Street, Eureka, CA, Phone: (707) 445-7266. Plans will also be available for viewing at area plan centers. Complete sets may be obtained from Nichols, Melburg & Rossetto, 300 Knollcrest Drive, Redding, CA 96002. Complete sets may be obtained upon advanced payment of \$100.00 each, 100 % of which shall be refunded upon the return of such sets unmarked and in good condition within ten (10) days after the bids are opened. Checks should be made payable to County of Humboldt.

Each Bid shall be submitted on the forms furnished by the County within the Bid Documents. All forms must be completed.

Each Bid shall be accompanied by one of the following forms of Bidder's Security to with a certified check or a cashier's check payable to the County, U.S. Government Bonds, or a Bid Bond executed by an admitted insurer authorized to issue surety bonds in the State of California (in the form set forth in said Contract Documents). The Bidder's security shall be in the amount equal to at least ten percent (10%) of the Bid.

The successful Bidder will be required to furnish and pay for a satisfactory faithful performance bond and a satisfactory payment bond in the forms set forth in said Bid Documents.

The County reserves the right to reject any or all Bids or to waive any informalities in any Bid. No Bid shall be withdrawn for a period of one-hundred (100) calendar days subsequent to the opening of Bids without the consent of the County.

All Bidders will be required to certify that they are eligible to submit a Bid on this project and that they are not listed either (1) on the Controller General's List of Ineligible Bidders/Contractors, or (2) on the debarred list of the Labor Commissioner of the State of California.

The successful Bidder shall possess a valid Contractor's license in good standing, with a classification of "B" (General Building Contractor) at the time the contract is awarded.

The successful Bidder will be required to comply with all equal employment opportunity laws and regulations both at the time of award and throughout the duration of the Project.

The Contractor and all Subcontractors are required to be registered with the Department of Industrial Relations pursuant to labor code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. A Contractor or Subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the Contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

The Contractor, and each subcontractor participating in the Project, shall be required to pay the prevailing wages as established by the Department of Industrial Relations, Division of Labor Statistics and Research, P.O. Box 420603, San Francisco, CA, Phone: (415) 703-4780.

The attention of Bidders is directed to the fact that the work proposed herein to be done will be financed in whole or in part with State and County funds, and therefore all of the applicable State and County statutes, rulings and regulations will apply to such work.

In the performance of this contract, the Contractor will not discriminate against any employee or applicant for employment in accordance with the provisions of the California Fair Employment and Housing Act. (Government Code section 12900 et seq)

In accordance with the provisions of Section 22300 of the Public Contractor's Code, the Contractor may elect to receive 100% of payments due under the contract from time to time, without retention of any portion of the payment, by entering into an Escrow Agreement for Security Deposits In Lieu of Retention.

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INSTRUCTIONS TO BIDDERS

SECTION 00 01 00

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Formal Sealed Bids will be received by the Clerk of the Board of Supervisors of the County of Humboldt, Humboldt County Courthouse, 825 5th Street, Room 111, Eureka, California 95501, until 2:00 PM, Pacific Daylight Time, on October 6, 2020 at which time they will be publicly opened by the Clerk of the Board of the County of Humboldt at a public meeting in the Office of the Clerk of the Board, for performance of the following work:

CONSTRUCTION OF  
HUMBOLDT COUNTY JAIL ACCESSIBILITY IMPROVEMENTS  
PROJECT NUMBER: 2019-102

**1. SECURING DOCUMENTS**

Plans and Specifications and other Contract Document forms will be available for examination at the County Administrative Office, Room 112, 901 5th Street, Eureka, CA, Phone: (707) 445-7266. Plans will also be available for viewing at area plan centers. Complete sets may be obtained through the Nichols, Melburg & Rossetto, 300 Knollcrest Drive, Redding, CA 96002 upon advanced payment of \$100.00 each, 100 % of which shall be refunded upon the return of such sets unmarked and in good condition within ten (10) days after the bids are opened. Checks should be made payable to County of Humboldt.

**2. BASIC INFORMATION**

These instructions pertain to the work (as hereinafter defined) to be performed under Agreement with the County of Humboldt (hereinafter sometimes called "Owner"):

<u>Owner</u>	<u>Humboldt County Board of Supervisors</u> 825 Fifth Street Eureka, CA 95501
Owner's Lead Agency:	County Administrative Office/Purchasing Agent County of Humboldt 825 5 <sup>th</sup> Street Eureka, California 95501 Phone: (707) 445-7266 Fax: 445-7299
Project Location:	Humboldt County Jail 901 5 <sup>th</sup> Street Eureka, CA 95501 Humboldt County, California
Architect:	Nichols, Melburg & Rossetto 300 Knollcrest Drive Redding, California 96002 Phone: (530) 222-3300

**3. RECEIPT OF BIDS.** Each bidder should mark its bid as "Bid for the Construction of Humboldt County Jail Accessibility Improvements." Bids shall be deemed to include the written responses to the bidder to any questions or requests for information of County made as part of bid evaluation process after submission of bid. Telephone and telefax proposals will not be accepted. County will reject all bids received after the specified time and will return such bids to bidders unopened.

**4. DETERMINATION OF APPARENT LOW BIDDER.** Apparent low bid will be based on the amount of the base bid listed of the Bid Form.

- 5. REQUIRED BID FORM.** All bidders must submit bids on the Section 00 30 00, the "Bid Form." County will reject as non-responsive any bid not submitted on the required form. Bids must be full and complete. Bidders must complete all bid items and supply all information required by the bidding documents and specifications. County reserves the right in its sole discretion to reject any bid as non-responsive as a result of any error or omission in the bid. Bidders may not modify the Bid Form or qualify their bids. Bidders must submit clearly and distinctly written bids. Bidders must clearly make any changes in their bids by crossing out original entries, entering new entries and initialing new entries. County reserves the right to reject any bid not clearly written. The Bid Form shall be signed by the bidder's legal representative as indicated on the Bid Form. If the bid is made by an individual, it shall be signed and his/her full name and his/her address shall be given; if it is made by a partnership, it shall be signed with the co-partnership name by a member of the firm, who shall sign his/her own name and provide the name and address of each member; and if it is by a corporation, the bid shall show the name of the corporation and the state under the laws of which the corporation was chartered. When the bid is signed by the duly authorized officer or officers of the corporation, it shall be attested by the corporate seal, and the names and titles of the principal officers of the corporation shall be given. When a bid is signed by an agent, other than the officer or officers of a corporation authorized to sign contracts on its behalf or a member of a partnership, a "Power of Attorney" must be filed with the County prior to opening bids or shall be submitted with the bid; otherwise, the bid may be rejected as irregular and unauthorized. Bids submitted as joint ventures must so state and be signed by each venturer.
- 6. CONTENTS OF BID ENVELOPE.** The bid envelope shall contain all of the following:

  - Section 00 30 00 - Bid Form
  - Section 00 41 00 - Bid Security Form (Bid Bond)
  - Section 00 43 00 - Subcontractor List
  - Section 00 44 00 - Non-collusion Affidavit
  - Section 00 45 00 - Responsibility/Non-responsibility
  - Section 00 46 00 - Public Contract Code 10232 Statement
  - Section 00 47 00 - Workers' Compensation Certification
  - Section 00 48 00 - Debarment and Suspension Certification
- 7. BID OPENING.** The County will stamp bids with the date and time of receipt. Bids will be opened and read publicly at the time and place indicated in Section 1 above. Bidders or their authorized agents may be present. After opening of bids, the County will review all bids for accuracy and reserves the right to correct obvious errors. Upon completion of review, the bids will be ranked by the bid amount and the apparent low bidder will be determined and notified.
- 8. FAILURE TO EXECUTE AND DELIVER DOCUMENTS.** IF the bidder to whom the Contract is awarded shall fail or neglect , with ten (10) calendar days from the date of the receipt of a notice of award, to execute and deliver all required Contract Documents and file all required bonds, insurance certificates and other documents, County may, in its sole discretion, deposit bidder's surety bond, cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for bidder's failure to enter into the Contract Documents. Bidder agrees that calculating the damages County may suffer as a result of bidder's failure to execute and deliver all required Contract Documents would be extremely difficult and impractical and that the amount of bidder's required bid security shall be the agreed and presumed amount of County's damages.
- 9. BIDDER'S BOND, PERFORMANCE BOND AND PAYMENT BOND.** Bid security must be submitted with the bid. The successful bidder, prior to execution of the Contract, must submit a Performance Bond in the full amount of the Contract. The successful bidder, prior to execution of the Contract, must submit a Payment Bond in the full amount of the Contract.
- 10. INSURANCE.** It is highly recommended that bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of the insurance certificates and endorsements required. A bidder, who executes the Contract and thereafter fails to comply strictly with the insurance requirements, will be deemed to be in breach of Contract.

- 11. RESERVATION OF RIGHTS:** County specifically reserves the right, in its sole discretion, to reject any or all bids, or re-bid, or to waive minor irregularities from bid requirements. If no bids are received, the County reserves the right to identify interested contractor(s) and negotiate directly without re-bidding.
- 12. SECURITIES IN LIEU OF RETENTION:** Public Contract Code Section 22300 gives the Contractor for option to deposit securities with an escrow agent as a substitute for retention earnings to be withheld by the County.
- 13. PRE-BID MEETING:** The Pre-Bid Meeting is scheduled for 2:00 PM, Pacific Daylight Time September 29, 2020 at the Humboldt County **Courthouse Conference Room A**, 825 5th Street, Eureka, California.
- 14. WITHDRAWAL OF BIDS.** Any bidder may withdraw his/her bid, either personally or by written request, any time prior to the scheduled closing time for receipt of bids.
- 15. QUESTIONS AND CLARIFICATIONS.** In order to avoid any misinterpretation or misrepresentation between the Bidder, the Architect and the County as regards the plans and specifications for the Project, neither the County nor Architect will respond to any verbal or telephone inquiries, however Bidders may submit written inquiries for clarifications or questions by email to the attention of Deven Carter, Project Architect. Nichols Melburg & Rossetto. Email: carter@nmrdesign.com. Any responses to written Bidder inquiries will be at the full discretion of the County, and any responses will be in writing in the form of an Addendum to these Contract Documents, which will be sent to all Bidders.
- 16. ADDENDA OR BULLETINS.** Any Addenda or Bulletins issued during the time of bidding or forming a part of the Documents loaned to the Bidder, for the preparation of his Bid, shall be covered in the Bid, and shall be made a part of the Contract.
- 17. BIDDERS INTERESTED IN MORE THAN ONE BID.**  
No person, firm, or corporation shall be allowed to make or file, or be interested in more than one bid for the same work, unless alternate bids are called for. A person, firm, or corporation, who has submitted a subproposal to a bidder, is not thereby disqualified from submitting a subproposal or quoting prices to the other bidders.
- 18. VISITING THE SITE & KNOWLEDGE OF PLANS & SPECIFICATIONS**  
Before submitting a bid for the work, it is recommended that the Bidder inspect the sites and inform himself as to the conditions under which he will be obligated to execute the work. A Pre-Bid meeting and walk-through are scheduled for this project. See Paragraph "13" above.

No allowance will be subsequently made for failure to inspect, and the Bidder will be solely responsible for the consequences of his negligence or lack of diligence. Before submitting any proposal, each Bidder shall examine the General Conditions, Plans, Specifications, as well as these Instructions to Bidders, and the forms appended hereto and made a part hereof.

**END OF SECTION**



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SPECIAL CONDITIONS

SECTION 00 01 10

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1. PROJECT DESCRIPTION

This project is located in Humboldt County in the City of Eureka. It consists of accessibility improvements for the Humboldt County Jail. The jail will remain in operation during the entire project.

- A. Project Location:  
Humboldt County Jail  
901 5th Street  
Eureka, CA 95501  
Humboldt County, California

2. ENGINEER'S ESTIMATE:

The engineer's estimate for the base bid is \$3,000,000. This is an estimate only and bidders should not rely upon this figure when preparing or submitting their bids.

3. TIME FOR COMPLETION

The Contractor shall complete the entire project within 365 calendar days from the County's issuance of the "Notice to Proceed".

4. LIQUIDATED DAMAGES

As actual damages for any delay in completion are impossible to determine, the Contractor and their sureties shall be liable for and shall pay to the County of Humboldt the sum of \$500.00 as fixed, agreed and liquidated damages for each calendar day of delay beyond the overall contract completion date until the work is completed and accepted.

5. SUBSTITUTIONS

- A. All pre-bid substitution requests for "equal" products or systems shall be submitted to the Owners Representative. 10 days prior to the contract bid opening date. All pre-bid substitution requests shall be submitted on the PRE-BID SUBSTITUTION REQUEST FORM - SECTION 00158, see Section 00 70 00, GC 27,B.
- B. Product substitution requests for products that are "equal" to specified products but not produced by an "Acceptable Manufacturer", per each technical specification shall be submitted within 35 days after the contract is awarded. All product substitution requests shall be submitted on the PRODUCT SUBSTITUTION REQUEST FORM; see Section 01 60 00, "Product Requirements."

6. ADDENDA

No addenda shall be issued within 48 hours of the designated Bid opening time. Any addenda resulting in material changes, addition, or deletion shall be issued at least 72 hours before the designated Bid opening time, otherwise the Bid time shall be extended by not less than 72 hours.

7. COMMUNICATIONS

- A. All notices, demands, requests, instructions, approvals, proposals, and claims must be in writing.
- B. Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Contract or at such other office as Contractor may from time to time designate in writing to the County of Humboldt or deposited in the United States mail in a sealed postage-prepaid envelope, or if delivered with charges prepaid to any delivery company for transmission, in each case addressed to such office.
- C. All papers required to be delivered to the County shall, unless otherwise specified in writing to the Contractor, be delivered to the County and any notice to or demand upon the County of Humboldt shall be mailed in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any delivery company for transmission to the County of Humboldt at such address, or to such other representatives of the County of Humboldt or to such other address as the County may subsequently specify in writing to the Contractor for such purpose.
- D. Any such notice shall be deemed to have been given as of the time of actual delivery; or, in the case of mailing, when the same should have been received in due course of post; or, in case of any delivery company, at the time of actual receipt.

8. MINIMUM RATES OF PAY

A schedule of the minimum rates of pay applicable to this Contract is on file at the principal office of Humboldt County Public Works at 1106 Second Street, Eureka, California, and shall be made available to any interested party on request.

9. JOB OFFICES

- A. The Contractor must designate an area to serve the posting requirements of this contract. On this board will be posted EEO and wage information in compliance with the General Conditions of this contract.
- B. The Contractor and their subcontractors may maintain such office and storage facilities on the site as may be necessary for the proper conduct of the work. These shall be located so as to cause no interference with any work to be performed on the site. The Owner's Representative shall be consulted with regard to locations.
- C. Upon completion of the project, or as directed by the County of Humboldt, Owner's Representative, the Contractor shall remove all such temporary structures and facilities from the site, same to become their property, and leave the premises in the condition required by the County.
- D. The Contractor shall furnish and maintain, during construction of the project, adequate facilities at the site to be designated by the County of Humboldt for the use of the County of Humboldt and the Architect.

10. PERFORMANCE AND PAYMENT BONDS

The company providing the required performance and payment bonds must be listed in U.S. Treasury Circular No. 570 as a surety approved to issue bonds securing Government contracts in the State of California.

11. NOISE ABATEMENT PROVISIONS

- A. Noise Affecting Existing Courthouse:
  - 1. The ground and second floor of the adjacent building contains an active courthouse including courtrooms, judge's offices and court operations. These areas are operated by the Superior Court of California, not by Humboldt County. Contractor's work shall not impact the court's operations. For all work that may impact the court's operations,

including excessive noise and vibration, the contractor shall coordinate and schedule in advance with the Owner's Representative and receive approval from the Owner's Representative.

2. The Owner's Representative and the Owner shall be the sole judges of permissible noise and vibration levels and they have the right to designate times when specific items of equipment may be used.
- C. Vibration Control: Provide ten (10) working days notice before conducting construction activities that might cause vibration, such as, but not limited to, drilling, demolition, compaction, etc.
- D. Noise Levels: Do not exceed an average continuous sound level of 72 dBA, measured at the perimeter of the work area, and do not exceed an impact noise level of 100 dBA measured at the perimeter of the work area, and only two impact occurrences between 72 dBA and 100 dBA are permitted in a one-hour period.
- E. Objectionable discernible noise transmitting is prohibited during normal Courthouse hours.

**END OF SECTION**

BID CHECKLIST  
SECTION 00 01 40

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The following documents shall be submitted by each Bidder, as part of their complete Bid:

1. Section 00300 - Bid Form
2. Section 00410 - Bid Security Form (Bid Bond)
3. Section 00430 - Subcontractor List
4. Section 00440 - Non-collusion Affidavit
5. Section 00450 - Responsibility/Non-responsibility
6. Section 00460 - Public Contract Code 10232 Statement
7. Section 00470 - Workers' Compensation Certification
8. Section 00480 - Debarment and Suspension Certification

**END OF SECTION**

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PRE-BID SUBSTITUTION FORM

SECTION 00 15 80

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PROJECT: Humboldt County Jail Accessibility Improvements      DATE: \_\_\_\_\_  
Project Number: 2019-102

Note to Contractor: All substitution requests for "equal" products or systems shall be submitted to the Owner's Representative, (10) ten days prior to the contract bid date.

We hereby submit for your consideration the following product in lieu of the specified item for the above project.

SECTION: \_\_\_\_\_ Paragraph: \_\_\_\_\_

Specified Item: \_\_\_\_\_

Proposed Substitution: \_\_\_\_\_

Attach completed technical data, including laboratory tests, if applicable.

Include complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Does the substitution affect dimensions shown on Drawings? \_\_\_\_\_(Yes) \_\_\_\_\_(No)

Will the undersigned pay for changes to the building design, including detailing costs caused by the requested substitution? \_\_\_\_\_(Yes) \_\_\_\_\_(No)

What effect does substitution have on other trades? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Differences between proposed substitution and specified item? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Manufacturer's guarantees of the proposed and specified items are:

Same \_\_\_\_\_ Different (Explain on attachment) \_\_\_\_\_

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By: \_\_\_\_\_

Signature: \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

FOR USE BY ARCHITECT:

\_\_\_\_\_ Accepted                      \_\_\_\_\_ Accepted as Noted

\_\_\_\_\_ Not Accepted                      \_\_\_\_\_ Received Too Late

By: \_\_\_\_\_ Date: \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

**END OF SECTION**

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BID FORM

SECTION 00 30 00

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TO  
THE COUNTY OF HUMBOLDT

CONSTRUCTION OF HUMBOLDT COUNTY JAIL ACCESSIBILITY IMPROVEMENTS

CONTRACT NUMBER 2019-102

Name of Bidder: \_\_\_\_\_

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

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Residence Address: \_\_\_\_\_

The work to be done shall be constructed in accordance with the Contract Documents, prepared by NMR Architects, Dated 2/13/2020, the Agreement annexed hereto and the General Prevailing Wage provisions as specified in the "Notice to Contractors".

Bids are submitted for the entire work. The amount of "The Bid" for comparison purposes will be the determination of the apparent low bid as specified in Section 00 01 00, "Instructions to Bidders".

The Bidder shall set forth for the Base Bid and each Alternate, if any, in clearly legible figures, a written lump sum price and a numeric lump sum price.

In case of a discrepancy between the two notated prices, the written price shall prevail, unless, however, if the amount set forth in writing is ambiguous, unintelligible or uncertain for any cause, or is omitted, then the amount set forth in the numeric column for the item shall prevail.

If this proposal shall be accepted and the undersigned shall fail to enter into the Contract and to give the two required bonds in the sums to be determined as aforesaid, with surety satisfactory to the Department of Public Works, within seven (7) days, not including Sundays and legal Holidays, after the Bidder has received notice from the Department that the contract has been awarded, the County may, at its option, determine that the Bidder has abandoned the Contract, and thereupon this Proposal and the acceptance thereof shall be null and void and the forfeiture of such security accompanying this Proposal shall operate and the same shall be the property of the County of Humboldt.

The undersigned, as Bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm, or corporation; that Bidder has carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and proposes and agrees if this proposal is accepted, that Bidder will contract with the County of Humboldt, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the material specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Architect as therein set forth, and that he will take in full payment therefor the following item prices to wit:

Receipt and compliance with the following Addenda to the Contract Documents is acknowledged:

1. Addendum No.\_\_\_\_ Dated\_\_\_\_\_
2. Addendum No.\_\_\_\_ Dated\_\_\_\_\_
3. Addendum No.\_\_\_\_ Dated\_\_\_\_\_
4. Addendum No.\_\_\_\_ Dated\_\_\_\_\_
5. Addendum No.\_\_\_\_ Dated\_\_\_\_\_

I, \_\_\_\_\_, as an agent for

\_\_\_\_\_, declare under penalty of perjury under the laws of the State of California, that the information contained in this Bid is true and correct.

Executed at \_\_\_\_\_, California, on \_\_\_\_\_, 2019

The project shall be complete within the time limits specified in Section 00 01 10, "Special Conditions." The undersigned is aware the Contract includes provisions for liquidated damages as specified in Section 00 01 10, "Special Conditions," if the Project is not completed within the agreed time of completion.

**THE UNDERSIGNED**, as Bidder, proposes the following:

**BASE BID:**

To furnish and complete the entire work as shown on the drawings and listed in the specifications, including required contract bonds and insurance, without additions or subtractions on account of specified alternates, for the sum of:



<b>Base Bid (Lump Sum):</b>	
_____	\$ _____
Total Amount in Words	Total

**Proposal Signature Page**

Accompanying this proposal is \_\_\_\_\_

(Insert the words "Cash (\$)", "Cashier's Check", "Certified Check", or "Bidder's Bond", as the case may be)

in the amount of at least ten percent (10%) of the total Bid Price submitted. The names of all persons interested in the foregoing proposal as Principals are as follows:

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

(NOTE: If a Bidder or other interested person is a Corporation, state the legal name of the corporation, also names of the president, secretary, treasurer, and manager thereof; if a Co-partnership, state the true name of the firm, also state the names of all individual co-partners composing the firm; if the Bidder or other interested person is an Individual, state the first and last names in full.)

Licensed in accordance with an Act providing for the registration of Contractors:

License No.: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Section 10162, and 10232, are true and correct and that the bidder has complied with the requirements of Section 8102 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulation, Part 29 Debarment and Suspension Certification are true and correct.

\_\_\_\_\_  
Signature of Bidder \_\_\_\_\_ Date

If a Bidder is a Corporation or a Co-partnership:

\_\_\_\_\_  
Name of Corporation or Firm Name of Co-partnership

Signatures of officer(s) or partners authorized to sign contracts on behalf of the Corporation or Co-partnership, Corporations require signature by 2 (two) corporate officers:

_____	_____
Name	Title
_____	_____
Name	Title

If Signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the Department prior to opening Bids or may be submitted with the Bid; otherwise the Bid will be disregarded as irregular and unauthorized.

Bidder's Business Address: \_\_\_\_\_

Place of Residence: \_\_\_\_\_

Date: \_\_\_\_\_

**END OF SECTION 00 30 00**

BID SECURITY FORM

SECTION 00 41 00

LET THE FOLLOWING BE KNOWN:

That \_\_\_\_\_, as Principal, and  
, a corporation, organized and existing under and by virtue of the laws of the State of  
and authorized to do surety business in the State of California, as Surety, are held and firmly bound unto the  
\_\_\_\_\_, State of California, as Obligee, in the sum of  
, Dollars (\$ \_\_\_\_\_), for the payment of which sum well and truly to be made, we, and each  
of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly  
by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to  
the County of Humboldt, State of California, for all work specifically described in the accompanying bid;

NOW, THEREFORE, if the aforesaid Principal is awarded the contract, and within the time and  
manner required under the specifications, after the prescribed forms are presented to Principal for signature,  
enters into a written contract in the prescribed form, in accordance with the bid, and files the two bonds, one  
guaranteeing faithful performance and the other guaranteeing payment for labor and materials as required by  
law, or if the said Principal shall fully reimburse and save harmless the Obligee from any damage sustained by  
the Obligee through failure of the Principal to enter into the written contract and to file the required  
performance and labor and material bonds, then this obligation shall be null and void; otherwise, it shall be and  
remain in full force and effect.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall  
pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the  
Court.

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

By: \_\_\_\_\_

By:

Principal (Seal)

Surety (Seal)

- NOTE:
- (1) Signature of those executing for the surety must be properly acknowledged.
  - (2) This bond must be in an amount equal to as least ten (10%) percent of the amount bid.
  - (3) Bidders must use this form unless the surety company form is substantially the same.

**END OF SECTION**

---

SUBCONTRACTOR LIST

SECTION 00 43 00

---

**LIST OF SUBCONTRACTORS**

**PROJECT NAME: HUMBOLDT COUNTY JAIL ACCESSIBILITY IMPROVEMENTS**

**PROJECT NUMBER: 2019-102**

The Bidder shall list all Subcontractors in accordance with Article 18 of the Supplementary General Conditions. All Subcontractors shall be listed with the Department of Industrial Relations to work on public works projects.

<u>Name of Subcontractor, CA Contractor License Number.</u>	<u>Address</u>	<u>Description of Work to be Performed</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
-----		
_____	_____	_____
_____	_____	_____
_____	_____	_____
-----		
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____

---

<u>Name of Subcontractor, CA Contractor License Number &amp; Dir. Reg. Number</u>	<u>Address</u>	<u>Description of Work to be Performed</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
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_____	_____	_____
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**END OF SECTION**

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NONCOLLUSION AFFIDAVIT

SECTION 00 44 00

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**TO THE COUNTY OF HUMBOLDT, DEPARTMENT OF PUBLIC WORKS**

Non-Collusion Affidavit

(Title 23 United States Code Section 112 and Public Contract Code Section 7106)

In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106 the Bidder declares that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the Bid is genuine and not collusive or sham; that the Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid, and they have not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other Bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the Bidder has not directly or indirectly, submitted their bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member of agent thereof to effectuate a collusive or sham bid.

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
Date

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

**END OF SECTION**

---

RESPONSIBILITY/NONRESPONSIBILITY

SECTION 00 45 00

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1. DETERMINATION OF BIDDER RESPONSIBILITY

- A. A responsible bidder is a bidder who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity and experience to satisfactorily perform the contract. It is the County's policy to conduct business only with responsible contractors. (Ord. 2291, § 1, 01/07/2003)
- B. Bidders are hereby notified that the County may determine whether the bidder is responsible based on a review of the bidder's performance on any contracts, including but not limited to County contracts. Particular attention will be given to violations of labor laws related to employee compensation and benefits, and evidence of false claims made by the bidder against public entities. This will include subcontractors and their employees as well.(Ord. 2291, § 1, 01/07/2003)
- C. The County may declare a bidder to be non-responsible for the purpose of this contract, if the Board of Supervisors, in its discretion, finds that the bidder has done any of the following: (1) committed any act or omission which negatively reflects on the bidder's quality, fitness or capacity to perform this contract with the County or a contract with any other public entity, or engaged in a pattern or practice which negatively reflects on same; (2) committed an act or omission which indicates a lack of business integrity or business honesty; or (3) made or submitted a false claim against the County or any other public entity. (Ord. 2291, § 1, 01/07/2003)
- D. If there is evidence that the apparent low bidder may not be responsible, the department shall notify the bidder in writing of the evidence relating to the bidder's responsibility, and its intention to recommend to the Board of Supervisors that the bidder be found not responsible. The department shall provide the bidder and/or the bidder's representative with an opportunity to present evidence as to why the bidder should be found to be responsible and to rebut evidence which is the basis for the department's recommendation. If the bidder fails to avail itself of the opportunity to rebut the department's evidence, the bidder may be deemed to have waived all rights of appeal. (Ord. 2291, § 1, 01/07/2003)
- E. If the bidder presents evidence in rebuttal to the department, the department shall evaluate the merits of such evidence, and based on that evaluation, make a recommendation to the Board of Supervisors. The final decision concerning the responsibility of the bidder shall reside with the Board of Supervisors. (Ord. 2291, § 1, 01/07/2003)
- F. These terms shall also apply to proposed [subcontracts/ subconsultants] of bidders on County contracts. (Ord. 2291, § 1, 01/07/2003)

2. DETERMINATION OF BIDDER DEBARMENT

- A. The bidder is hereby notified that the County may debar the bidder from bidding on other County contracts for a specified period of time, not to exceed three (3) years, and the County may terminate any or all of the bidder's existing contracts with the County, if the Board of Supervisors finds, in its discretion, that the bidder has done any of the following: (1) violated any term of a contract with the County; (2) committed any act or omission which negatively reflects on the bidder's quality, fitness, or capacity to perform a contract with the County or any other public entity, or engaged in a pattern or practice which negatively reflects on same; (3) committed an act or offense which indicates a lack of business integrity or business honesty; or (4) made or submitted a false claim against the County or any other public entity. (Ord. 2291, § 1, 01/07/2003)

- B. If there is evidence that the apparent low bidder may be subject to debarment, the department shall notify the bidder in writing of the evidence which is the basis for the proposed debarment, and shall advise the bidder of the scheduled date for a debarment hearing before the Contractor Hearing Board (CHB). (Ord. 2291, § 1, 01/07/2003)
- C. The CHB shall conduct a hearing where evidence on the proposed debarment is presented. The bidder and/or the bidder's representative shall be given an opportunity to submit evidence at that hearing. After the hearing, the CHB shall prepare a proposed decision, which shall contain a recommendation regarding whether the bidder should be debarred, and, if so, the appropriate length of time of the debarment. If the bidder fails to avail itself of the opportunity to submit evidence to the CHB, the bidder may be deemed to have waived all rights of appeal. (Ord. 2291, § 1, 01/07/2003)
- D. A record of the hearing, the proposed decision and any other recommendation of the CHB shall be presented to the Board of Supervisors, by the department head. The Board of Supervisors shall have the right to modify, deny or adopt the proposed decision and recommendation of the hearing board.(Ord. 2291, § 1, 01/07/2003)
- E. These terms shall also apply to proposed [subcontractors/ subconsultants] of bidder's on County contracts.(Ord. 2291, § 1, 01/07/2003)

**EVIDENCE OF RESPONSIBILITY / NONRESPONSIBILITY**  
(Humboldt County Code Sections 2141 et seq.)

The bidder shall, under penalty of perjury, answer each of the questions below and provide supporting documentation. The term "bidder" shall include any person associated with the bidder in the capacity of owner, partner, director, officer or manager.

- 1. Is the bidder under suspension, debarment, or determination of ineligibility by any federal, state or local agency?  No  Yes (explain)
- 2. Has the bidder been suspended, debarred, or determined ineligible by any federal, state or local agency within the preceding 5 years:  No  Yes (explain)
- 3. Is there pending against the bidder any proposed debarment or suspension proceeding?  
 No  Yes (explain)
- 4. Has the bidder been indicted, charged with, or convicted, or assessed civil or administrative penalties, or had a civil judgment rendered against it, in any matter involving:
  - (a) fraud, false claims, or dishonesty;
  - (b) any serious or wilful violation of the California Occupational Safety and Health Act of 1973 (Labor Code Sections 6300 et seq) or the Federal Occupational Safety and Health Act of 1970;
  - (c) violation of the state workers' compensation laws;
  - (d) violation of the Contractor's State License Law (Bus & Prof Code Sections 7000 et seq.)
  - (e) violation of prevailing wage laws;
  - (f) violation of state or federal environmental laws;
  - (g) violation of local laws related to permits, land use, or waste disposal? No  Yes (explain)

- 5. Has the bidder defaulted on a construction contract within the preceding 10 years?



No  Yes (explain)

6. Provide information concerning any bankruptcy or receivership of bidder, and information regarding all legal claims, disputes, or lawsuits (including administrative matters) arising from any construction project performed within the preceding 5 years, including information regarding any work completed by a surety.

NOTE: This information will not necessarily result in denial of award, but will be considered in determining bidder responsibility. Bidders are cautioned that making a false certification may subject the bidder to criminal prosecution.

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
Date

**END OF SECTION**

---

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

SECTION 00 46 00

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In accordance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a Federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a Federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

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Signature of Bidder

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Date

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

**END OF SECTION**

---

WORKERS' COMPENSATION CERTIFICATE

SECTION 00 47 00

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Labor Code Section 3700.

"Every employer except the State shall secure the payment of compensation in one or more of the foregoing ways:

- (a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.
- (b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to their employees."

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

Signature of Contractor: \_\_\_\_\_

Date: \_\_\_\_\_

In accordance with Article 5 [commencing at Section 1860], Chapter 1, Part 7, Division 2, of the Labor Code, the above certificate must be signed and filed with the awarding body prior to commencing any work under this contract.

**END OF SECTION**

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DEBARMENT AND SUSPENSION CERTIFICATION

SECTION 00 48 00

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TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The CONTRACTOR, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

1. is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal, State or local agency;
2. has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal, State or local agency within the past 3 years;
3. does not have a proposed debarment pending; and
4. has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.

The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

Signature of Contractor: \_\_\_\_\_

Date: \_\_\_\_\_

**END OF SECTION**

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AGREEMENT

SECTION 00 50 00

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This is an AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2019 by and between the County of Humboldt, a political subdivision of the State of California (hereinafter referred to as COUNTY) and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, a partnership consisting of \_\_\_\_\_; an individual doing business as \_\_\_\_\_ in the State of California, (hereinafter referred to as "CONTRACTOR").

County and Contractor for the consideration hereinafter named agree as follows:

**SECTION 1 - SCOPE OF WORK**

Contractor shall furnish all labor, tools and materials and perform all the work for the construction of:

**HUMBOLDT COUNTY JAIL ACCESSIBILITY IMPROVEMENTS  
PROJECT NUMBER: 2019-102**

in accordance with the Contract Documents referred to in Section 3 of this Agreement.

The scope of work includes the work included in the "Base Bid" for the project and the following bid alternatives: \_\_\_\_\_

**SECTION 2 - CONTRACT PRICE**

County shall pay, and Contractor shall accept Contractor's Price, as follows:

\_\_\_\_\_ Dollars and \_\_\_\_\_ /100 (\$ \_\_\_\_\_ )

as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this Agreement; also for all loss or damage, arising out of the work aforesaid, or from the actions of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by County, and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of the work and for well and faithfully completing the work, and the whole thereof, in the manner and according to the Plans and Specifications, and the requirements of the Owner.

**SECTION 3 - CONTRACT DOCUMENTS**

The complete contract between the parties hereto shall consist of the following, hereinafter referred to as the CONTRACT DOCUMENTS:

- Notice to Contractors
- Bid Form
- Bid Security Form
- This Agreement
- Payment Bond
- Performance Bond
- Insurance Certificates
- General Conditions
- Supplementary General Conditions
- General Requirements
- Technical Specifications
- Plans and Drawings
- Subcontractor List
- Non collusion Affidavit

- Public contract code Statement
- Special Conditions

- Evidence Of Responsibility/Non-responsibility
- Debarment suspension certification

And, as published by the California Department of Industrial Relations:

- General Prevailing Wage Rates

And any addenda to any of the above documents, all of which are on file in the office of the Director of Public Works of the County of Humboldt. Each of said CONTRACT DOCUMENTS is incorporated and made a part of this Agreement by the reference contained in this Section.

All rights and obligations of the County and the Contractor are fully set forth and described in the Contract Documents. All of the above named documents are intended to be complementary, so that any work called for in one, and mentioned in the other is to be performed and executed the same as if mentioned in all said documents.

#### **SECTION 4 - BEGINNING OF WORK**

Following receipt and full execution and approval of the Contract Documents, and posting of the requisite Bonds as called for therein, the COUNTY will issue a "Notice to Proceed". Under no circumstances shall the CONTRACTOR enter upon the site of work until receipt of the "Notice to Proceed", unless so authorized in writing by the COUNTY.

#### **SECTION 5 - TIME OF COMPLETION**

The work called for in this Agreement shall be commenced within ten (10) calendar days of the date of receipt by Contractor of the Notice to Proceed and shall be fully completed within 365 calendar days following receipt of the Notice to Proceed by the Contractor.

#### **SECTION 6 - PREVAILING WAGE**

Pursuant to Section 1770 of the Labor Code, the County has determined the Prevailing Wage Rate to be as listed by the Department of Industrial Relations, Division of Labor Statistics and Research, P.O. Box 420603, San Francisco, CA, 94101, Phone: (415) 703-4780. Complete Certified Payrolls must be submitted to the OWNER together with each application for progress payment. Electronic submittal directly to DIR may be required.

#### **SECTION 7 - WORKERS' COMPENSATION**

By my signature hereunder, as CONTRACTOR, I certify that I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

#### **SECTION 8 - NOTICES**

All notices shall be in writing and delivered in person or transmitted by mail. Notices required to be given to the COUNTY shall be addressed as follows:

County Administrative Office  
825 5<sup>th</sup> Street, Eureka, California, 95501

Notices required to be given to CONTRACTOR shall be addressed as follows:

**SECTION 9 - NUCLEAR FREE HUMBOLDT COUNTY ORDINANCE COMPLIANCE**

Neither the Contractor, his Subcontractors or their suppliers are Nuclear Weapons Contractors, and are not knowingly or intentionally engaged in the research, development, production, or testing of nuclear warheads, nuclear weapons systems, or nuclear weapons components, as defined by the Nuclear Free Humboldt County Ordinance. Contractor, his Subcontractors and/or their suppliers agree to notify Owner immediately if they become a nuclear weapons contractor as defined above.

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IN WITNESS WHEREOF, The parties hereto have entered into this Agreement as of the date first above set forth.

**COUNTY OF HUMBOLDT**

(SEAL)

By: \_\_\_\_\_  
Chairperson, Board of Supervisors of the County of Humboldt, State of California

ATTEST:

By: \_\_\_\_\_  
Clerk of the Board of Supervisors of the County of Humboldt, State of California

**CONTRACTOR:** Corporations require signature by 2 (two) corporate officers

By: \_\_\_\_\_

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

By: \_\_\_\_\_

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

APPROVED AS TO FORM:

By: \_\_\_\_\_  
Deputy County Counsel

INSURANCE CERTIFICATES REVIEWED AND APPROVED:

By: \_\_\_\_\_  
Risk Manager

**END OF SECTION**



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AGREEMENT

SECTION 00 50 00

---

This is an AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2019 by and between the County of Humboldt, a political subdivision of the State of California (hereinafter referred to as COUNTY) and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, a partnership consisting of \_\_\_\_\_; an individual doing business as \_\_\_\_\_ in the State of California, (hereinafter referred to as "CONTRACTOR").

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**HUMBOLDT COUNTY JAIL ACCESSIBILITY IMPROVEMENTS  
PROJECT NUMBER: 2019-102**

in accordance with the Contract Documents referred to in Section 3 of this Agreement.

The scope of work includes the work included in the "Base Bid" for the project and the following bid alternatives: \_\_\_\_\_

**SECTION 2 - CONTRACT PRICE**

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\_\_\_\_\_ Dollars and \_\_\_\_\_ /100 (\$ \_\_\_\_\_ )

as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this Agreement; also for all loss or damage, arising out of the work aforesaid, or from the actions of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by County, and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of the work and for well and faithfully completing the work, and the whole thereof, in the manner and according to the Plans and Specifications, and the requirements of the Owner.

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The complete contract between the parties hereto shall consist of the following, hereinafter referred to as the CONTRACT DOCUMENTS:

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- Bid Security Form
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- Payment Bond
- Performance Bond
- General Conditions
- Supplementary General Conditions
- General Requirements
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- Subcontractor List

- Insurance Certificates
- Public contract code Statement
- Special Conditions
- Non collusion Affidavit
- Evidence Of Responsibility/Non-responsibility
- Debarment suspension certification

And, as published by the California Department of Industrial Relations:

- General Prevailing Wage Rates

And any addenda to any of the above documents, all of which are on file in the office of the Director of Public Works of the County of Humboldt. Each of said CONTRACT DOCUMENTS is incorporated and made a part of this Agreement by the reference contained in this Section.

All rights and obligations of the County and the Contractor are fully set forth and described in the Contract Documents. All of the above named documents are intended to be complementary, so that any work called for in one, and mentioned in the other is to be performed and executed the same as if mentioned in all said documents.

#### **SECTION 4 - BEGINNING OF WORK**

Following receipt and full execution and approval of the Contract Documents, and posting of the requisite Bonds as called for therein, the COUNTY will issue a "Notice to Proceed". Under no circumstances shall the CONTRACTOR enter upon the site of work until receipt of the "Notice to Proceed", unless so authorized in writing by the COUNTY.

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#### **SECTION 7 - WORKERS' COMPENSATION**

By my signature hereunder, as CONTRACTOR, I certify that I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

#### **SECTION 8 - NOTICES**

All notices shall be in writing and delivered in person or transmitted by mail. Notices required to be given to the COUNTY shall be addressed as follows:

County Administrative Office  
825 5<sup>th</sup> Street, Eureka, California, 95501

Notices required to be given to CONTRACTOR shall be addressed as follows:



**CONTRACTOR:** Corporations require signature by 2 (two) corporate officers

By: \_\_\_\_\_

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

By: \_\_\_\_\_

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

APPROVED AS TO FORM:

By: \_\_\_\_\_  
Deputy County Counsel

INSURANCE CERTIFICATES REVIEWED AND APPROVED:

By: \_\_\_\_\_  
Risk Manager

**END OF SECTION**

SECTION 00 61 13

CONSTRUCTION PERFORMANCE BOND

This Construction Performance Bond ("Bond") is dated \_\_\_\_\_, is in the penal sum of \_\_\_\_\_ and is entered into by and between the parties listed below to ensure the faithful performance of the Construction Contract identified below. This Bond consists of this page and the Bond terms and Conditions, Paragraphs 1 through 13, attached hereto. Any singular reference to ("Contractor"), \_\_\_\_\_ ("Surety"), the County of Humboldt ("Owner") or other party shall be considered plural where applicable.

CONTRACTOR:

SURETY:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Principal Place of Business and Address

County of Humboldt  
c/o Humboldt County Public Works  
825 5<sup>th</sup> Street  
Eureka, California 95501

CONSTRUCTION CONTRACT:  
**[PROJECT NAME]**

Attn: PROJECT MANAGER

DATED \_\_\_\_\_, 20\_\_\_\_, in  
the amount of \$ \_\_\_\_\_.

CONTRACTOR AS PRINCIPAL  
Company: \_\_\_\_\_ (Corp. Seal)

SURETY  
Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

\_\_\_\_\_  
Name and Title:

\_\_\_\_\_  
Name and Title:

\_\_\_\_\_  
Address

BOND TERMS AND CONDITIONS

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Owner for the complete and proper performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor completely and properly performs all of its obligations under the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond.
3. The Surety's obligation under this Bond shall arise after Owner has declared a Contractor Default under the Construction Contract pursuant to the terms of the Construction Contract.

Upon declaring the Contractor in default, the Owner shall make the Balance of the undisputed Contract Sum available to the Surety for completion of the work on the Project under the Construction Contract.

4. When Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly, and in no event later than fifteen (15) working days after receipt of the notice of default, and at the Surety's sole expense, confirm in writing as to its election to take one of the following actions:
  - A. Arrange for the Contractor, with consent of Owner, to perform and complete the Construction Contract (but Owner may withhold consent in its sole discretion (with or without cause), in which case the Surety must immediately elect option 4B, 4C or 4D, below), and that such performance shall commence within an additional thirty (30) calendar days; or
  - B. Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors (other than the Contractor), and that such performance shall commence within an additional thirty (30) calendar days; or
  - C. As promptly as reasonably possible, obtain bids from qualified, responsible contractors (other than the Contractor) acceptable to Owner for a contract for performance and completion of the Construction Contract, and, upon determination by Owner that the contractor selected with Owner's concurrence is responsible, and subject to full compliance with all applicable laws as may be required (including, without limitation, any applicable competitive bidding and public contracting and procurement requirements pursuant to California and/or Federal laws, if applicable), arrange for a contract to be prepared for execution by Owner and the contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract and subject to the consent of Owner; and, if the Surety's obligations defined in Paragraph 6 exceed the Balance of the Contract Sum, then the Surety shall pay to Owner the amount of such excess; or
  - D. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and subject to its investigation and consultation with Owner, determine in good faith the amount for which it may then be liable to Owner under Paragraph 6 for the performance and completion of the Construction Contract and, within ten (10) additional calendar days, tender payment therefor to Owner with full explanation of the payment's calculation. If Owner accepts the Surety's tender under this paragraph 4(D), the Surety shall remain liable for future damages, then unknown or unliquidated, and including, without limitation, additional costs incurred to complete the Construction Contract and any unsatisfied liquidated damages, resulting from the Contractor Default. If Owner disputes the amount of Surety's tender under this paragraph 4(D), Owner may exercise all remedies available to it at law to enforce the Surety's liability under paragraph 6.
5. If the Surety does not proceed as provided in Paragraph 4, then the Surety shall be deemed to be in default on this Bond ten (10) calendar days after receipt of an additional written notice from Owner to the Surety demanding that the Surety perform its obligations under this Bond. At all times Owner shall be entitled to enforce any remedy available to Owner at law or under the Construction Contract including, without limitation, and by way of example only, rights to perform

- work, protect work, mitigate damages, or coordinate work with other consultants or contractors.
6. The Surety's monetary obligations under this Bond are commensurate with the obligations of the Contractor under the Construction Contract. The Surety's obligations shall include, but are not limited to:
    - A. The responsibilities of the Contractor under the Construction Contract for completion of the Construction Contract and correction of defective, deficient and/or non-compliant work;
    - B. The responsibilities of the Contractor under the Construction Contract to pay liquidated damages, and for damages for which no liquidated damages are specified in the Construction Contract, actual damages, and all damages caused by non-performance or lack of proper performance of the Construction Contract, including but not limited to, all valid and proper backcharges, offsets, payments, indemnities, and/or other damages;
    - C. Additional administrative, management, legal, design professional and delay costs resulting from the Contractor Default or resulting from the actions or failure to act of the Surety under Paragraph 4.
  7. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.
  8. The Surety hereby waives notice of any change, alteration or addition to the Construction Contract or to related subcontracts, purchase orders and other obligations, including changes of time. The Surety consents to all terms of the Construction Contract, including provisions on changes to the Contract. No extension of time, change, alteration, modification, deletion, or addition to the Contract Documents, or of the work required thereunder, shall release or exonerate Surety on this Bond or in any way affect the obligations of Surety on this Bond.
  9. Any proceeding, legal or equitable, under this Bond shall be instituted in the Superior Court for the County of Humboldt.
  10. As a part of the obligation secured under this Bond, and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees and expert costs, incurred by the County in successfully enforcing any obligation arising under this Bond, all to be taxed as costs and included in any judgment rendered.
  11. Notice to the Surety, Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
  12. Any provision in this Bond conflicting with any statutory or regulatory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein.
  13. Definitions.
    - A. Balance of the Contract Sum: The total amount payable by Owner to the Contractor pursuant to the terms of the Construction Contract after all proper adjustments have been made under the Construction Contract, for example, deductions for progress payments made, and increases/decreases for approved modifications to the Construction Contract.
    - B. Construction Contract: The agreement between Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
    - C. Contractor Default: Material failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

END OF DOCUMENT



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PAYMENT BOND

SECTION 00 61 14

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KNOW ALL MEN BY THESE PRESENTS, THAT WHEREAS, the County of Humboldt, by its order made \_\_\_\_\_, 20\_\_\_\_, has awarded to \_\_\_\_\_, hereinafter designated as the "Principal," a contract for the work described as follows:

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NOW, THEREFORE, we the Principal and \_\_\_\_\_, Surety, are held and firmly bound unto the County of Humboldt in the penal sum of Dollars (\$\_\_\_\_\_), lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his/her or its heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Section 9100 of the Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, any prevailing wages due and penalties incurred pursuant to the California Labor Code or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the wages of employees of the Contractor and their subcontractors pursuant to Section 18806 of the Revenue and Taxation Code with respect to such work and labor as required by Sections 9550 et seq. of the Civil Code of California, then said Surety will pay for the same, in or to an amount not exceeding the amount set forth herein, and also will pay in case suit is brought upon this bond, such reasonable attorney's fees, as shall be fixed by the court, awarded and taxed as in the above-mentioned statutes provided.

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

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

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
SURETY

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

BY \_\_\_\_\_  
ATTORNEY-IN-FACT

END OF SECTION 00 61 14

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PAYMENT BOND  
SECTION 00 62 00

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LET THE FOLLOWING BE KNOWN, THAT WHEREAS, the County of Humboldt, by its order made \_\_\_\_\_, 20\_\_\_\_, has awarded to \_\_\_\_\_, hereinafter designated as the "Principal," a contract for the work described as follows:

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

NOW, THEREFORE, we the Principal and \_\_\_\_\_, Surety, are held and

THE CONDITION OF THIS OBLIGATION IS SUCH that is said Principal, his/her or its heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Section 9100 of the Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the wages of employees of the Contractor and their subcontractors pursuant to Section 18806 of the Revenue and Taxation Code with respect to such work and labor as required by Sections 9550 et seq. of the Civil Code of California, then said Surety will pay for the same, in or to an amount not exceeding the amount hereinafter set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fees, as shall be fixed by the court, awarded and taxed as in the above-mentioned statutes provided.

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

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

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
SURETY

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

BY \_\_\_\_\_  
ATTORNEY-IN-FACT

**END OF SECTION**

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GENERAL CONDITIONS

SECTION 00 70 00

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**GC 1. DEFINITIONS**

- A. COUNTY: The term "County", or pronouns in place of same where used herein, shall mean Humboldt County acting through its Board of Supervisors.
- B. BOARD: The term "Board", or pronouns in place of same where used herein, shall mean the Humboldt County Board of Supervisors.
- C. OWNER: The "Owner" is the person or entity identified as such in the Owner-Contractor Agreement; the term Owner means the Owner or their authorized representative.
- D. ARCHITECT: The term "Architect" shall mean, Nichols, Melburg & Rossetto as employed by the Owner.
- E. CONTRACTOR: The term "Contractor", where used herein, shall mean the Contractor to whom the contract for the work described and specified herein has been awarded by the Board.
- F. PLANS AND SPECIFICATIONS: The term "Plans and Specifications", where used herein, shall mean and include all specifications and provisions of every kind, whether general, detailed or otherwise, relating to the equipment, material of work, and the installation thereof, and the plans and drawings accompanying same which are made a part thereof. Such Plans and Specifications are recognized as instruments of professional service.
- G. OWNER'S REPRESENTATIVE: The term "Owner's Representative" shall mean agent assigned to the Project by Humboldt County Department of Public Works.
- H. PROJECT INSPECTOR: The term "Project Inspector" shall mean agent assigned to the Project by Humboldt County Department of Public Works.

**GC 2. CONTRACT**

- A. The Contract Documents include all documents identified as such in the Agreement (Section 00500), any amendments and Change Orders thereto
- B. In the execution of the work or any portion thereof, Contractor shall operate as an independent contractor and not as the agent of Owner or Architect.
- C. No verbal agreement or conversation with any officer, agent, or employee of Owner or Architect, either before or after execution of the Agreement, shall affect or modify any terms or obligations of the Contract unless duly incorporated into the Contract by written Change Order or amendment of the Contract.
- D. The Contract Documents shall not be construed to create any contractual relationship of any kind between the Architect and the Contractor, but the Architect shall be entitled to performance of obligations intended for their benefit, and to enforcement thereof. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner or the Architect and any subcontractor or sub-subcontractor.

**GC 3. BONDS**

- A. The successful bidder, simultaneously with the execution of the Agreement, will be required to furnish a Payment Bond in an amount equal to one hundred (100%) percent of the contract price, and a faithful Performance Bond in an amount equal to one hundred (100%) percent of the contract price. The Contractor must submit a certificate from the Humboldt County Clerk's Office with all payment bonds. The Clerk's certificate must indicate that the surety is admitted to transact business in the State of California, and certify that the surety's certificate of authority, issued by the Insurance Commissioner, has not been suspended, revoked, canceled, or annulled.
- B. The bonds shall comply with Section 9554 of the Civil Code of the State of California. The payment Bond and the faithful Performance Bond shall each be in a form that is satisfactory to the County Counsel, or Risk Management of the County of Humboldt. A copy of an acceptable format is attached to the Agreement forms of these specifications.

**GC 4. INSURANCE REQUIREMENTS**

- A. THIS CONTRACT/AGREEMENT SHALL NOT BE EXECUTED BY COUNTY and the CONTRACTOR is not entitled to any rights, unless certificates of insurance, or other sufficient proof that the following provisions have been complied with, and such certificate(s) are filed with the Clerk of the Humboldt County Board of Supervisors.
- B. Without limiting Contractor's indemnification provided herein, Contractor shall and shall require any of its subcontractors to take out and maintain, throughout the period of this Agreement, the following policies of insurance placed with insurers with a current A.M. Bests rating of no less than A:VII or its equivalent against injury/death to persons or damage to property which may arise from or in connection with the activities hereunder of Contractor, its agents, employees or subcontractors:
  - 1. The County, its officers, employees and agents, are covered as additional insured for liability arising out of the operations performed by or on behalf of Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the County, its officers, agents, and employees.
  - 2. The policy shall not be canceled or materially reduced in coverage without thirty (30) days prior written notice (10 days for non-payment of the premium) to County by certified mail.
  - 3. The inclusion of more than one insured shall not operate to impair the rights of one insured against another insured, and the coverage afforded shall apply as though separate policies had been issued to each insured, but the inclusion of more than one insured shall not operate to increase the limits of the insurer's liability.
  - 4. For claims related to this project, the Contractor's insurance is primary coverage to the County, and any insurance or self-insurance programs maintained by the County are excess to Contractor's insurance and will not be called upon to contribute with it.
  - 5. Any failure to comply with reporting or other provisions of the parties, including breach of warranties, shall not affect coverage provided to County, its officers, employees, and agents.
- C. Comprehensive or Commercial General Liability Insurance at least as broad as Insurance Services Office Commercial General Liability coverage (occurrence from CG 0001), in an amount of \$2,000,000 per occurrence. If work involves explosive, underground or collapse risks, XCU must be included. If a general aggregate limit is used, either the general aggregate limit shall apply separately to this project or the general aggregate shall be \$5,000,000. Said policy shall contain, or be endorsed with, the following provisions:
  - 1. The County, its officers, employees and agents, are covered as additional insured for liability arising out of the operations performed by or on behalf of Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the County, its officers, agents, and employees.
  - 2. The policy shall not be canceled or materially reduced in coverage without thirty (30) days prior written notice (10 days for non-payment of the premium) to County by certified mail.
  - 3. The inclusion of more than one insured shall not operate to impair the rights of one insured against another insured, and the coverage afforded shall apply as though separate policies had been issued to each insured, but the inclusion of more than one insured shall not operate to increase the limits of the insurer's liability.
  - 4. For claims related to this project, the Contractor's insurance is primary coverage to the County, and any insurance or self-insurance programs maintained by the County are excess to Contractor's insurance and will not be called upon to contribute with it.
  - 5. Any failure to comply with reporting or other provisions of the parties, including breach of warranties, shall not affect coverage provided to County, its officers, employees, and agents.
- D. Automobile liability insurance with coverage at least as broad as Insurance Services Office form CA 0001 06092, Code 1 (any auto), for vehicles used in the performance of this Agreement with minimum coverage of not less than \$1,000,000 per accident combined single limit (CSL). Such policy shall contain or be endorsed with the provision that coverage shall not be canceled or materially reduced in coverage without thirty (30) days prior written notice (10 days for non-payment of premium) to County by certified mail.

- E. Workers' Compensation insurance meeting statutory limits of the California Labor Code which policy shall contain or be endorsed to contain a waiver of subrogation against County, its officers, agents, and employees and provide for thirty (30) days prior written notice in the event of cancellation.
- F. If applicable, Builder's Risk or Course of Construction, written on an "All-Risk" form, for 100% of the completed value of the insurable part of the project. The Builder's Risk policy shall provide for losses to be payable to County and the Contractor as their interests may appear, and that in the event of payment for any loss under the coverage provided, the insurer shall have no rights of recovery against County and Contractor.
- G. Contractor shall furnish County with certificates and original endorsements effecting the required coverage prior to execution of this Agreement by County. The endorsements shall be on forms as approved by the County's Risk Manager or County Counsel. Any deductible or self-insured retention over \$100,000 shall be disclosed to and approved by County. If Contractor does not keep all required policies in full force and effect, County may, in addition to other remedies under this Agreement, take out the necessary insurance, and Contractor agrees to pay the cost of said insurance.
- H. SUBCONTRACTORS: Should contractor subcontract any portion of the work to be performed under this Agreement, said subcontractors shall be required by contractor to:
  - 1. Enter into a written contract with contractor acknowledging that no employee/employer relationship exists between contractor and subcontractor and that no Workers' Compensation, unemployment benefits, or other personnel benefits are required by or available to subcontractor through contractor or County.
  - 2. Hold harmless and to indemnify, defend and save harmless contractor and County, its Board of Supervisors, officers, agents, employees and volunteers, from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, material suppliers, laborers, and any other person, firm or corporation who may be injured or damaged by subcontractor in the performance of this Agreement.
- I. HOLD HARMLESS/INDEMNIFICATION CLAUSE

Pursuant to Government Code section 895.4, the parties to this Agreement shall indemnify, defend and hold harmless the other parties hereto and their officers, agents, and employees, from any and all claims, demands, losses, damages, and liabilities of any kind or nature, including attorney's fees, which arise by the virtue of its own acts or omissions (either directly or through or by its officers, agents or employees) in connection with its duties and obligations under this Agreement and any amendments hereto.

Acceptance of insurance, if required by this Agreement, does not relieve Contractor from liability under this indemnification clause. This indemnification clause shall apply to all damages or claims for damages suffered by Contractor's operations regardless if any insurance is applicable or not.

**GC 5. TERMINATION OF CONTRACT**

- A. Each of these general conditions, whether preceding or following this paragraph, is to be considered material and failure to comply with any of such conditions by the Contractor will be deemed a breach of contract.
- B. Should the Contractor fail to perform any of the provisions of the Contract, the Owner shall have the right, whether or not an alternative right is provided, to declare the Contract terminated. A written notice by the Owner to the Contractor that the Contract is terminated shall be deemed a complete termination of same.

C. On the Contract being so terminated, the Contractor shall, provided Contractor is ordered to do so by the Owner, immediately remove from the premises all or any materials and personal property belonging to Contractor which have not been used in the construction of the Work or which is not in place in the Work; and both Contractor and their surety shall be liable upon their bond for all damages caused to the Owner by reason of failure to complete the Contract.

D. See GC Article 29, SUFFICIENT LABOR OR MATERIAL.

**GC 6. NON-CONTINUANCE OF WORK**

A. Should the Contractor at any time during the progress of the Work refuse, neglect or be unable for any reason, except the documented inability to supply a sufficiency of materials or workmen necessary, to complete the Work within the time specified in the Contract, the Owner shall have the power to terminate the Contract as prescribed.

**GC 7. ASSIGNMENT OF CONTRACT**

A. The Contractor shall not assign or sublet the Contract in whole or in part without the prior written consent of the Owner. The Contractor shall not assign any monies due or to become due to them under the Contract without the prior written consent of the Owner.

B. Any assignments permitted under these documents or approved by the Owner shall, in addition, have prior written approval of all sureties of the Contractor executing bonds or insurance in the interest of this Contract.

C. If the Contractor seeks to assign any portions or monies as permitted, Contractor shall pay to the Owner \$1,000 to cover Owner's costs each time an assignment occurs.

**GC 8. SEPARATE CONTRACTS**

A. The Owner reserves the right to let other contracts in connection with this Project. The Contractor shall afford all other such contractors reasonable opportunity for storage of their materials; shall provide that the execution of their work properly connects and coordinates with theirs; and shall cooperate with them to the end of facilitating the Work.

B. The work performed or executed under other contracts in advance of work under this Contract shall be inspected and determined to be in proper condition by the Contractor before permitting related or connecting work to proceed under this Contract.

C. Contractor shall immediately notify Architect of any discrepancies, defects or other conditions found unsuitable for proper execution of the work.

**GC 9. CONFERENCES**

A. At any time during the progress of the Work, the Owner, Owner's Representative, or Architect shall have authority to require the Contractor to attend a conference of any or all of the contractors engaged in the Work; and any notice of such conference shall be duly observed and complied with by the Contractor.

**GC 10. TERMS OF PAYMENT**

A. At the end of each calendar month, the Contractor shall submit to the Owner's Representative a statement of all materials actually placed in the building during the month, the labor expended thereon, and the cost thereof; whereupon after verification by the Owner's Representative it is



found to be acceptable, a certificate for the amount less five percent (5%) thereof will be issued by the Owner's Representative except that no certificate will be issued for defective work and materials until they have been removed, replaced and made good. The Owner will also pay the costs of material on hand under the following conditions: Written approval is given by the Owner's Representative prior to requesting payment. Approved items have been inventoried by the Owner's Representative and they are stored in a safe and weather protected manner, and are major items that delay in receiving will adversely affect the construction time schedules. The Owner's Representative will issue a certificate for the certified invoice amount, less five percent (5%) thereof. The Contractor shall be paid monthly as the work progresses, the amount of each such certificate. Final payment shall be made in accordance with E. below.

- B. As a basis for determining the amount of monthly payments, the Contractor shall, before commencing the work, submit to the Owner's Representative for approval a detailed statement of all materials and labor included in their original estimate. This statement shall be so arranged that the value of the work as it progresses may be readily determined. Payment for change order work will be made if the change order work is complete and is approved prior to the Owner's Representative issuing the monthly certification of payment. The regular initial schedule of values shall be prepared and submitted by Contractor twenty (20) calendar days in advance of the time the first request for payment is due, allowing sufficient time for review, approval and modifications as may be required prior to use for said first payment. The total sum of the schedule of values shall equal the Contract Price.
- C. Acceptance of any work and payments therefore shall be made upon written recommendation of the Owner's Representative and Architect.
- D. Payments to the Contractor will be made within 30 days of an approved pay estimate in accordance with Owner's regular approval and accounting procedures, based upon statements or certificates received as issued or approved by the Owner's Representative, including written certification that complete certified payroll records have been, or will be, submitted to the Labor Commissioner as required by the California Labor Code.
- E. Thirty-five (35) days after the acceptance of the work by the Owner's Representative and Architect (provided the project has been accepted by the Board of Supervisors), the Contractor shall be entitled to the balance due for the completion and acceptance of the work, provided that all claims for labor and materials have been paid, and that no claims shall have been filed with the County based upon acts or omissions of the Contractor and that no stop notices have been filed.

**GC 11. CONFLICTS OR ERRORS**

- A. During construction, if any conflicts are discovered in the plans or specifications, they shall be immediately submitted to the Owner's Representative who will render an interpretation on what was intended and the Contractor agrees to furnish all things necessary by such interpretation to the satisfaction of the Owner's Representative without additional expense to the Owner.
- B. The Contractor shall not contend that any error, delay or default in their work is due to omission or ambiguity in said plans or specifications.
- C. If errors are found in the Construction Documents that can not be termed conflicts (shown, sized or called out differently in different places) the Contractor shall immediately notify the Owner's Representative within 15 calendar days following the discovery of any error so that a change order can be prepared and the item corrected prior to construction.
- D. Refer to G.C. 24, Unity of Documents.

**GC 12. CHANGES TO PLANS AND SPECIFICATIONS**

- A. No modification or deviation from plans and specifications will be permitted by the Contractor without prior written consent of Owner. However, within the limits allowed by law, the Contractor

agrees that Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to, or deducting from the Work, the contract sum being adjusted accordingly, and that Contractor will enter into a modification of the original contract to make such changes by means of a written Change Order.

- B. Change Orders shall be signed by the Contractor, Architect and authorized representative of the Owner.
- C. All such work shall be executed under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change. Both parties agree that the credit to, or charge against the Owner shall be determined as follows:
  - 1. In the event that a modification results in a reduction of the amount of labor and material to be supplied by the Contractor, the Owner shall be given a credit equal to the actual value of such labor and materials plus a reasonable amount for the use of tools, materials and overhead and profit; or, in the event that a modification results in an increase in the amount of labor and materials to be supplied by the Contractor, the Owner shall pay the Contractor the actual value of such labor materials and equipment plus not more than 15% which shall cover the use of Contractor's overhead and profit. In no case shall the total of any subcontractor(s) together with the Contractor's overhead, profit, bonds and insurance exceed 15%. All costs shall be included as a lump sum price on change orders.
  - 2. Cost Estimates for all changes shall be submitted by the Contractor to the Owner's Representative for checking by the Owner's Representative and Architect. The Contractor shall submit all Cost Estimates within 15 calendar days following the discovery of any potential change. The Owner's Representative shall render a written decision as to reasonable costs within 15 calendar days of receiving cost estimate unless more time is agreed to by both Contractor and Owner's Representative.
  - 3. Any increases in cost or extension of time shall be approved by the Owner's Representative, Architect and Owner, on a signed change order.
  - 4. In the event that the Contractor, for whatever reason, does not accept the dollar amount of increase or decrease or extension of time to the contract amount in the decisions rendered by the Owner, Contractor shall, upon receiving written order from the Owner, proceed with the work called for in the Change Order on a force account basis. Any claim for dollar increases or extension of time shall be made in writing to the Owner's Representative in accordance with the provisions of GC 51, Claims Procedures.
- D. In response to a request for a proposed modification, Contractor shall promptly furnish within 15 calendar days, relevant cost breakdowns, time estimates and other information as may be required to the Owner's Representative.

**GC 13. GUARANTEE**

- A. The Contractor shall be held responsible to make-good any defects due to faulty, improper or inferior workmanship or materials arising or discovered in any part of the Work within one (1) year after the completion and final acceptance of the same by the Owner's Representative, Architect and Owner unless a longer period is called for in the Technical Specification Sections.
- B. Acceptance of the Work by the Owner's Representative, Architect or Owner shall in no way absolve the Contractor from the responsibility of complying with the provisions of the plans and specifications and other contract documents, even though deviations may not be discovered within the aforementioned one year period.
- C. The bond for faithful performance furnished by the Contractor shall cover such defects and protect the Owner against them and remain in force during the one year guarantee period.

**GC 14. INTERPRETATIONS**

- A. The Contractor shall comply with the obvious intent and meaning of the plans and specifications which shall be construed to include all material, measures and modes or work necessary to complete the work required in a workmanlike manner, in strict accordance with these plans and specifications, and to the satisfaction of the Owner.
- B. Should any question arise as to the intent and interpretation of the plans or specifications, the Contractor shall promptly, upon discovery thereof, refer the same in writing to the Owner's Representative, whose decision thereon shall be final.

**GC 15. DECISIONS BY ARCHITECT AND/OR OWNER'S REPRESENTATIVE**

- A. The Owner's Representative shall, in all cases, determine whether the amount and quality of the several kinds of work which are to be paid for under the Contract are in accordance with the plans and specifications.
- B. The Owner's Representative shall have power to cause all or any part of the work to be expedited with greater diligence when delayed or stopped.
- C. When requested by the Owner's Representative, the Architect's decisions in matters relating to artistic effect will be final if consistent with the intent of the Contract Documents.
- D. Where not involving a change in the agreed Contract Price or Completion Time, and not inconsistent with the intent of the Contract Documents, the Owner's Representative shall have authority to:
  - 1. Correct any errors or inconsistencies in, and make any deletions from or additions to the drawings and specifications;
  - 2. Order minor changes or adjustments in the work, whether by field order, notations on Contractor's submittals, or other instructions;
  - 3. Order certain portions of the work delayed when particularly involved with or affected by any Change Order in process or being considered by Owner.
- E. The Owner's Representative will be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder by both the Owner and Contractor.
- F. The Architect through the Owner's Representative will render interpretations necessary for the proper execution or progress of the Work, with reasonable promptness and within fifteen calendar days.
- G. Claims, disputes and other matters in question between the Contractor and the Owner relating to the execution or progress of the Work or the interpretation of the Contract Documents shall be referred to the Owner's Representative for decision which the Owner's Representative will render in writing with a reasonable promptness and within fifteen calendar days.

**GC 16. ADMINISTRATION OF THE CONTRACT**

- A. The Owner's Representative will provide administration of the Contract. Maintenance of the Project records for the contract shall be as prescribed by the Owner's Representative and as hereinafter described.
- B. The Owner's Representative will be the representative of the Owner during construction and until final payment is due. The Architect will advise and consult with the Owner's Representative and Owner. The Owner's instruction to the Contractor shall be forwarded through the Owner's Representative. The Owner's Representative will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument.

- C. The Owner's Representative or Architect will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Owner's Representative or Architect will not be responsible for or have control acts or omissions of the Contractor, Subcontractors, or any of their agents or employees, or any other persons performing any of the Work.
- D. The Owner's Representative and Architect shall at all times have access to the Work wherever it is in preparation and progress. The Contractor shall provide facilities for such access so the Owner's Representative and Architect may perform their functions under the Contract Documents.
- E. Based on the Owner's Representative and Architect's observations and an evaluation of the Contractor's Applications for Payment, the Owner's Representative will determine the amounts owing to the Contractor and will issue Certificates for Payment in such amounts as provided in GC Article 10.
- F. The Owner's Representative shall, upon receipt of a complete submittal from the Contractor, make the submission to the Architect. The Architect shall review and take appropriate action on shop drawings, product data, samples, and other submittals required by the Contract Documents. Such review shall be only for general conformance with the design concept and general compliance with the information given in the Contract Documents. It shall not include review of quantities, dimensions, weights or gauges, fabrication processes, construction methods, coordination with the work of other trades, or construction safety precautions, all of which are the sole responsibility of the Contractor. The Architect's review shall be conducted with reasonable promptness, and within 15 calendar days unless otherwise noted, consistent with sound professional practice. Review of a specific item shall not indicate acceptance of an assembly of which the item is a component. The Architect shall not be required to review and shall not be responsible for any deviations from the Contract Documents not clearly noted by the Contractor, nor shall the Architect be required to review partial submissions or those for which submissions for correlated items have not been received.
- G. The Owner's Representative will prepare Change Orders in accordance with GC Article 12.
- H. The Contractor shall provide sufficient, safe and proper facilities at all times for the full inspection of the Work by the Architect or other representatives of the Owner, at the project site and at the various other locations where project is being performed.
- I. The Owner's Representative and Architect will have authority to reject Work which does not conform to the Contract Documents. Whenever, in their opinion, the Owner's Representative and Architect considers it necessary or advisable for the implementation of the intent of the Contract Documents, the Owner's Representative or Architect will have authority to require special inspection or testing of the Work in accordance with GC Article 31, whether or not such Work be then fabricated, installed or completed. However, the Owner's Representative and Architect's authority to act under this Subparagraph and any decision made by them in good faith to exercise or not to exercise such authority, shall not give rise to any duty or responsibility of the Owner's Representative or Architect to the Contractor, and Subcontractor, any of their agents or employees, or any other person performing any the Work.
- J. The duties, responsibilities and limitations of authority of the Owner's Representative as the representative of the Owner during construction as set forth in the Contract Documents will not be modified or extended without written consent of the Owner.

**GC 17. NON-CONFORMING WORK**

- A. The fact that the work and materials have been inspected from time to time and payments on account have been made, shall not relieve the Contractor from the responsibility of replacing and making good any defective work or materials that may be discovered within one year from the

date of completion of the Work by the Contractor and its approval by the Owner's Representative, Architect, and its acceptance by the Owner.

- B. Failure of Owner's Representative, Architect or Owner to object to any defects in work or material or variances from the plans and specifications during or after construction shall not be deemed a waiver by Owner, Owner's Representative or Architect of such defects or variances; nor by such failure shall Owner, Owner's Representative or Architect be deemed stopped from requiring Contractor to correct such defects or variances.
- C. At Owner's sole option, if Owner prefers to accept non-conforming work, Owner may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect an appropriate reduction in the Contract Sum, or if the amount is determined after final payment it shall be paid by the Contractor.
- D. Uncovering of Work:
  - 1. If any portion of the Work should be covered contrary to the request of the Owner's Representative, Architect or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Owner's Representative, be uncovered for their observation and shall be replaced at the Contractor's expense.
  - 2. If any other portion of the Work has been covered which the Owner's Representative or Architect has not specifically requested to observe prior to being covered, the Owner's Representative or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it be found that this condition was caused by the Owner or a separate contractor as provided in GC 8 above, in which event the Owner shall be responsible for the payment of such costs.

**GC 18. OWNERSHIP OF DOCUMENTS**

- A. All plans and specifications shall remain the property of the Owner and shall be returned to the Owner's Representative or shall be accounted for by the Contractor before the final acceptance of building by the Owner.
- B. Documents for this project shall not be used on or for any other work or purposes without express written consent of Owner's Representative, Architect and Owner.

**GC 19. DOCUMENTS FURNISHED**

- A. The Contractor will be supplied ten (10) sets of Contract Documents for use in the Work.
- B. Additional sets of Contract Documents may be obtained from Architect, at cost, at Contractor's expense.

**GC 20. DRAWING DIMENSIONS**

- A. The general dimensions are shown in figures on the drawings furnished to the Contractor. These figured dimensions shall invariably have preference to scaled measurements; but the Contractor shall exercise proper caution and care to verify the figures before laying out the Work, and shall be held responsible for any omissions or errors therein that might have been avoided.

**GC 21. DETAILED DRAWINGS**

- A. Drawings and details may be furnished to the Contractor as work progresses, showing in more elaboration the work intended to be done and the Contractor shall conform to them as being a part of the Contract.
- B. No work shall be performed in advance of the receipt by the Contractor of such detailed drawings, except such work as the Owner's Representative shall order in writing to be done without details. Any complaint as to the character and extent of the details shall be made to the Owner's Representative within ten days after the Contractor has received the same. The Contractor shall notify the Owner's Representative in ample time as to when the Contractor will require these drawings so they may be prepared without causing any delay to the Work.

**GC 22. SUBMITTALS**

- A. Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
- B. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.
- C. Samples are physical examples which illustrate materials equipment or workmanship and establish standards by which the Work will be judged.
- D. The Contractor shall review, approve and submit, with such promptness as to cause no delay in their own work or in that of any other contractor, copies of all Shop Drawings or Setting Drawings, Schedules for the Work of the various trades and samples of materials and finishes required for the Work, together with information or supporting data as may be required or called for. The Owner's Representative will pass upon them with reasonable promptness in accordance with GC Article 16. The Contractor shall make any corrections required by the Owner's Representative or Architect and resubmit corrected copies.
- E. Samples required or called for shall be exactly as specified for and intended to be used in the work; and Shop Drawings shall accurately portray the Work required. Materials, finishes and workmanship shall be equal in every respect to that of the reviewed submittals.
- F. Submittals shall be delivered as directed by the Owner's Representative, postage or delivery charges prepaid by the Contractor in all cases. Samples returned upon request from the Contractor shall be returned by collect mail, parcel post or any carrier named by Contractor.
- G. The furnishing by the Contractor or the review by the Architect of drawings, samples, schedules or other data shall not relieve the Contractor from responsibility for deviations from drawings or specifications, nor shall it relieve them of responsibility for errors of any sort in shop drawings, schedules or other submittals.
- H. By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that they have determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that they have checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- I. Each Submittal shall be properly identified as required by the Owner's Representative.
- J. Deviations from requirements of Contract Documents, errors, inconsistencies with submittals previously made to or reviewed by Architect, and corrections to dimensions or supporting data shall be clearly identified by the Contractor by notations on the submittals or attached explanations.

- K. No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been reviewed by the Architect as provided in Subparagraph of GC Article 16. All such portions of the Work shall be in accordance with reviewed submittals.

**GC 23. SURVEY AND LAYOUT**

- A. All work pertaining to this Contract shall be laid out on the premises by the Contractor who shall be held responsible for its correctness.
- B. The Contractor shall retain and pay for the services of a registered Engineer or licensed surveyor, when applicable, who shall lay out the main lines of the building and other improvements at the site and provide other primary lines, pile locations and levels as may be required.
- C. All stakes, benchmarks, survey marks, monuments and other line or level points which have been or may be established in the building or on or about the premises shall be carefully preserved and respected by the Contractor.
- D. On-site work shall be laid out to properly meet existing off-site work not required to be removed or replaced, or to lines and levels established by civil authorities having jurisdiction, as applicable to conditions at the place of the Work.

**GC 24. UNITY OF DOCUMENTS**

- A. The Plans and Specifications are one document and any work shown, required or called for in the one and not in the other, or vice versa, shall be furnished or performed as though it were shown, required or called for in both.
- B. The Contractor admits and agrees that the Contract Documents exhibit the intent and purpose of the Owner in regard to the Work, and that they are not complete in every detail and are to be considered as showing the purpose and intent only; and Contractor further agrees to furnish all labor or material for any detail that is necessary to carry out said intent and purpose without extra charge to the Owner.
- C. The misplacement, addition or omission of any word, letter or punctuation mark shall in no way change the intent, purpose of meaning or the Plans and Specifications.
- D. Any part of the Work or any article or detail pertaining thereto which is not specifically set forth in the Specifications or shown on the Drawings, but which is necessary for the proper completion of the Work, shall be furnished and installed at the Contractor's expense the same as if it had been partly or fully shown or specified. The Contractor shall do and furnish all things necessary to make a complete and workmanlike job in accordance with the intent and purpose of the Contract Documents.

**GC 25. INSPECTION BY CONTRACTOR**

- A. The Contractor shall inspect, review, compare and familiarize himself with the Contract Documents and the premises of the Work, and shall at once report to the Architect, in writing if requested, any error, omission or inconsistency within the documents or between information given and conditions observed or found at the premises.
- B. The Contractor shall make a close inspection of all materials as delivered, and shall promptly return all damaged or defective materials without waiting for their rejection by the Owner's Representative, Project Inspector, or Architect.
- C. Before beginning any of the work, the Contractor shall examine all construction and work of other contractors or trades that may affect this work, and to satisfy that everything is in proper condition to receive this work; and shall at once notify the Owner's Representative, in writing if requested, of

any exception taken to any construction or condition so affecting this work, whether placed under this Contract or other contracts.

- D. Failure to file with the Owner's Representative any notice to the contrary shall constitute acceptance by the Contractor of the construction of other contractors or trades as being suitable in all ways to receive their work, except as to defects which later develop in the work of other contractors after the execution of their own work.
- E. Contractor's inspection of documents and premises shall include making known to himself the general and particular location, nature and character of the project work, the physical and contractual conditions, provisions and requirements, the nature and extent of work and equipment to be furnished by Owner, and the limitations and various other aspects relative to this project, including all coordination necessary for proper and timely execution of the Work.
- F. Owner will not consider any claims whatsoever on account of Contractor's failure to fully investigate or determine their requirements in advance of commencing the work or the conditions of the work throughout its progress.

**GC 26. DEVIATION FROM PLANS OR SPECIFICATIONS**

- A. No deviations shall be made from the plans or the specifications. If the Contractor shall vary from the plans the amount or value of the materials herein provided for, the Owner shall have the right to order such improper work or materials removed or replaced; any other work disturbed or damaged by such alteration shall be made good at the Contractor's expense.

**GC 27. STANDARDS OF MATERIALS**

- A. Wherever the name or brand of a manufacturer's article is specified herein, it is used as a measure of quality and utility; a standard.
- B. If the Contractor desires to use any other brand or manufacturer of equal quality and utility to that specified, Contractor shall make application to the Owner's Representative in writing, and submit samples if requested. The Architect will then determine whether or not the named brand or article is equal in quality and utility to that specified and Architect's decision shall be final. Submit at least 14 days prior to bid date. Refer to sections of Technical Specifications for these items.

**GC 28. QUALITY OF MATERIALS AND LABOR**

- A. All materials used on this Contract shall be new and the best market quality unless specified or shown otherwise. All labor used on this Contract shall be competent and skilled for the Work. All Work executed under this Contract shall be done in the best, most thorough, substantial and workmanlike manner. All material and labor shall be subject to the approval of the Architect as to its quality and fitness, and shall be immediately removed if it does not meet with approval. The Owner's Representative may refuse to issue a Certificate of Payment for unapproved work until all defective materials or work have been removed and other material of proper quality substituted therefore.

**GC 29. SUFFICIENT LABOR OR MATERIALS**

- A. Should the Contractor abandon the Work called for under these specifications, or seek to assign this Contract, or if at any time the Owner's Representative shall be of the opinion and so certify in writing to the Owner that the Contractor is unnecessarily and unreasonably delaying the work, or that the Contractor is willfully violating any of the conditions or provisions of the plans and specifications, or is performing their work in bad faith, the Owner shall, in addition to all other remedies provided by Contract or by law, after seven (7) days written notice to the Contractor, have the power to notify the Contractor to discontinue all work or any part thereof under this Contract; and thereupon, the Contractor shall cease to continue said Work or such part thereof as the Owner may designate, and the Owner shall thereupon have the power to obtain by contract,



purchase or hire, such implements, tools, labor or materials by contract or otherwise, as Owner may deem advisable, to work at and be used to complete the Work herein described, or such part thereof as the Owner's Representative shall certify has not been completed, and to use such material as it may find at the building site. The expenses so incurred in the process shall be deducted by the Owner out of such monies as may either be due or may at any time thereafter become due to the Contractor under and by virtue of these plans and specifications, or any part thereof.

- B. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for the Owner's Representative or Architect's additional services made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor or their bondsmen shall pay the difference to the Owner on notice to either from Owner. The amount to be paid to the Contractor or to the Owner, as the case may be, shall be certified by the Owner's Representative, upon application, in the manner provided in GC Article 10, and this obligation for payment shall survive the termination of the Contract.

**GC 30. OLD MATERIAL**

- A. Old material shall not be used.
- B. Construction materials or other items used or placed in the work later shall be considered old materials and not reused.

**GC 31. TESTS**

- A. Contractor shall comply with the requirements set forth in Division 1, General Requirements Sections.

**GC 32. PATENT RIGHTS, COPYRIGHTS, TRADE NAMES AND ROYALTIES**

- A. The Contractor shall indemnify and save harmless the Owner and authorized persons acting for the Owner against all liability on account of any patent rights, copyrights or trade names which may affect the articles or materials or their application under the Contract.
- B. The Contractor shall pay all royalties or other charges that may arise due to methods, types of construction, processes, materials or use of equipment and shall hold the Owner harmless from any claims or charges whatsoever which may arise; and shall furnish written assurance satisfactory to the Owner that such charges have been paid.

**GC 33. COMPLIANCE WITH BUILDING LAWS**

- A. The Contractor shall conform to and abide by all applicable city, county, regional, state and federal building, labor, sanitary, health and safety laws, ordinances, rules and regulations as currently adopted or enforced, including Part 1 & 2 of Title 24, Calif. Code of Regulation and the International Building Code; a copy of Title 24, CCR and the current California Building Code shall be kept at the job site at all times by the Contractor. Such laws and regulations shall be considered a part of these specifications the same as if set forth herein full, and all work hereunder shall be executed in accordance therewith.
- B. All work and materials shall be in full accordance with the latest rules and regulations of the State Fire Marshal, the Safety Orders of the Division of Industrial Safety, the National Electric Code, the Uniform Plumbing & Mechanical Codes published by the International Association of Plumbing and Mechanical Officials, and other applicable state laws or regulation including all of Title 24, Calif. Code of Regulation. Nothing in these plans or specifications is to be construed to permit work not conforming to these codes.

**GC 34. PERMITS AND LICENSES**

- A. Unless otherwise provided in the Contract Documents, the Owner shall give all notices and procure and pay for permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract and not excluded in Paragraph D below.
- B. LICENSES: Professional, trade, business and other licenses required by state statute or local government are entirely the responsibility of the Contractor and Subcontractors, and shall be prerequisite to submitting a bid proposal or performing work on the Project.
- C. PERMITS:
  - 1. Permits shall also include any cash deposits, returnable or otherwise, required by authorities having legal jurisdiction to make such demands;
  - 2. Owner reserves the right to cancel and declare null and void the Contract should any legal permit be refused or not issued for any reason;
  - 3. Due to cancellation for said reasons, Owner will not consider any claims by Contractor for loss of anticipated profits; or for work performed or materials procured prior to obtaining all permits required herein.
  - 4. The Contractor shall obtain Encroachment Permits from the City of Eureka, County of Humboldt, and CalTrans as needed.
- D. Contractor shall procure and deliver to the Owner's Representative, in forms prescribed and complete with dates and authorized signatures, all certificates of inspection, testing or approvals required of or by State or Civil authorities having legal jurisdiction or any public authority bearing on the performance of the Work.
- E. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work.

**GC 35. TEMPORARY FACILITIES**

- A. The Contractor shall provide and maintain a temporary field base of operation on the sites. Said base of operation shall be for the exclusive use of the Contractor; and shall be wind and weatherproof, furnished with sufficient lighting to permit reading of blueprints. A complete set of plans and specifications shall be kept continuously at each site. When vacated, said structure shall be removed and the work in that area completed in accordance with the Contract requirements. Based on need, Contractor shall maintain and pay for all utilities and fuels; shall provide maintenance and other services necessary for proper use and operation; and comply with related provisions as specified.
- B. The Contractor shall maintain a viable communications system at each site acceptable to the Owner's Representative, and shall maintain the same until the final completion of the Contract and the acceptance of the Work. The Owner's Representative, Architect and Inspector shall have free and unrestricted use of this communications system for all purposes in conjunction with the Work.
- C. The Contractor shall provide water closets and urinals for use by their employees and subcontractors and their employees, and in no case shall the permanent plumbing fixtures of buildings on the site be used for this purpose without the written consent of the Owner's Representative.
- D. The Contractor and each subcontractor shall furnish, at their own expense, all tools, equipment, appliances, materials, scaffolding or other means necessary for the entire completion of the Work; and shall be responsible for the care and guarding of same.
- E. The Contractor and each subcontractor shall erect and maintain where necessary to the progress and completion of the Work, all exterior and interior scaffolding which shall be erected in

accordance with the safety rules of the State of California; and use of which shall be unrestricted for all persons performing work on the Project.

- F. The Contractor shall pay the cost of all water, gas and electricity used by their employees or subcontractors during the process of the Work, or as required for temporary services or tests and inspections.
- G. Also refer to Division 1, General Requirements Sections.

**GC 36. LIABILITY FOR ACCIDENTS**

- A. The Contractor shall be liable for any and all loss, accident, neglect, injury, or damage to person, life or property which may be the result of or may be caused by their building operations or their execution of this Contract, and for which the Owner might be held liable; and shall protect and indemnify the Owner, the Owner's Representative, the Project Inspector, the Architect, and/or any officer, agent or employee of the Owner and hold them harmless in every way from all claims and from all suits or actions at law for damage or injury to persons, life or property that may arise or be occasioned in any way because of their building operations or their execution of this Contract.
- B. Safety Precautions and Programs:
  - 1. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.
- C. The Contractor shall assume the full responsibility for personnel safety on the project and the means and methods of construction that pertain to personnel safety. Contractor is responsible that such means and methods of construction are adequate to provide safety to all personnel while accomplishing all requirements and standards of the Contract Documents. The Owner, Architect, Inspector and/or their representatives have no obligation, responsibility, or jurisdiction over safety or means and methods of construction that pertain to personnel safety on the project.

**GC 37. ACCIDENT PREVENTION**

- A. The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, and any other necessary construction required to secure safety of life or property; and shall maintain during all night hours sufficient lights to prevent accidents or damage to life or property.
- B. No earth, building, temporary or other structure shall be loaded, used or stressed so as to endanger its safety.
- B. In the event of an emergency affecting the safety of persons or property, the Contractor shall act, at their discretion, to prevent threatened damage, injury or loss. Claims by Contractor on account of alleged emergency actions shall be filed in writing with the Owner's Representative.

**GC 38. EXISTING PREMISES AND IMPROVEMENTS**

- A. The Contractor shall care for, preserve and protect existing structures, utilities and other features, fixtures or improvements at the premises, including adjacent or co-terminus properties which are not required to be removed or altered by reason of work under this Contract; and shall, likewise, care for and protect work or improvements newly placed or recently installed at the premises. Any part or portion of said existing or newly placed improvements which are removed, damaged or disturbed because of this work, shall be replaced, cleaned or otherwise returned to the original condition entirely at the expense of the Contractor.
- B. The removal and/or replacing of any existing structure, pipe, conduit, pavement or other existing improvement necessary for the proper completion of any work under the Contract shall be

performed by the Contractor, and no claim for extra work shall be made on account of such removal and replacement.

- C. In case it shall be necessary to remove any telephone, telegraph or electrical power transmission poles, water pipes, electrical conduits, or underground structures of any character, or any portion thereof, the Owner or their agents shall be notified by the Contractor and the Contractor shall make the necessary arrangements for such removal. The right is reserved to the Owner and to gas, water, telephone, telegraph and electrical power transmission companies to enter upon the Work for purpose of making repairs and changes that have become necessary by reason of work related to the Project.
- D. The Contractor shall thoroughly investigate all existing poles, wires, pipes and conduits above and below ground and shall provide for the maintenance or replacing of same, in good condition and at no expense to the Owner. Any necessary new or additional pipe or materials shall be furnished by the Contractor at their expense.
- E. At the completion of the Work, the Contractor shall furnish the Owner's Representative with a written certificate from the owner of each and all conduits, pipes or structures to the effect that such replacements and maintenance have been satisfactorily performed.
- F. The Contractor shall amply protect all work or improvements, set in the building or at the premises, against any possible damage; and shall furnish all necessary building paper, rough boarding or other means or materials necessary therefore.
- G. Also refer to Division 1, General Requirements Sections.

**GC 39. USE OF PREMISES AND CLEAN-UP**

- A. During the progress of the Work, materials shall be neatly stacked at such points so as not to interfere with site access and shall be properly cared for and protected against damage by weather or other causes. Project staging and parking area are defined in the plans.
- B. In the case where there are several contractors operating at one time, arrangements must be made to allow the joint use of storage space so as to prevent delays in the work and unnecessary inconveniences.
- C. At the end of each working day, or as directed by the Owner's Representative, Project Inspector or Architect, the Contractor shall clean the building, premises, streets and adjacent properties of accumulated rubbish, debris, unnecessary appliances or any unused material which may constitute an obstruction to the progress or completion of the Work, whether the same was caused by their work or by the work of other crafts. Failure by the Contractor to maintain the site and building premises in a safe and clean condition will be considered a breach of contract and Contractor agrees to pay Owner for costs to have site cleaned or deduct said costs from any money due the Contractor under the contract.
- D. At the completion of the Work, and as one of the requisites thereof, the Contractor shall remove any and all tools, construction equipment, machinery, surplus materials, appliances, rubbish, packing, debris or other extraneous matter of any kind from the building, premises, sidewalks, streets or adjacent premises; Contractor shall go over all of their work and put the same in perfect order and condition and in strict accordance with the terms of the Contract; and shall repair or replace all damaged, broken or stained parts of their work, whether so injured by their workmen or others.
- E. No advertising signs of any kind shall be displayed on the building, premises, fences, offices or elsewhere upon the job, except the Project sign as called for in the specifications.
- F. At the completion of each phase of work of each kind of work or activity, the areas so used or involved shall be left in a "broom clean" condition daily unless otherwise more particularly required.

**GC 40. DIRECTION OF THE WORK**

- A. The Contractor shall have control or charge over their Subcontractors; shall be responsible to the Owner for the acts and omissions of their employees, subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor, and for all orders or instructions from the Owner, Owner's Representative or the Architect.
- B. It shall be the Contractor's duty to see that all of the subcontractors commence their work properly at the proper time and carry it on with due diligence as not to cause delay or injury either to work or materials; and that all damage caused by them or their workmen be properly made good by them or by himself at no cost to the Owner.
- C. The Contractor shall keep on the Work Site at all times and until the acceptance certificate is issued, a competent Project Manager and Project Superintendent for the purpose of receiving and executing without delay any orders in keeping with the terms of the Contract issued by the Owner, Owner's Representative or Architect. This Superintendent shall have charge of Plans and Specifications kept on the job; shall be instructed to be familiarized closely with all the provisions of the plans and specifications and to follow them in a precise manner.
- D. If at any time the Superintendent or workman who shall be employed by the Contractor or any of their Subcontractors shall be declared by the Owner's Representative to be incompetent or unfaithful in executing the work, then the Contractor upon receiving written notice shall, forthwith, dismiss such person and shall not again employ him on any part of the Work.
- E. Contractor shall supervise and direct the Work using their best skill and attention, and shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the Contract; except that said responsibilities shall not be construed to permit use of any material, process, method or means if they are deemed unsuitable by Owner's Representative.
- F. Processing of Change Orders, Cost Estimates and like administrative matters, shall follow the procedures established and approved by the Owner at commencement of Work under the Contract. Change orders and other forms shall be as approved by the Owner's Representative or otherwise required or directed by Owner. Refer to GC 12.
- G. Review of Contract Documents: The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Architect through the Owner's Representative any conflict, error, inconsistency or omission Contractor may discover. Refer to GC 11 A.
- H. The Contractor shall not be relieved from their obligations to perform the Work in accordance with the Contract Documents by the activities or duties of the Owner's Representative in their administration of the Contract, or by inspections, tests or approvals required or performed under GC 31, by person other than the Contractor.
- I. Progress Schedule:
  - 1. The Contractor shall prepare and submit to the Owner's Representative with copy to the Architect and the Construction Inspector the Contractor's Initial Construction Schedule within ten (10) calendar days after date on the Notice to Proceed. The Contractor's Initial Construction Schedule shall be comprised of either a Detailed Bar Chart, if the contract value is less than one million dollars (\$1,000,000), or a Critical Path Method network, if the contract value is one million dollars (\$1,000,000) or more. The Contractor's Initial Construction Schedule shall show the dates on which each part or division of the work is expected to be started and completed, and shall show all submittals associated with each work activity, allowing a minimum of fifteen (15) calendar days (per GC 16 F) for the Architect's review of each submittal unless a longer period of time is specified elsewhere in these Contract Documents. The work activities making up the schedule shall be of sufficient detail to assure that adequate planning has been done for proper execution of

- the work and such that, in the sole judgment of the Owner, it provides an appropriate basis for monitoring and evaluating the progress of the work. The schedule shall show the interdependence of each activity and a single critical path. The Contractor shall also submit a separate progress schedule listing all submittals required under the contract and when it is anticipated that each submittal will be submitted.
2. The Contractor's Initial Construction Schedule shall show the sequence, duration in calendar days, and interdependence of activities required for the complete performance of all work. The Contractor's Initial Construction Schedule shall begin with the date of issuance of the Notice to Proceed and conclude with the date of final completion.
  3. Float, slack time, or contingency within the schedule (i.e., the difference in time between the project's early completion date and the required contract completion date), and total float within the overall schedule, is not for the exclusive use of either the Owner or the Contractor, but is jointly owned by both and is a resource available to and shared by both parties as needed to meet contract milestones and the contract completion date.
  4. The Contractor shall not sequester shared float through such strategies as extending activity duration estimates to consume available float, using preferential logic, or using extensive crew/resource sequencing, etc. Since float time within the schedule is jointly owned, no time extensions will be granted nor delay damages paid until a delay occurs which extends the work beyond the Contract completion date. Since float time within the construction schedule is jointly owned, it is acknowledged that Owner caused delays on the project may be offset by Owner caused time savings (i.e., critical path submittals returned in less time than allowed by the contract, approval of substitution requests which result in a savings of time to the Contractor, etc.) In such an event, the Contractor shall not be entitled to receive a time extension or delay damages until all Owner caused time savings are exceeded and the contract completion date is also exceeded.
  5. Comments made by the Owner on the Contractor's Initial Construction Schedule during review will not relieve the Contractor from compliance with the requirements of the contract documents. The review is only for general conformance with the scheduling requirements of the contract documents. Upon the Owner's request, the Contractor shall participate in the review of the Contractor's Initial Construction Schedule submissions (including the original submittal, all update submittals, and any re-submittals). The Owner may request the participation of subcontractor in these reviews, as determined necessary by the Owner. All revisions shall be resubmitted within fifteen (15) calendar days after the Owner's review.
  6. The submittal of a fully revised and acceptable Contractor's Initial Construction Schedule shall be a condition precedent to the processing of the first monthly payment application.
  7. On any project with a construction value equal to or greater than one million dollars (\$1,000,000), the Contractor must submit a Critical Path Method (CPM) network. The network shall provide a workable plan for monitoring the progress of all the elements of the work, establish and clearly display the critical elements of the work, forecast completion of the construction, and match the contract duration in time. Exclusive of those activities for submittal review and material fabrication and delivery, activity duration shall not be less than one (1) or more than thirty (30) calendar days, unless otherwise approved by the Owner. In addition to the detailed network diagram, the Contractor shall submit the following reports with the original submittal and all updates and revisions:
    - a. Predecessor/Successor Report or a list showing the predecessor activities and successor activities for each activity in the schedule.
    - b. Activity Report sorted by early start or a list showing each activity in the schedule, arranged by early start dates.
  8. Regardless of which schedule method the Contractor elects to use in formulating the Contractor's construction schedule, and unless the Owner's Representative in writing each month, specifically waives this requirement, an updated construction schedule shall be submitted to the Owner's Representative five (5) days prior to the submittal of the Contractor's monthly payment request. The submittal of the updated construction schedule which satisfies the requirements of the Contract Documents accurately reflects the status of the work, and incorporates all changes into the schedule, shall be a condition precedent to the processing of the monthly payment application. Updated schedules shall

also be submitted at such other times as the Owner may direct. Upon approval of a change order or issuance of a direction to proceed with a change, the approved change shall be reflected in the next schedule update submittal by the Contractor, or other update submittal approved by the Owner.

9. If completion of any part of the work, the delivery of equipment or materials, or submittal of the Contractor submittals is behind the updated construction schedule and will impact the end date of the work past the contract completion date, the Contractor shall submit in writing, a plan acceptable to the Owner for completing the work on or before the current contract completion date.
  10. No time extensions shall be granted nor delay damages paid unless the delay can be clearly demonstrated by the Contractor on the basis of the updated construction schedule current as of the month the change is issued or the delay occurred and which delay cannot be mitigated, offset, or eliminated through such actions as revising the intended sequence of work or other means. Contractor shall submit all disputes or claims under the provisions of GC 51, Claims Procedure, otherwise it shall be waived.
  11. As a condition precedent to the release of retained funds, the Contractor shall, after completion of the work has been achieved, submit a final Contractor's construction schedule which accurately reflects the manner in which the project was constructed and includes actual start and completion dates for all work activities on the construction schedule.
- J. The Contractor shall forward all communications to the Owner and Architect through the Owner's Representative.

**GC 41. CUTTING, FITTING AND PATCHING**

- A. The Contractor shall do all cutting, fitting and patching of Work that may be required to make its several parts come together properly, and prepare it to join or be joined by the work of other contractors; and Contractor shall make good after them.
- B. The Contractor shall not endanger any work by cutting, digging or otherwise; and shall not cut or alter the work of any other contractor without the written consent of the Architect; and shall not cut a beam, timber or support of any kind without the consent of the Architect. Under no circumstances shall any principal brace, timber, truss, support or other structural member be cut or structurally weakened in any way.
- C. Where the construction is required to join with or match existing work, it shall be finished exactly similar to that work so as to form complete, unified and finished work.
- D. Contractor shall be responsible for and particularly supervise each and every operation and all work which in any way may affect the structural integrity of the various works, including below, or, or above grade structures, and whether for temporary or permanent work.
- E. Any cost for repairs or restoration caused by cutting, digging or otherwise due to ill-timed or defective work shall be borne by the Contractor.
- F. Also refer to Division 1, General Requirements Sections.

**GC 42. RIGHT TO OCCUPY OR USE**

- A. The Owner reserves the right to occupy or use any part or parts, or the entirety of the building and/or grounds when the Owner deems the same may be safe for use or occupancy.
- B. The exercising of this right shall in no way constitute an acceptance of such parts, or any part of the work, nor shall it in any way affect the dates and times when payments shall become due from the Owner to the Contractor, nor shall it in any way prejudice the Owner's right under the Contract or any bonds guaranteeing the same. The Contract shall be deemed completed only when all the

Work contracted for shall be duly and properly performed and accepted by the Board of Supervisors.

- C. When any part or portion of the Project is to be used or occupied by Owner in advance of final completion and acceptance, and when duly notified by Owner's Representative, the Contractor shall arrange for completion of said portions of the Work the same as required under the Documents for the whole Work, including cleaning and other readying by the date stipulated with such notice.
- D. Contractor shall not be held responsible for any damage to the occupied part of the Project resulting from Owner's occupancy.
- E. Occupancy by Owner shall not be deemed to constitute a waiver of existing claims on behalf of Owner or Contractor against each other.
- F. Use and occupancy by Owner prior to project acceptance shall not relieve Contractor's responsibility to maintain all insurance and bonds required of Contractor under the Contract until the entire Project is completed and accepted by Owner.
- G. If after written notification by the Owner of the intent to occupy, the Contractor feels that such occupancy will delay progress of the work or will cause additional expense to the Contractor, Contractor may file a request for an equitable adjustment in Contract Price or Time of Completion, or both, with the Owner's Representative. If the Owner's Representative agrees he will either prepare a written change order for the Owner to sign or advise the Owner to delay occupancy.

**GC 43. CHANGE OF CONTRACT TIME & LIQUIDATED DAMAGES**

- A. Change by Change Order. The contract time may only be changed by change order. A request for an extension or shortening of the contract time shall be based on written notice delivered by the party making the request to County promptly after the occurrence of the event giving rise to the request and stating the general nature of the request. Notice of the extent of the request with supporting data shall be delivered to County and shall be accompanied by the written statement that the adjustment requested is the entire adjustment to which the requesting party has reason to believe it is entitled as a result of the occurrence of said event. No request for an adjustment in the contract time will be valid if not submitted in accordance with the requirements of this paragraph.
- C. Contract time may be extended. The contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor if the request is made therefor as provided in this article. Such delays shall include, but not be limited to, acts of neglect by County or others performing additional work, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.
- D. Delay and price change. All time limits stated in the contract documents are of the essence. There shall be no adjustment of contract price due to delays for fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God. The provisions of this Provision shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) for delay by either party.
- E. Delays in completion of work :
  - 1. Notice of delays. Whenever the Contractor foresees any delay in the prosecution of the work, and in any event immediately upon the occurrence of any delay which the Contractor regards as unavoidable, Contractor shall notify County in writing of the probability of the occurrence of such delay and its cause in order that County may take immediate steps to prevent, if possible, the occurrence or continuance of the delay or, if this cannot be done, may determine whether the delay is to be considered avoidable or



unavoidable, how long it continues, and to what extent the prosecution and completion of the work are to be delayed thereby. It will be assumed that any and all delays which have occurred in the prosecution and completion of the work have been avoidable delays, except such delays as shall have been called to the attention of County at the time of their occurrence and found by County to have been unavoidable. The Contractor shall make no requests for extensions of time as to delay not called to the attention of County at the time of its occurrence.

2. Avoidable delays. Avoidable delays in the prosecution or completion of the work shall include all delays which in the opinion of County would have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor or Contractor's subcontractors.
3. Unavoidable delays. Unavoidable delays in the prosecution or completion of the work shall include all delays which, in the opinion of County, result from causes beyond the control of the Contractor and which could not have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor or the subcontractors and/or any suppliers. Delay in completion due to contract modifications ordered by County and unforeseeable delays in the completion of work or interference by other contractors employed by County will be considered unavoidable delays insofar as they interfere with the Contractor's completion of the work.

F. Extension of time:

1. Avoidable delays. In case the work is not completed in the time specified, including such extensions of time as may have been granted for unavoidable delays, the Contractor will be assessed damages for delay in accordance with liquidated damages provision. The County, however, shall have the right to grant an extension of time for avoidable delay if it is deemed in County's best interest to do so. During such extension of time, the Contractor will be charged for engineering and inspection services and other costs but will not be assessed damages for the delay.
2. Unavoidable delays. For delays which County considers to be unavoidable, the Contractor shall, pursuant to Contractor's application, be allowed an extension of time beyond the time herein set forth, proportional to such delay or delays, in which to complete the contract. During such extension of time, neither extra compensation for engineering and inspection provided nor damages for delay will be charged to the Contractor.
3. Liquidated damages. County and Contractor recognize that time is of the essence and that County will suffer financial loss if the work is not completed within the time specified above, plus any extensions thereof allowed in accordance with this contract. They also recognize the delays, expense and difficulties involved in proving the actual loss suffered by County if the work is not completed on time. Accordingly, instead of requiring any such proof, and due to impracticality and difficulty of ascertaining exact damages caused by delay, County and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay County that amount set forth in the Contract, or if no such amount is specified, then one-half of one percent of the total contract price for each day that expires after the time specified above for completion. In case of joint responsibility for delay in the final completion of the work, where two or more separate contracts are in force at the same time and cover work at the same site, liquidated damages assessed against any one Contractor will be based upon the individual responsibility of that Contractor for the delay as determined by, and in the judgment of, County.

County shall have the right to deduct the liquidated damages from any money in its hands, otherwise due, or to become due, to Contractor, or to sue for and recover compensation for damages for nonperformance of this contract within the time stipulated. County has determined and the Contractor acknowledges that the liquidated damages as established herein are governed by the provisions of Government Code § 53069.85 and are predicated upon the reasonable damages accruing to County stemming from any delay in the completion of this project.

**GC 44. HOURS OF WORK**

- A. The time of service of any labor, workman or mechanic employed upon any of the Work herein specified, shall be limited and restricted to that allowed by law, and no laborer, workman or mechanic employed upon said Work herein specified shall be required or permitted to labor more than that allowed by law, except in cases of extraordinary emergency caused by fire, military or naval defenses or works in time of war.
- B. Within thirty (30) days after any workman is permitted to work over that allowed by law in any one calendar day due to such an extraordinary emergency, the Contractor shall file with the Owner a verified report setting forth the nature of the said emergency, which shall contain the name of said workman and the hours worked by them on said particular day; and failure to file said report within the said thirty day period shall be prima facie evidence that no extraordinary emergency existed.
- C. The Contractor and each subcontractor shall keep an accurate record showing the name of and actual hours worked by each worker employed by said Contractor and subcontractor in connection with the work contemplated by this agreement. The record shall be kept open at all reasonable hours to inspection by the Owner or its officers or agents and by the Division of Labor Law Enforcement of the Department of Industrial Relations.
- D. The Contractor shall forfeit as a penalty to the Owner twenty-five dollars (\$25) for each laborer, workman or mechanic employed in the execution of this Contract by them or by any subcontractor under him, upon any public work herein specified for (a.) each calendar day during which any laborer, workman or mechanic is required or permitted to labor more than that allowed by law; or (b.) each calendar week during which any laborer, workman or mechanic is required or permitted to labor more than that allowed by law of the Labor Code of the State of California. Said sums and amounts which shall have been so forfeited pursuant to the herein paragraph and said provisions of said Labor Code shall be withheld and retained from payments due to the Contractor under this Contract, pursuant to this Contract, and the terms of said Code; but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the Division of Labor Law Enforcement of the State Department of Industrial Relations or by the Owner.

**GC 45. PREVAILING WAGE RATES & PAYROLL RECORDS**

- A. Prevailing Wage Rates
  - 1. Pursuant to section 1770 and following of the Labor Code of the State of California, the Director of Industrial Relations has ascertained the general prevailing rate of per diem wages and the rates for overtime and holiday work in the locality in which the work is to be performed for each craft, classification or type of worker needed to execute the Contract which will be awarded to the successful bidder, copies of which are on file at Humboldt County Public Works, 1106 Second Street, Eureka, CA 95501, Phone (707) 445-7493 and are available to interested parties on request and by reference are incorporated herein and made a part hereof. Contractor will maintain a copy of prevailing rates and wages on the job site during the contract period.
  - 2. It shall be mandatory upon the Contractor and upon any subcontractor under it, to pay not less than the specified rates to all laborers, workers, and mechanics employed in the execution of the Contract. It is further expressly stipulated that the Contractor shall, as a penalty to the Owner, forfeit not more than \$200 for each calendar day, or portion thereof, for paying less than the stipulated prevailing rates for any work done under this contract by Contractor or by any subcontractor under it; and Contractor agrees to comply with all provisions of Section 1775 of the Labor Code.

3. In case it becomes necessary for the Contractor or any subcontractor to employ on the project under this Contract any person in a trade or occupation (except executives, supervisory, administrative, clerical, or other non-manual workers as such) for which no minimum wage rate is herein specified, the Contractor shall immediately notify the Owner, who will promptly thereafter determine the prevailing rate for such additional trade or occupation and shall furnish the Contractor with the minimum rate based thereon. The minimum rate thus furnished shall be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment. Each contractor shall file a certified copy of the payroll records with the entity that requested the records within ten (10) days after receipt of a written request.
  4. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the Owner, shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the contractor awarded the contract for performing the contract shall not be marked or obliterated.
  5. The Contractor shall inform the Owner of the location of the payroll records, including the street address, city and county, and shall, within five working days, provide a notice of any change of location and address.
  6. The Prime Contractor shall be responsible for compliance with this section.
- B. Payroll Records. The Contractor agrees to comply with all requirements of Section 1776 of the Labor Code, including, without limitation, the following:
1. The Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by it in connection with the public work. Each payroll record shall be verified by written declaration, under penalty of perjury, stating both the following:
    - a. The information contained in the payroll record is true and correct.
    - b. The employer has complied with the requirements of sections 1771, 1811 and 1815 of Labor Code for any work performed by his employees on the project.
  2. The above-referenced payroll records shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:
    - a. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or their authorized representative on request;
    - b. A certified copy of all payroll records shall be made available for inspection or furnished upon request to the Owner, the Division of Labor Standards Enforcement, or the Division of Apprenticeship Standards of the Department of Industrial Relations.
    - c. A certified copy of all payroll records shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the Owner, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided, pursuant to paragraph b. above, the requesting party shall, prior to being provided the records, reimburse the cost of the Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the Contractor.
- C. Pursuant to Section 1771.1(a) of the California Labor Code, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in Sections 1770 et seq. of the Labor Code, unless currently registered and qualified to perform public work pursuant to Section 1725.5 of the Labor Code. It is not a violation of Section 1771.1(a) 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.

**GC 46. TAXES**

- A. Any federal, state or city tax, including sales, excise, use and other taxes payable on articles furnished by the Contractor under the Contract shall be included in the Contract Price and paid for by the Contractor.

**GC 47. SUBCONTRACTORS**

- A. In accordance with the provisions of Section 4100 et seq, of the Public Contract Code of the State of California, each bidder for the work herein specified shall set forth in their Bid Proposal the name and location of the place of business of each subcontractor who will perform work or labor or render service to the General Contractor in or about the construction of the Work or improvements an the amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total Base Bid; and the portion of the Work which will be done by each subcontractor if the Contract or said Work is awarded to said Bidder.
- B. If any General Contractor fails to specify a subcontractor or specifies more than one subcontractor for the same portion of the Work to be performed on the Contract in excess of one-half of one percent of the General Contractor's total Bid, Contractor agrees to perform such portion himself and, if Contractor's Bid is accepted, Contractor shall not be permitted to subcontract that portion of the Work.
- C. Should the General Contractor violate any provision of the subletting and subcontracting Fair Practices Act, the Contractor will be deemed in violation of the contract and the Owner may at it's option, (1) cancel the Contract. (2) assess upon the Contractor a penalty in an amount of not more than ten percent (10%) of the amount of the subcontract involved.
- D. Prior to the award of the Contract, the Owner's Representative shall notify the successful bidder in writing if the Owner, after due investigation, has reasonable objection to any person or organization on the required list of subcontractors. Failure of the Owner to make an objection to any person or organization on the list prior to the award shall constitute acceptance of such person or organization.
- E. The Contractor shall not contract with any subcontractor or any person or organization for any portion of the work who has not been accepted by the Owner. The Contractor will not be required to contract with any subcontractor or person or organization against whom Contractor has a reasonable objection.
- F. If after the award of the contract, the Owner refuses to accept any person or organization on the required list of subcontractors, the Contractor shall submit an acceptable substitute and the Contract Sum shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued; however, no increase in the Contract Sum shall be allowed for any such substitution unless the Contractor has acted promptly and responsively in submitting a name with respect thereto prior to the award.
- G. After the award, the Contractor shall resubmit the list of subcontractors, corrected or modified as may be necessary as directed by the Owner.

H. Subcontracting

1. Nothing contained in the Contract Documents shall be construed as creating any contractual relationship between Owner and any subcontractor. The Divisions or Sections of the Specifications, and the divisioning of the Drawings are not intended to control the Contractor in dividing the Work among subcontractors or to limit the Work performed by any trade.
  2. The Owner, Owner's Representative or Architect will not undertake to settle any differences between the Contractor and their subcontractors or between subcontractors.
  3. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions, and other Contract Documents insofar as applicable to the work of subcontractors; and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents. The Contractor shall make available to each proposed subcontractor prior to the execution of the Subcontract, copies of the Contract Documents to which the subcontractor will be bound by this Paragraph and identify to the subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract Documents. Each subcontractor shall similarly make copies of such Documents available to their sub-subcontractors.

I. Payments to Subcontractors:

1. Contractor shall pay each subcontractor or supplier upon receipt of payment from Owner, an amount equal to the percentage of completion allowed to Contractor on account of such work performed or material supplied. Contractor shall also require each subcontractor to make similar payments to their subcontractors or suppliers.
2. Contractor shall pay each subcontractor a just share of any insurance monies received by Contractor when and as applicable, and Contractor shall require each subcontractor to make similar payments to their subcontractors or suppliers.
3. The Owner's Representative may, on request and at their discretion, furnish to any subcontractor, if practicable, information regarding percentages of completion certified to the Owner on account of Work done under the Contract.
4. Neither Owner, Owner's Representative or Architect shall have any obligation to see to the payment of any monies to any subcontractor except as may otherwise be required by law.

**GC 48. RECORDS, ACCOUNTS AND SEGREGATED PRICES**

- A. Contractor agrees to keep one complete set of records and books of accounts, on a recognized cost accounting basis, satisfactory to Owner and Owner's Representative showing all expenditures, of whatever nature, made pursuant to this Contract.
- B. Contractor shall furnish such records, information and data as may be reasonably required and shall cooperate with Owner or Owner's Representative in establishing total costs for various major portions of the Work as will be designated by the Owner's Representative.
- C. If required for convenience of Owner's accounting, Contractor shall furnish segregated prices for various other portions of the Work. These segregated prices shall be in addition to or separate from the required Schedule of Values.

**GC 49. LIABILITY FOR TREES**

- A. In case of damage to or loss of trees due to carelessness or lack of sufficient protective measures specified, Contractor shall forfeit an amount in proportion to the extent of damage or loss, which shall not be less than Two hundred (\$200) dollars nor exceed One Thousand (\$1,000) dollars per tree for total loss.

**GC 50. LIABILITY FOR SURVEY MARKS**

- A. In case of damage to, disturbance or removal of survey marks, field markers, monuments, or other survey or layout devices due to carelessness or lack of sufficient protective means, the party responsible for such damage, disturbance or removal shall be liable for the expense to have them replaced and reset in compliance with specified requirements.

**GC 51. CLAIMS PROCEDURES**

- A. For purposes of this section:
1. "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:
    - a. A time extension, including, without limitation, for relief from damages or penalties for delay assessed by the County under the contract for the project.
    - b. Payment by the County of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for the project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.
    - c. Payment of an amount that is disputed by the County.
  2. "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the California Business and Professions Code who has entered into a direct contract with the County for a project.
  3. "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the California Business and Professions Code who either is in direct contract with a Contractor or is a lower tier subcontractor.
- B. Upon receipt of a Contractor's claim, the County shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, the County and a contractor may, by mutual agreement, extend the time period provided in this section.
- C. The claimant shall furnish reasonable documentation to support the claim.
- D. If the County needs approval from its Board of Supervisors to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the County shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.
- E. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the County issues its written statement. If the County fails to issue a written statement, paragraph (K) shall apply.
- F. If the Contractor disputes the County's written response, or if the County fails to respond to a claim issued pursuant to this section within the time prescribed, the Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the County shall schedule a meet and confer conference within 30 days for settlement of the dispute.
- G. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the County shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the County issues its written statement.

Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to

nonbinding mediation, with the County and the claimant sharing the associated costs equally. The County and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

- H. For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.
- I. Unless otherwise agreed to by the County and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.
- J. This section does not preclude the County from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.
- K. Failure by the County to respond to a claim from the Contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the County's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.
- L. Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.
- M. If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against the County because privity of contract does not exist, the Contractor may present to the County a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the Contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the County shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the Contractor shall notify the subcontractor in writing as to whether the Contractor presented the claim to the County and, if the original Contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.
- N. A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable, and (2) the County may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the time frames and procedures set forth in this section.

**GC 52. ATTORNEY'S FEES**

- A. Contractor hereby agrees to pay Owner, Owner's Representative and/or Architect a reasonable sum as attorney's fees in all court actions including arbitration brought by either of them against the other or in which they are both plaintiffs or defendants, and also in court actions involving

claims of subcontractors or material suppliers and in actions involving offsetting claims between Contractor and Owner, Owner's Representative or Architect because of any doubts, disputes or actions arising out of this Contract, except in the following cases:

1. When Contractor obtains a favorable net judgment against the Owner, Owner's Representative and/or Architect after consideration of claims and offsets of Owner which are allowed by the court against Contractor for breach of this Contract;
2. When Owner, Owner's Representative and/or Architect is denied a favorable judgment by a court in a suit against Contractor which may be brought by Owner, Owner's Representative or Architect.

**END OF GENERAL CONDITIONS**



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SUPPLEMENTARY GENERAL CONDITIONS

SECTION 00 80 00

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**SGC 1. GUARANTEE WORK**

- A. In the event of failure of Contractor to comply with the requirements of any guarantee by this Contract within seven (7) days after being notified in writing, Owner is authorized to proceed to have the defects repaired and made good at the expense of Contractor, who shall pay the costs and charges therefore immediately on demand.

**SGC 2. LAWS AFFECTING PUBLIC WORKS**

- A. Attention to bidders is called to necessity of being familiar with the various Federal, State and Local laws affecting public work, especially, but not limited to, those laws relating to hours of employment, minimum wage rates, payment of wages, sanitary and safety conditions for workmen, workmen's compensation insurance, type and kind of materials that can be used, non-discrimination in employment and affirmative-action programs. Contractor is advised that this project is being paid for by State and local funds. Contractor shall comply with applicable regulations and hold harmless the Owner for their failure to comply. Certain of those provisions may be set forth herein or in the General Construction Contract. The existence of these provisions does not excuse the Contractor from complying with other statutory requirements or provisions which are not set forth in these Contract Documents.

**SGC 3. OWNER'S REPRESENTATIVE, INSPECTOR**

- A. The Owner will employ an "Owner's Representative" and "Inspector". The Inspector will observe the installation of all materials and equipment to be incorporated into the Work and the placing of such materials and equipment to determine in general if the Work is proceeding in accordance with the Contract Documents. On the basis of their observations, the Inspector will keep the Owner's Representative informed as to the progress of the Work and will endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor and subcontractors employed by the Contractor in the prosecution of the Work. The Owner's Representative and Inspector shall not be responsible for means, methods, techniques, sequences or procedures of construction, nor be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

**SGC 4. RESPONSIBILITY FOR COMPLIANCE WITH OSHA**

- A. All work, materials, work safety procedures and equipment shall be in full accordance with the latest OSHA rules and regulations.
- B. Contractor warrants that Contractor and each of their subcontractors shall, in performance of this Contract, comply with each and every compliance order issued pursuant to OSHA and CAL-OSHA. The Contractor assumes full and total responsibility for compliance with OSHA and CAL-OSHA Standards by their subcontractors as well as himself. The cost of complying with any compliance order and/or payment of any penalty assessed pursuant to OSHA and CAL-OSHA shall be borne by the Contractor. Contractor shall save, keep and hold harmless the Owner and all officers, employees and agents thereof from all liabilities, costs or expenses in law or in equity, that may at any time arise or be set up because of Contractor's or subcontractor's non-compliance or alleged non-compliance with OSHA and CAL-OSHA requirements.
- C. Nothing contained herein shall be deemed to prevent the Contractor and their subcontractors from otherwise allocating between themselves responsibility for compliance with OSHA and CAL-OSHA requirements; provided, however, that the Contractor shall not thereby be, in any manner whatsoever, relieved of their responsibility to the Owner as herein above set forth.

**SGC 5. AS BUILT DRAWINGS**

- A. The Contractor shall be given an extra set of drawings and specifications which shall be kept at the site of the Work at all times. Exact locations of all pipes and conduits, and all changes in

construction and details shall be indicated and dimensioned upon these drawings, and all changes in materials and equipment installed shall be indicated in these specifications. The as-built drawings shall be current (up-to-date) to qualify for payment; the job Inspector will verify. Upon completion of the Work, the As-Built Drawings shall be prepared by the Contractor and Specifications shall be reviewed by the Owner's Representative and Consultants and returned to the Owner prior to the final payment. The As-Built Drawings shall be neatly drafted on erasable mylar reproducible transparencies, or printed on vellum and submitted as a .dwg file if prepared electronically.

**SGC 6. FINAL CERTIFICATES**

- A. When the Work is ready for acceptance, by the Owner, the Owner's Representative shall so certify in writing to the Owner, indicating substantial completion and that the building can be occupied and used and a Certificate of Acceptance will be issued to the Contractor which will bring their Progress Payment up to ninety-five (95%) percent of the Contract Price, with five (5%) percent to remain in retention until after Notice of Completion, less sums withheld regarding liquidated damages, if any, or any other damages incurred by owner, or other sums withheld pursuant to the terms of this agreement or by law.
- B. Notice of Completion will be filed by the Owner after substantial completion and acceptance of the Work by the Board of Supervisors. Providing no stop notices have been filed, thirty-five days after filing of such notice of completion, payment due under the Contract will become due to the Contractor and the Owner's Representative shall so certify to the Owner authorizing the final payment. Such payment may withhold any reasonable sums payable to Contractor for any Work which has not been completed on said date, or that the Owner may have found defective and ordered to be replaced; final payment for withholding to be made when certified by Owner's Representative in writing to Owner.

**SGC 7. LIENS AND STOP NOTICES**

- A. Should Stop Notices be filed with the Owner, Owner shall in accordance with California Civil Code Section 9358, withhold the amount claimed, plus an allowance of 25% to cover its litigation costs plus interest at the rate of 10%, from certificates until such claims have been resolved pursuant to law.

**SGC 8. GUARANTEES AND MAINTENANCE MANUALS**

- A. The Contractor and each subcontractor and each supplier shall provide to the Owner, copies of all maintenance guarantees, maintenance manuals and technical specifications relating to their portion of the Project prior to completion of the Project, and in accordance with the GENERAL REQUIREMENTS, PROJECT CLOSE-OUT.

**SGC 9. THE WORK**

- A. The Work comprises the completed construction required by the Contract Documents and approved change orders and includes all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

**SGC 10. THE PROJECT**

- A. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part.
- B. By executing the Contract, the Contractor represents that Contractor has visited the sites, familiarized themselves with the local conditions under which the Work is to be performed, and correlated their observations with the requirements of the Contract Documents.

- C. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.
- D. The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among subcontractors or in establishing the extent of Work to be performed by any trade.

**SGC 11. OWNER**

- A. The Owner shall forward all instruction to the Contractor through the Owner's Representative.
- B. Information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the Work.

**SGC 12. OWNER'S RIGHT TO STOP THE WORK**

- A. If the Contractor fails to correct defective Work as required by GC 17, or persistently fails to carry out the Work in accordance with the contract Documents, the Owner, by a written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

**SGC 13. OWNER'S RIGHT TO CARRY OUT THE WORK**

- A. If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seven calendar days after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, after seven calendar days following receipt by the Contractor of an additional written notice and without prejudice to any other remedy the Owner may have, make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Owner's Representative or Architect's additional services made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner immediately upon demand.

**SGC 14. INDEMNIFICATION**

- A. To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, Owner's Representative, Inspector and the Architect and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense is (1) attributable to bodily injury, sickness, disease or death, or the injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, and subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder; excepting only such claims as are caused by the sole negligence or willful misconduct of the Owner, Owner's Representative, Inspector or Architect. Such obligation shall

not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

- B. In any and all claims against the Owner, Owner's Representative, Inspector or the Architect or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under Workers' or Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.
- C. The obligations of the Contractor under this paragraph shall not extend to the liability of Owner's Representative or the Architect, their agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, design or specification, or (2) the giving of or the failure to give directions or instruction by the Owner's Representative or the Architect, their agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

**SGC 15. COMPLIANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE INTERNATIONAL BUILDING CODE**

- A. Governing Codes: Title 24, California Code of Regulations (C.C.R.), latest edition which adopts and amends the International Building Code, latest edition; International Fire Code, latest edition; Uniform Mechanical Code, latest edition; National Electrical Code, latest edition; Uniform Mechanical Code, latest edition; and the Uniform Plumbing Code, latest edition. The project shall also comply with the Americans with Disabilities Act, and the latest editions of associated regulations.

**SGC 16. LIABILITY OF CONTRACTOR**

- A. The Contractor shall do all of the Work and furnish all labor, materials, tools, and appliances, except as otherwise herein expressly stipulated, necessary or proper for performing the Work herein required in the manner and within the time herein specified. The mention of any specific duty or liability imposed upon the Contractor shall not be construed as a limitation or restriction of any general liability or duty imposed upon the Contractor by this contract, said reference to any specific duty or liability being made herein merely for the purpose of explanation.
- B. The right of general supervision by the Owner shall not make the Contractor an agent or employee of the Owner, and the liability of the Contractor for all damages to persons or to public or private property arising from the Contractor's execution of the Work shall not be lessened because of such general supervision.
- C. Until the completion and final acceptance by the Owner of all of the Work under and implied by this contract, the Work shall be under the responsible care and charge of the Contractor. The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erectments and repairs occasioned or rendered necessary or caused of any nature whatsoever, excepting only acts of God not covered by the all-risk insurance policy called for in Article GC 4 and not other, to all or any portions of the Work except as otherwise expressly stipulated.

**SGC 17. NUCLEAR FREE HUMBOLDT COUNTY ORDINANCE COMPLIANCE**

- A. Neither the Contractor, their Subcontractors or their suppliers are Nuclear Weapons Contractors, and are not knowingly or intentionally engaged in the research, development, production, or testing of nuclear warheads, nuclear weapons systems, or nuclear weapons components, as defined by the Nuclear Free Humboldt County Ordinance. Contractor, their Subcontractors and/or their suppliers agree to notify Owner immediately if they become a nuclear weapons contractor as defined above.

**SGC 18. REQUIRED LISTING OF PROPOSED SUBCONTRACTORS**

- A. Each proposal shall have listed therein the name, address, description of work, contractor's license number, and DIR registration number of each subcontractor to whom the bidder proposes to subcontract portions of the work in the amount of 1/2 of one percent of their total bid, in accordance with the Subletting and Subcontracting Fair Practices Act, commencing with Section 4100 of the Public Contract Code and for verification of conformance with Labor Code Sections 1771 and 1725.5. The bidder's attention is invited to other provisions of said Act related to the imposition of penalties for a failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions.
- B. Pursuant to Section 1771.1(a) of the California Labor Code, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in Sections 1770 et seq. of the Labor Code, unless currently registered and qualified to perform public work pursuant to Section 1725.5 of the Labor Code. It is not a violation of Section 1771.1(a) 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.
- C. A sheet for listing the subcontractors, as required herein, is included in the proposal.

**SGC 19. NONDISCRIMINATION**

- A. During the performance of this contract, the Contractor and its subcontractors shall not deny the contract's benefits to any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they unlawfully discriminate, harass or allow harassment, against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age (over 40), marital status, denial of family care leave and denial of pregnancy disability leave in connection with any program or activity funded in whole or in part by Federal and/or State funds provided through this grant contract.
- B. Contractor and all subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Contractor and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12990 [a-f] et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.).
- C. The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this contract by reference and made a part hereof as set forth in full. Contractor and subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.
- D. Contractor shall comply with all applicable nondiscrimination laws and regulations.
- E. The Contractor and all subcontractors shall include the nondiscrimination and compliance provisions of this clause in all contracts and subcontracts to perform work under the contract.

**SGC 20. HAZARDOUS WASTE IN EXCAVATION**

- A. If the Contractor encounters material in excavation which Contractor has reason to believe may be hazardous waste, as defined by Section 25117 of the Health and Safety Code, Contractor shall immediately so notify the Owner's Representative in writing. Excavation in the immediate area of the suspected hazardous material shall be suspended until the OWNER authorizes it to be

resumed. If such suspension delays the current controlling operation, the Contractor will be granted an extension of time by means of a change order.

- B. The Owner reserves the right to use other forces for exploratory work to identify and determine the extent of such material and for removing hazardous material from such area.

**SGC 21. CONSTRUCTION ACTIVITIES**

- A. Construction activities at the site shall be as required by the Contractor to complete the project by the prescribed completion date. Contractor must comply with Noise Abatement Provisions.

**SGC 22. DISCOVERY OF HUMAN REMAINS OR AN ARCHAEOLOGICAL SITE**

- A. If during construction activities, human remains or evidence of an archaeological site, including outhouse pits, construction shall be immediately halted and the Owner's Representative notified who will request an evaluation by a qualified archaeologist, approved by the Owner as to whether the discovery constitutes an "important archaeological resource" as defined in Section III, Appendix K of the CEQA Guidelines.
- B. If the resource is determined to be important, mitigation shall proceed as outlined by Appendix K of the Guidelines and as recommended by the archaeologist.

**SGC 23. CONTRACTOR RESPONSIBILITY AND DEBARMENT**

- A. A responsible contractor is a contractor who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity and experience to satisfactorily perform the contract. It is the County's policy to conduct business only with responsible contractors. (Ord. 2291, § 1, 01/07/2003)
- B. The contractor is hereby notified that, in accordance with Title II, Division 14 of the County Code, if the County acquires information concerning the performance of the contractor on this or other contract which indicates that the contractor is not responsible, the County may, in addition to other remedies provided in the contract, debar the contractor from bidding on County contracts for a specified period of time, not to exceed three (3) years, and terminate any or all existing contracts the contractor may have with the County. (Ord. 2291, § 1, 01/07/2003)
- C. The County may debar a contractor if the Board of Supervisors finds, in its discretion, that the contractor has done any of the following: (1) violated any term of a contract with the County; (2) committed any act or omission which negatively reflects on the contractor's quality, fitness, or capacity to perform a contract with the County or any other public entity, or engaged in a pattern or practice which negatively reflects on same; (3) committed an act or offense which indicates a lack of business integrity or business honesty; or (4) made or submitted a false claim against the County or any other public entity. (Ord. 2291, § 1, 01/07/2003)
- D. If there is evidence that the contractor may be subject to debarment, the department will notify the contractor in writing of the evidence which is the basis for the proposed debarment and will advise the contractor of the scheduled date for a debarment hearing before the CHB (Contractor's Hearing Board). (Ord. 2291, § 1, 01/07/2003)
- E. The CHB will conduct a hearing where evidence on the proposed debarment is presented. The contractor and/or the contractor's representative shall be given an opportunity to submit evidence at that hearing. After the hearing, the CHB shall prepare a proposed decision, which shall contain a recommendation regarding whether the contractor should be debarred, and, if so, the

appropriate length of time of the debarment. If the contractor fails to avail itself of the opportunity to submit evidence to the CHB, the contractor may be deemed to have waived all rights of appeal. (Ord. 2291, § 1, 01/07/2003)

- F. A record of the hearing, the proposed decision and any other recommendation of the CHB shall be presented to the Board of Supervisors. The Board of Supervisors shall have the right to modify, deny or adopt the proposed decision and recommendation of the hearing board. (Ord. 2291, § 1, 01/07/2003)
- G. These terms shall also apply to subcontractors and subconsultants of County contractors. (Ord. 2291, § 1, 01/07/2003)

**SGC 24. BID PROTEST**

Any bid protest must be in writing and must be received by the Director of Public Works, Humboldt County Department of Public Works, 1106 Second Street, Eureka, CA, 95501, Fax: (707) 445-7409 or by email before 5:00 p.m. no later than three (3) working days following bid opening (the "Bid Protest Deadline") and must comply with the following requirements:

- A. Only a bidder who has actually submitted a Bid Proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.
- B. The bid protest must contain a complete statement of the basis for the protest and all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion or portions of the Contract Documents upon which the protest is based. The protest must include the name, address and telephone number of the person representing the protesting bidder if different from the protesting bidder.
- C. A copy of the protest and all supporting documents must also be transmitted by fax or by e-mail, by or before the Bid Protest Deadline, to the protested bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.
- D. The protested bidder may submit a written response to the protest, provided the response is received by the Department Director before 5:00 p.m., within two (2) working days after the Bid Protest Deadline or after receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must include all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address and telephone number of the person representing the protested bidder if different from the protested bidder.
- E. The procedure and time limits set forth in this section are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. The bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

**END SUPPLEMENTARY GENERAL CONDITIONS**



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SUMMARY OF WORK

SECTION 01 11 00

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**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Contractor's use of site and premises.
- B. County-furnished, Contractor-installed (OFICI) items.
- C. County's occupancy requirements.
- D. Specification formats and conventions.

1.2 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Vehicle access to Project site shall be held to a minimum. Vehicle access will be on one specific route approved by County; no exceptions will be allowed.
- B. Coordinate use of the premises under the direction of the County.
- C. Assume full responsibility for the protection and safekeeping of materials, products, and equipment under this Contract, stored on the site.
- D. Move any stored materials, products, and equipment under Contractor's control which interfere with the operations of County or a separate contractor.
- E. Obtain and pay for the use of additional storage or work areas needed for Contractor's operations.
- F. Contractor shall be aware of and abide by the Humboldt County and local Noise Ordinance and County's noise prevention requirements. Contractor to verify County's requirements.

1.3 COUNTY-FURNISHED AND CONTRACTOR-INSTALLED (OFICI) ITEMS

- A. County-Furnished and Contractor-Installed (OFICI) Items: As indicated on the Drawings and Technical Specifications.
- B. County's Responsibilities:
  - 1. County will furnish products indicated. Schedule relocation of items with County.
  - 2. After relocation, County will inspect delivered items for damage, jointly with Contractor.
- C. Contractor's Responsibilities:
  - 1. Contractor is responsible for relocating, unloading, and handling County-furnished items at Project site.
  - 2. Contractor is responsible for protecting County-furnished items from damage during storage and handling, including damage from exposure to the elements.
  - 3. Contractor shall install and incorporate County-furnished items into the Work, as indicated and as required. Work includes providing support systems to receive County's equipment and making plumbing, mechanical, electrical connections, and miscellaneous work items associated with installation of County-furnished items.
  - 4. Contractor shall repair or replace County-furnished items damaged by Contractor's operations, as approved by County in writing.

5. Contractor shall furnish and install fasteners and other accessories, as required for complete installation of County-furnished items.

#### 1.4 COUNTY'S OCCUPANCY REQUIREMENTS

- A. Full County Occupancy: County will occupy the Project site, with the exception of areas under construction, during the entire construction period to conduct normal operations.
- B. Cooperate with County to minimize conflicts, and to facilitate County's operations.
- C. Verify occupancy requirements with County, and schedule the Work to accommodate County's requirements.
- D. Maintain access to existing walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways or other occupied or used facilities without written permission from County and authorities having jurisdiction.
- E. Provide not less than 72 hours' notice to County of activities that will affect County's operations.

#### 1.5 ENVIRONMENTAL MANAGEMENT

- A. Spills: Contractor shall clean up all fluid spills caused by leaks in the equipment or generated while Contractor is performing the work under this Contract. Contractor shall provide drip catch pans for all equipment that drips or leaks oils or other fluids. Spills generated by Contractor's operation shall be cleaned up by Contractor at no cost to County.
- B. Dust and Noise Control:
  1. Precaution shall be exercised at all times to control dust and excessive noise created as a result of any operations during the construction period.
  2. If serious problems and/or complaints arise due to airborne dust and excessive noise, and when directed by the County, operations causing such problems shall be temporarily discontinued until a suitable remedy is established. The remedy shall be approved by the County before implementation, and shall be considered part of Contractor's normal effort to maintain safety and cleanliness without cause for further payment.

#### 1.6 MATERIALS AND WORKMANSHIP

- A. Except as otherwise specified all materials and equipment incorporated in the Work under the Contract shall be new. All workmanship shall be first-class and by persons qualified in the respective trades.

#### 1.7 ACCIDENT PREVENTION AND PROTECTION OF LIVES AND HEALTH

- A. Precaution shall be exercised at all times for protection of all personnel and occupants, including employees of Contractor, County, and property.
- B. The California Department of Industrial Relations, Division of Occupational Safety and Health (DOSH, also known as Cal/OSHA) requirements for safety and health protection of workers and public apply. Other requirements not covered by Cal/OSHA, shall be in accordance with U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requirements.
- C. Comply with safety requirements of CCR, Title 8, Division 1, Chapter 4, "Division of Industrial Safety," and Title 8, Division 1, Chapter 3.2, "Cal/OSHA Regulations"; CCR, Title 24, CBC; and other applicable building and construction codes. Machinery, equipment, openings, power lines, and all other safety hazards shall be guarded or eliminated in accordance with safety requirements of Title 8, and Manual of Accident Prevention in Construction published by the Associated General Contractors of America.

## 1.8 PROTECTION OF EXISTING FACILITIES

- A. Contractor shall take appropriate measures to prevent damage to existing facilities. Should damage occur, such facilities shall be restored to original condition, at no cost to County.
  - 1. Contractor shall arrange for protection of existing buildings at all times. Contractor shall furnish, install, and maintain, necessary barricades, temporary coverings, etc., as required for protection, and remove them at completion of the Work. When all Work is complete, damaged areas of the premises shall be restored to original undamaged condition that existed prior to installation of temporary protection.
- B. Housekeeping: The premises shall be kept in a clean, safe condition at all times. Rubbish shall be removed as fast as it accumulates.
- C. Burning: Burning of refuse, debris, and construction waste at Project site will not be permitted.

## 1.9 OVERLOADING

- A. Contractor shall not overload any part or parts of structures beyond their safe calculated carrying capacities by placing materials, equipment, tools, machinery or any other item thereon. No loads shall be placed on floors or roofs before they have attained their permanent and safe strength.

## 1.10 MANUFACTURER'S INSTRUCTIONS

- A. Where required in the Specifications that materials, products, equipment, and processes be installed or applied in accordance with manufacturer's instructions, directions, or specifications, or stated in words to that effect, it shall be construed to mean that said installation or application shall be in strict accordance with printed instructions furnished by manufacturer of the specified item and is suitable for use under conditions similar to those at the jobsite. Three copies of such instructions shall be included in the applicable submittal and furnished to the County for review. Obtain County's acceptance prior to commencement of the Work.

## 1.11 RESPONSIBILITY FOR THEFT AND DAMAGE

- A. County will not be responsible for the loss or theft of Contractor's tools, equipment and materials.

## 1.12 FIRE PROTECTION

- A. Contractor shall at all times maintain good housekeeping practices to reduce the risk of fire and water damage. All scrap materials, rubbish and trash shall be removed daily from jobsite, inside and around the buildings or structures, as applicable, and shall not be scattered on adjacent property.
- B. Suitable storage space shall be provided outside immediate building areas during construction for temporary storage of flammable materials and paints, as required by CFC Chapter 14 and NFPA 241. Excess flammable liquids being used inside the building shall be kept in closed metal containers and be removed from the building during unused periods.
- C. Contractor shall provide temporary fire extinguishers during construction in accordance with the recommendations of CBC Chapter 33, CFC Chapter 14, and NFPA Bulletins Nos. 10 and 241. However, in all cases a minimum of one fire extinguisher shall be available for use.
- D. Under provisions of CFC Chapters 14 and 26, provide a fire extinguisher at each location where cutting, soldering, or welding is being performed. Where electric or gas welding or cutting work is done, interposed shields of noncombustible material shall be used to protect against fire damage due to sparks and hot metal. When temporary heating devices are used, a watchman shall be present to cover periods when other workmen are not on the premises.

1.13 EMERGENCY CONDITIONS

- A. Emergency condition shall be any condition at the Project site which has the actual or potential for significant adverse effects to persons or property, whether or not resulting from Contractor's operations.
- B. Immediate action shall be taken by Contractor by whatever means necessary to alleviate the condition and to prevent damage or injury to persons or property. County shall be notified of the existence of such a condition, but shall not be called upon to perform emergency service.
- C. County may not respond to the emergency condition, which shall not be used as an excuse by Contractor to neglect immediate action; County will not be responsible or liable for any resulting conditions. Absence of Contractor's Representative during emergency conditions at jobsite shall not relieve Contractor from contractual responsibility of providing an immediate response to the situation, for restoration of conditions to normalcy.
- D. If the emergency conditions are not caused by Contractor's fault or neglect, the Contract Sum shall be adjusted to reflect the actual direct field costs of labor and materials to perform and complete emergency measures.
- E. The Contract Time shall also be adjusted to reflect the actual direct effect of such actions to the then critical path of the Construction Progress Schedule. The foregoing notwithstanding, adjustments of the Contract Sum or the Contract Time for actions taken by Contractor in response to emergency circumstances shall be subject to Contractor's strict compliance with all other applicable provisions of the Contract Documents relating to notices and time for delivery of notices.

1.14 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and numbering system of CSI "MasterFormat, 2004 Edition.
- B. Division 01 Sections govern the execution of the Work of all Sections in the Specifications.
- C. Specifications Conventions: Singular words shall be interpreted as plural and plural words shall be interpreted as singular, where applicable, as the context of the Contract Documents indicates.
- D. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

**PART 2 PRODUCTS**

Not Used

**PART 3 EXECUTION**

Not Used

**END OF SECTION**

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PRODUCT SUBSTITUTION PROCEDURES

SECTION 01 25 13

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**PART 1 – GENERAL**

1.1 SUMMARY

- A. There are two time periods allowed for submission of data substantiating a request for a substitution of "an equal" item:
1. Bidders may request a substitution up to six (6) calendar days prior to the time indicated for receipt of bids in Notice to Bidders. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor, and the Contractor shall furnish all information necessary as required by County. County shall be the sole judge as to the quality and suitability of alternative articles or materials, and the County's decision shall be final. The Contractor's attention is directed to these Special Provisions.
  2. Contractor may request a substitution after the award of the contract for a period of thirty five (35) calendar days immediately following award of the contract.
- B. Contractor shall provide products from one manufacturer for each type or kind as applicable. Contractor shall provide secondary materials as recommended by manufacturers of primary materials.
- C. Contractor shall provide products selected or equal. Products submitted for substitution as an equal shall be submitted with acceptable documentation, and include costs of substitution including related work.
- D. Request for substitution must be in writing. Conditions for substitution include:
1. An 'or equal' phrase in the specifications.
  2. Specified material shall be coordinated with other work.
  3. Specified material is acceptable to authorities having jurisdiction.
  4. For requests for substitution made after the award of the contract, substantial advantage is offered to the County in terms of cost, time, or other valuable consideration.
- E. Approval of shop drawings, product data, or samples is not a substitution approval unless clearly presented as a substitution at the time of submittal.
- F. For convenience in designation on the plans or in the specifications, certain articles or materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer and the manufacturer's catalogue information. The use of an alternative article or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the following requirements:

1. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor and the Contractor shall furnish all information necessary as required by the County. The County shall be the sole judge as to the quality and suitability of alternative articles or materials, and the County's decision shall be final.
2. Whenever the Specifications permit the substitution of a similar or equivalent material or article, no tests or action relating to the approval of the substitute material will be made until the request for substitution is made in writing by the Contractor accompanied by complete data as to the equality of the material or article proposed. The request shall be made in ample time to permit approval without delaying the Work.

**END OF SECTION**

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PROJECT MEETINGS

SECTION 01 31 19

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**PART 1 – GENERAL REQUIREMENTS**

1.1 RELATED DOCUMENTS:

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

1.2 PRECONSTRUCTION CONFERENCE

- A. The Preconstruction Conference will be scheduled within 15 working days after the County has issued the Notice to Proceed, but prior to actual start of the Work.
- B. Attendance: Representative of County, Project Architect, Contractor, contractor's subcontractors and representatives from the agencies occupying the building.
- C. Minimum agenda: Data will be distributed and discussed on:
  - 1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and the County.
  - 2. Channels and procedures for communication.
  - 3. Review set-up area.
  - 4. Review all required permits.
  - 5. Review insurance requirements.
  - 6. Construction schedule, including sequence of critical work.
  - 7. Contract Documents, including distribution of required copies of Drawings and revisions.
  - 8. Processing of Shop Drawings and other data submitted to the County for review.
  - 9. Processing of field decisions and Change Orders.
  - 10. Rules and regulations governing performance of the work. How will Contractor's people on site respond to fire accident of other emergencies.
  - 11. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.
  - 12. How will Contractor work with the security, noise and access limitations of this facility and the agencies that occupy this facility.
  - 13. How will Contractor get materials to and from the roof and throughout the facility?

1.3 PROGRESS MEETINGS

- A. Will be scheduled by the County bi-weekly.
- B. Attendance: County, Contractor, Job Superintendent, Project Architect, Subcontractors and representatives of the agencies that occupy the building, as appropriate.
- C. Minimum Agenda:
  - 1. Review of work progress.
  - 2. Field observations, problems, and decisions.
  - 3. Identification of problems which impede planned progress.
  - 4. Maintenance of progress schedule.
  - 5. Corrective measures to regain projected schedules.
  - 6. Planned progress during succeeding work period.
  - 7. Coordination of projected progress.
  - 8. Maintenance of quality and work standards.
  - 9. Effect of proposed changes on progress, schedule, and coordination.
  - 10. Impacts of the work on the agencies occupying the building.
  - 11. Other business relating to work.

1.4 PRE-FINAL INSPECTION

- A. Contractor must inform Project Architect and County that Contractor is ready for pre-final inspection and that the pre-final inspection will then be scheduled.
- B. Installations or details noted as deficient during inspection must be repaired and corrected by Contractor.
- C. Once corrections have been made, contractor must inform Project Architect and County so a second inspection can be scheduled.

1.5 FINAL INSPECTION

- A. Scheduled by Contractor upon job completion.
- B. Attendance: County or designated representative, Contractor, Project Architect.
- C. Minimum Agenda:
  - 1. Walkover inspection.
  - 2. Identification of needed corrections to be completed by Contractor and final approval from warrantor.

**END OF SECTION 01 31 19**



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CONSTRUCTION PROGRESS SCHEDULES

SECTION 01 32 16

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**PART 1 – GENERAL**

- 1.1 The Contractor shall submit to the County construction schedules as required by and conforming to Section 00 31 13, "Construction Schedule and Liquidated Damages;" to Part 8, "Time," of Section 00 72 13, "General Conditions;" and to Section 01 33 00, "Submittal Procedures."
- 1.2 The Contractor may furnish the construction schedule on a form of its choice.
- 1.3 The construction schedule shall show the order in which the Contractor proposes to carry out the Work, the dates on which he will start the salient features of the Work (including the submission of required submittals and the procurement of materials), the proposed dates and times of utility shut downs or any contractor operation that might impact the Work Site's operations, and the contemplated dates for completing the said salient features. The Contractor shall coordinate Contractor's activities with the County's use of the Work Site.
- 1.4 The construction schedules submitted shall be consistent in all respects with the time and order of work requirements of the Contract, conform to Section 00 31 13, "Construction Schedule and Liquidated Damages;" to Part 8, "Time," of Section 00 72 13, "General Conditions."

**PART 2 – PRODUCTS**

NOT USED

**PART 3 – EXECUTION**

NOT USED

**END OF SECTION**

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SUBMITTAL PROCEDURES

SECTION 01 33 00

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**PART 1 – GENERAL**

- 1.1 Timing: Make submittals far enough in advance of scheduled dates of installation to allow the time required for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery. Contractor shall allow the County a minimum of 14 calendar days from receipt by the County for review. Contractor is to coordinate submittal review items with critical timelines with the County to avoid problems.
- 1.2 Identification:
- A. Identify each submittal and resubmittal with the following information:
1. Project name and address as they appear on the Contract Documents.
  2. Contract number.
  3. Contractor's name and address.
  4. Date of submission.
  5. Numbering System: Submittals shall be identified by specification section (i.e., 02 81 02-001, 07 21 13-001, 11 19 10-001, etc.). Any resubmittals shall be numbered sequentially according to the original submittal section, followed by the subscript 1, .2, .3 submittal number (i.e., 001.1, 001.2, etc.). Submittals and resubmittals shall be kept intact with the original number. Do not add new drawing or information outside the scope of the original submittal, unless specifically requested. Do not assign a new number for a resubmittal.
  6. Reference: List Specification Section number and product reference as a cross-reference for each submittal.
- B. Identify each submittal with the following additional identification:
1. Contractor's stamp with initials or signature, certifying to review of submittal, compliance with Contract Documents, and coordination with other impacted work, and verification of field measurements. The County will return any submittal not bearing this stamp without being reviewed.
  2. Drawing and Specification Section numbers to which the submittal applies.
  3. Subcontractor's or supplier's name and address.
  4. Name and telephone number of the individual to contact for additional information regarding the submittal.
  5. Whether it is an original or a resubmittal.
- 1.3 Coordination of Submittals:
- A. General: Prior to submittal for the County's review, as applicable, fully coordinate material as follows:

1. Determine and verify field dimensions and conditions, materials, catalog numbers, and similar data.
  2. Coordinate shop drawing submittals with previously issued addenda and information bulletins.
  3. Coordinate with the various types of work and public agencies involved.
  4. Secure necessary approvals from public agencies and others and signify by stamp, or other means, that approvals have been secured.
  5. Unless otherwise specifically permitted by the County, make submittals in groups containing all associated items.
- B. Completeness: Submittals shall be complete; partial submittals will be rejected for not complying with the Contract Documents.

## **PART 2 – SUBMITTALS PROCEDURES**

- 2.1 Requests for deviation from Contract Documents shall be submitted for consideration before submittal of affected items. Only deviations, which have been previously accepted in writing, shall be included in submittals.
- 2.2 Place permanent label or title block on each submittal for identification. Indicate name or entity preparing each submittal in label or title block. Refer to Part 1.3.1 above for further information required on each submittal label or title block.
- A. Provide space on label or beside title block to record Contractor's and County's review and approval markings and action taken.
- 2.3 Contractor's Review:
- A. Review submittals for accuracy, completeness, and conformity with Contract Documents.
1. Submittal shall be construed as stipulating Contractor has thoroughly and completely reviewed, and coordinated data.
  2. Submittals that indicate less than Contractor's full compliance will be returned without action.
  3. Delays caused by failure to comply will not be acceptable basis for extension of Completion Time.
- B. Certify submittals have been reviewed and coordinated by adding following affidavit to each submittal:
- "The undersigned certifies this submittal has been reviewed, approved, and coordinated in compliance with requirements of this section and the contract documents."
- Signature\_\_\_\_\_ Date\_\_\_\_\_
- Name Printed\_\_\_\_\_ Title\_\_\_\_\_
- C. Submittals not certified by being stamped and signed by Contractor will be returned without action, as will submittals, which, in the County's opinion, have not been

- adequately reviewed and coordinated by the Contractor.
- 2.4 Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
- 2.5 Package each submittal appropriately for transmittal and handling.
- 2.6 County's Review:
- A. Submittals are reviewed for general conformance with design concept and general compliance with information given in Contract Documents only.
  - B. Review of separate item shall not indicate acceptance of assembly of which item is part.
  - C. The County or its consultants, as applicable, will review the submittal; mark the required revisions; stamp the submittals and indicate "No Exceptions Noted," "Make Corrections Noted," "Revise and Resubmit," or "Rejected," and return the submittals. "Revise and Resubmit" or "Rejected" stamps shall not be construed by the Contractor as a valid reason for an extension of time.
- 2.7 Contractor shall review the returned drawings and take appropriate action as indicated.
- A. If drawings are marked "Revise and Resubmit," make revisions and indicate them with a "cloud," stamp and date, and resubmit in the same manner and number as for the original submittal.
  - B. If drawings are marked "Rejected," make a new submittal and submit in the same manner and number as for the original submittal.
  - C. If drawings are marked "No Exceptions Noted" or "Make Corrections Noted," print and distribute copies as required for Inspector, Contractor and Subcontractors.
- 2.8 Review shall not relieve Contractor from responsibility for errors or deviations from requirements of Contract Documents.
- 2.9 Revisions: Make only those revisions required or accepted by County.
- 2.10 Submittal Log: Maintain accurate submittal log for duration of Contract. Indicate status of all submittals at all times. Make submittal log available for the County's review upon request.
- 2.11 Number of Submittal items required:
- A. Shop Drawings: submit a minimum of four (4) black-line or blue-line prints.
  - B. Product Data: Submit in the quantity required to be returned, together with three additional copies each of brochures, catalog cuts, and similar material for mechanical, electrical, hardware, and elevator items; and three additional copies for all others.
    - 1. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, rough-in diagrams and templates, wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

2. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
  - a. Manufacturer's printed recommendations.
  - b. Compliance with recognized trade association standards.
  - c. Compliance with recognized testing agency standards.
  - d. Application of testing agency labels and seals.
  - e. Notation of dimensions verified by field measurement.
  - f. Notation of coordination requirements.
3. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

C. Samples:

1. Submit in the size specified in the individual Specification Sections, and in the quantity required to be returned to the Contractor, together with two additional Samples, which will be retained by the County or the County's consultants, as applicable.
2. Submit samples to illustrate functional and aesthetic characteristics of product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
3. Preliminary Submittals:
  - a. Unless precise color, pattern, and texture or similar characteristics are specifically described, submit full set of choices for material or product.
  - b. Preliminary submittals will be reviewed and returned with County's mark indicating selection and other action.
  - c. County reserves right not to make individual determination or selections until all samples of all materials are submitted.
  - d. Submit samples of all selected colors, patterns, textures or other similar characteristics as selected by County.
4. Where variations in color, pattern, texture or other characteristics are inherent in material or product, submit multiple units (not less than 3) that show approximate limits of variations.
5. Accepted samples will form standard of comparison for finished work. Defects, and deviations in excess of those in accepted samples, are unacceptable and are subject to rejection of completed work.
6. Include identification on each sample, with full project information, including:
  - a. Project name and location.

- b. Manufacturer and supplier.
  - c. Name, finish, and composition of material.
  - d. Location where material is to be used.
  - e. Specification Section number.
  - f. Reviewed samples that may be used in the Work are indicated in individual specification sections.
  - g. Field Samples: Provide field samples as required by individual sections. Install samples in locations as directed, completed and finished.
7. Other Submittals: Submit as specified in the individual Specification Sections.

### **PART 3 – MANUFACTURERS’ INSTRUCTION**

- 3.1 When specified in individual specification Sections, submit manufacturers’ printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- 3.2 Identify conflicts between manufacturers’ instructions and the Contract Documents.

### **PART 4 – PATTERNS AND COLORS**

- 4.1 Unless the exact pattern and color of a product are indicated in the Contract Documents, whenever a choice of pattern or color is available for a product, submit accurate color charts and pattern charts to the County for review and selection.

### **PART 5 – CERTIFICATES OF COMPLIANCE**

- 5.1 Submit certificates of compliance with the associated Shop Drawings, Product Data, Samples, and other submittals required for the product.
- 5.2 Submit on 8-1/2-inch-x-11-inch white paper.
- 5.3 Submit three copies.
- 5.4 Submit in form of letter or company standard forms, signed by officer of manufacturer.
- 5.5 Each certification shall include the following:
  1. Project name and location
  2. Contractor’s name and address
  3. Quantity and date or dates of shipment or delivery to which certificate applies
  4. Manufacturer’s name
- 5.6 Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- 5.7 Certificates may be based on recent or previous test results of materials or products, but must be acceptable to County.

5.8 The County will retain the certificates of compliance; no review reply is intended.

**END OF SECTION**

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MODIFICATION PROCEDURES

SECTION 01 35 00

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**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing the following contract modifications:
  - 1. Request for Information.
  - 2. Field Order.
  - 3. Request for Cost Proposal.
  - 4. Cost Proposal.
  - 5. Change Orders.

1.2 DEFINITIONS

- A. Request for Information (RFI)
  - 1. Written request submitted by Contractor to Owner's Representative via the County's online project management system on a form supplied by Owner's Representative requesting clarification, interpretation, or additional information pertaining to Contract Documents.
  - 2. An RFI shall not be used as a vehicle for only confirming or verifying issues.
- B. Field Order (FO)
  - 1. Owner's Representative written directives to the Contractor covering a specific aspect of work, signed by the Owner or Owner's lead agency that authorizes changes in the Work to expedite the change order process.
- C. Request for Cost Proposal (RFCP)
  - 1. Written request by the Owner's Representative to the Contractor to quote change to Contract Sum and/or Contract Time for proposed change to Contract Document.
- D. Cost Proposal (CP)
  - 1. Written request by the Contractor to the Owner's Representative to change Contract Sum and/or Contract Time for proposed change to Contract Document.
- E. Change Order (CO)
  - 1. Initiated by the Owner, Contractor, Consultant, Owner's lead agency, or the Owner's Representative and signed by the Owner and Contractor stating their agreement to a change to Contract Documents and adjustment to Sum and/or Contract Time.

1.3 REQUEST FOR INFORMATION (RFI)

- A. Submit RFIs numbered in sequential order, reviewed by the Contractor with respect to Contract Documents.
  - 1. Submit RFIs on forms designated by the Owner's Representative.



- B. Owner's Representative will monitor the RFI process and responses from the Consultant. The Consultant will receive RFIs only from the Owner's Representative; Consultant will not accept RFIs directly from any other entity.
- C. Owner's Representative will receive only legible, properly prepared RFI:
  - 1. Unreadable facsimile machine RFIs, illegibly written RFIs, or RFIs with incomplete information, will be returned promptly without action.
  - 2. RFIs may be transmitted to Owner's Representative by online project management system.
    - a. Owner's Representative will forward to Consultant for review, and return response by same method received from Contractor.
  - 3. Consultant will review RFIs with respect to Contract Documents and return response in a timely manner, generally within 7 calendar days, or commensurate with RFI subject.
    - a. RFIs marked "URGENT" will take precedence over outstanding RFIs and be answered by Consultant as soon as possible.
- D. Contractor being fully familiar with Contract Documents, shall not be relieved of responsibility to coordinate the Work to prevent adverse impact to Project schedule when submitting RFIs to Owner's Representative for clarification or interpretation of Contract Documents, or additional information.
- E. If the Contractor believes the scope of work referenced in the RFI has a cost and /or time impact, he will not proceed with the work until either a Field Order or a Change Order has been issued.

#### 1.4 FIELD ORDER (FO)

- A. Field Orders may include supplementary or revised Drawings and/or Specification to describe changes to Contract Documents.
- B. Field Orders will be executed on forms designated by the Owner's Representative.
- C. Field Orders may be generated by the Contractor's written notice submitted on a Cost Proposal form, that an RFI response or other unforeseen condition has changed the Contract cost and /or time, and that schedule impact will result if written directive is not provided in a timely manner.
- D. Contractor shall provide an estimate of cost and/or time impact at the time of the request for a Field Order.
- E. Owner's Representative will review the request for a Field Order and initiate a written Field Order for authorization by the Owner or Owner's lead agency.
- F. If the Field Order is approved by the Owner or Owner's lead agency, Owner's Representative will release the signed Field Order to the Contractor. If rejected, the Contractor is so notified by the Owner's Representative.

#### 1.5 REQUEST FOR COST PROPOSAL (RFCP)

- A. Request for Cost Proposal is an informational request only, and is not an instruction or authorization to execute a change, or an order to stop Work in progress.
- B. Request for Cost Proposal may include supplementary or revised Drawings and/or Specification to describe proposed changes to Contract Documents.
- C. Contractor shall submit cost and/or time quotation to Owner's Representative within 15 calendar days following receipt of Request for Cost Proposal.

1.6 COST PROPOSAL (CP)

- A. Contractor shall submit to the Owner's Representative a Cost Proposal for all occurrences the Contractor believes impacts Scope of Work cost and/or time.
  - 1. A Cost Proposal shall be submitted within 15 calendar days of the occurrences.
- B. Submit Cost Proposal numbered in sequential order, reviewed by the Contractor with respect to Contract Documents.
  - 1. Submit Cost Proposals on forms designated by the Owner's Representative.
- C. All Cost Proposals submitted shall have detailed breakdown for all associated work, cost and/or time.
- D. Owner's Representative will solicit and monitor independent cost estimates responses from the Consultant.
- E. Owner's Representative shall return Cost Proposal responses and reviews to the Contractor within 15 calendar days following receipt of Cost Proposal.
- F. A processed Cost Proposals is informational back-up for a potential Change Order, and not an instruction or authorization to execute a change, or an order to stop Work in progress.

1.7 CHANGE ORDER (CO)

- A. Change Orders may be initiated by the Owner, Contractor, Consultant, Owner's lead agency, or the Owner's Representative.
- B. Changes to the Project Contract Sum and/or Contract Time listed or indicated in Change Orders shall include or be determined by methods described in the General Conditions.
- C. Owner's Representative has responsibility for processing and administering Change Orders for the Project, and will prepare each Change Order using form designated by the Owner's Representative.
- D. Contractor shall provide all pricing proposals Cost Proposals for a Change Order. The Consultant shall provide independent cost estimates to Cost Proposals.
  - 1. Cost differentials between the Contractor's Cost Proposal and the Owner's Representative may negotiate the Consultants cost estimates.
  - 2. If no agreement is reached, the Owner's Representative may issue a time and material change Order.
    - a. Use Daily Force Account Report designated by Owner's Representative.
- E. The Contractor, Consultant, Owner's Representative, Owner's lead agency and Owner will sign a fully documented Change Order.

1.8 CORRELATING CHANGE ORDERS WITH OTHER CONTRACT REQUIREMENTS

- A. Revise Schedule of Values and Applications for Payment to record each Change Order as a separate item of work with adjustment to Contract Sum and Contract Time.
- B. Revise Construction Schedule to reflect each change in Contract Time.
- C. Record modifications in Record Documents.

**END OF SECTION**

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REFERENCES

SECTION 01 42 00

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**PART 1 – GENERAL**

1.1 SECTION INCLUDES

- A. Reference Standards.
- B. Industry Standards.
- C. Definitions.
- D. Specification format and content explanation.
- E. Codes, regulations and governing agencies.
- F. References, abbreviations, and acronyms.

1.2 REFERENCE STANDARDS

- A. General: References are made throughout the Specification to various codes, reference standards, practices and requirements for materials, work quality, installation, inspections and tests which are published and issued by government agencies, professional and trade organizations, societies, associations and testing agencies. References to these publications are made by acronyms or abbreviations as listed in this Section.
- B. Obtain copies of reference standards, manuals and codes directly from publication sources as needed for proper performance and completion of the Work.
- C. Standards, manuals and codes referenced in the Specifications form part of these Specifications to the extent referenced. No provisions of any such standard, specification, manual, or code or instruction shall be effective to change the duties and responsibilities of County, or Contractor; any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents; nor shall it be effective to assign to County or any of County's consultants, agents, or employees, a duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.
- D. Reference to standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Contract Book unless noted otherwise.

1.3 INDUSTRY STANDARDS

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

- B. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of these specifications.
- C. Updated Standards: At the request of the County, Contractor, or authority having jurisdiction, submit a Change Order Request where an applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. The County will decide whether to issue a Proposal Request to proceed with the updated standard.
- D. Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the County for a decision before proceeding.
- E. Minimum Quantity or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the County for a decision before proceeding.
- F. Copies of Standards: Each entity engaged in construction on the Work is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
- G. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

#### 1.4 DEFINITIONS

- A. General: Words and abbreviations used in the Specifications are given meaning as defined in "The American Heritage Dictionary of the English Language" and as commonly used and accepted in the construction industry. Abbreviations and symbols used on Drawings are identified on Drawings.
- B. Words and Terms: The following words and terms used in the Specifications shall mean as indicated.
  - 1. Accepted Equal: Reviewed and accepted by County as being equal in quality, utility, and appearance.
  - 2. Words and terms "or Approved Equal" and "or Equal" used in the Specifications shall have the same meaning as "Accepted Equal."

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

13. Unless otherwise indicated, the term "experienced," when used with the term "Installer" means having a minimum of 5 previous projects similar in size and scope to this Work, being familiar with the precautions required, and having complied with requirements of the authority having jurisdiction.
14. "Work Site" is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other construction activities as part of the Work.
15. Installer: An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
16. Demolish: Unless otherwise indicated, to demolish an item indicates that the Contractor shall take apart, remove and dispose of the subsequent materials. "Demo" shall mean the same as demolish.

#### 1.5 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 48-Division format and Master Format numbering system.
- B. Specification Content: This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
  1. Abbreviated Language: Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
  2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
    - a. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.
- C. Assignment of Specialists: The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
  1. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

2. Trades: Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

1.6 CODES, REGULATIONS AND GOVERNING AGENCIES

A. California Code of Regulations (CCR).

1. Title 8, Division 1, Chapter 3.2 – California Occupational Safety and Health Regulations (Cal/OSHA).
2. Title 8, Division 1, Chapter 4, Subchapter 4 – Construction Safety Orders.
3. Title 8, Division 1, Chapter 4, Subchapter 6 – Elevator Safety Orders
4. Title 19, Division 1 – Regulations of the State Fire Marshal (SFM).
5. Title 24 – California Building Standards Code (CBSC).
  - a. Part 1 – California Administrative Code (CAC).
  - b. Part 2 – California Building Code (CBC).
  - c. Part 3 – California Electrical Code (CEC).
  - d. Part 4 – California Mechanical Code (CMC).
  - e. Part 5 – California Plumbing Code (CPC).
  - f. Part 6 – California Energy Code.
  - g. Part 7 – California Elevator Safety Construction Code.
  - h. Part 8 – California Historical Building Code.
  - i. Part 9 – California Fire Code.
  - j. Part 10 – California Existing Building Code.
  - k. Part 11 – California Green Building Standards Code.
  - l. Part 12 – California Referenced Standards Code.

B. California Department of Transportation (Caltrans).

C. California Department of General Services (DGS).

D. California Environmental Protection Agency (Cal/EPA).

1. California Air Resources Board (ARB).
2. California State Water Resources Control Board (SWRCB).
3. Department of Pesticide Regulation (DPR).

- E. Code of Federal Regulations (CFR) Title 28, Part 36 – ADA Standards for Accessible Design, Appendix A – ADA Accessibility Guidelines (ADAAG) for Buildings and Facilities.
- F. Occupational Safety and Health Act (OSHA).
- G. U.S. Environmental Protection Agency (EPA).
- H. U.S. Department of Energy (DOE).

#### 1.7 REFERENCES, ABBREVIATIONS AND ACRONYMS

AA	Aluminum Association.
AAADM	American Association of Automatic Door Manufacturers.
AABC	Associated Air Balance Council.
AAC	Aluminum Anodizers Council.
AAMA	American Architectural Manufacturers Association.
AASHTO	American Association of State Highway and Transportation Officials.
AATCC	American Association of Textile Chemists and Colorists.
ABMA	American Boiler Manufacturer's Association.
ACGIH	American Conference of Government Industrial Hygienists, Inc.
ACI	American Concrete Institute.
ACPA	American Concrete Pipe Association.
AF&PA	American Forest and Paper Association (formerly National Forest Products Association).
AFBMA	Anti-Friction Bearing Manufacturer's Association.
AGA	American Gas Association.
AGC	Associated General Contractors of America.
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association.
AHJ	Authority Having Jurisdiction.
AI	Asphalt Institute.
AIA	American Institute of Architects.
AIEE	American Institute of Electrical Engineers.
AIHA	American Industrial Hygiene Association.
AISC	American Institute of Steel Construction.
AISI	American Iron and Steel Institute.
AITC	American Institute of Timber Construction.
ALSC	American Lumber Standards Committee.
AMCA	Air Movement and Control Association.
ANSI	American National Standards Institute, Inc.
APA	The Engineered Wood Association.
API	American Petroleum Institute.
APWA	American Public Works Association.
AQMD	Air Quality Management District.
ARI	Air-Conditioning and Refrigeration Institute.
ARMA	Asphalt Roofing Manufacturers Association.
ASCE	American Society of Civil Engineers.



ASD	Advanced Simulation and Design.
ASHRAE	American Society of Heating Refrigerating and Air Conditioning Engineers.
ASME	American Society of Mechanical Engineers.
ASPA	American Sod Producers Association.
ASSE	American Society of Sanitary Engineers.
ASTM	American Society for Testing and Materials.
ATF	Academy of Textiles and Flooring.
AWC	American Wood Council.
AWCI	Association of Wall and Ceiling Industries.
AWG	American Wire Gage.
AWI	Architectural Woodwork Institute.
AWPA	American Wood Protection Association.
AWS	American Welding Society.
AWWA	American Water Works Association.
BAAQMD	Bay Area Air Quality Management District
BHMA	Builders Hardware Manufacturers Association.
BIA	Brick Industry Association.
BOCA	Building Officials and Code Administrators International, Inc.
CAN/ULC	Underwriters' Laboratory of Canada.
CAS	Chemical Abstracts Service (division of the American Chemical Society).
CBC	California Building Code
CBM	Certified Ballast Manufacturers.
CCR	California Code of Regulations
CDA	Copper Development Association.
CE	US Army Corps of Engineers
CFFA	Chemical Fabrics and Film Association, Inc.
CFR	Code of Federal Regulations
CISCA	Ceiling and Interior Systems Construction Association.
CISPI	Cast Iron Soil Pipe Institute.
CLFMI	Chain Link Fence Manufacturing Institute.
CPA	Composite Panel Association.
CRA	California Redwood Association.
CRI	Carpet and Rug Institute.
CRSI	Concrete Reinforcing Steel Institute.
CS	Commercial Standard.
CSI	Construction Specifications Institute.
CSIAC	California State Industrial Accident Commission.
DHI	Door Hardware Institute.
EIA	Electronic Industries Association.
EIMA	EIFS Industry Manufacturers Association.
ETL	Electrical Testing Laboratories.
EWS	Engineered Wood Systems
FEMA	Federal Emergency Management Agency.
FM	Factory Mutual Research and Engineering Corporation.
FMRC	Factory Mutual Research Corporation.
FS	Federal Specification – U.S. General Services Administration.

FSC	Forest Stewardship Council.
GA	Gypsum Association.
GANA	Glass Association of North America.
GMA	Flat Glass Marketing Association.
HPVA	Hardwood Plywood and Veneer Association.
IAPMO	International Association of Plumbing and Mechanical Officials.
ICC	International Code Council, Inc.
ICC	Interstate Commerce Commission.
ICC-ES	ICC Evaluation Service, Inc.
ICEA	Insulated Cable Engineers Association.
ICRI	International Concrete Repair Institute
IEEE	Institute of Electrical and Electronics Engineers.
IESNA	Illuminating Engineering Society of North America
IMIAC	International Masonry Industry All-Weather Council.
IPCEA	Insulated Power Cable Engineers Association.
ISO	International Standards Organization.
ITS	Intertek Testing Services.
LEED™	Leadership in Energy and Environmental Design (USGBC standard).
LRFD	Load and Resistance Factor Design.
LSGA	Laminators Safety Glass Association.
MBMA	Metal Building Manufacturers Association.
MFMA	Maple Flooring Manufacturers Association.
MFMA	Metal Framing Manufacturers Association.
MIA	Marble Institute of America
MIL	Military Specifications (U.S. Department of Defense).
ML/SFA	Metal Lath/Steel Framing Association Division of NAAMM.
MPI	Master Painters Institute.
MS4	Municipal Separate Storm Sewer Systems.
MSDS	Material Safety and Data Sheet.
MSJC	Masonry Standards Joint Committee.
MSMA	Metal Stud Manufacturers Association.
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry.
MUTCD	Manual of Uniform Traffic Control Devices (U.S. Department of Transportation).
NAAMM	National Association of Architectural Metal Manufacturers.
NAFS	North American Fenestration Standard (Co-published by AAMA & WDMA).
NAPHCC	National Association of Plumbing Heating Cooling Contractors.
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors.
NBFU	National Board of Fire Underwriters.
NBGQA	National Building Granite Quarries Association, Inc.
NCMA	National Concrete Masonry Association.
NCPWB	National Certified Pipe Welding Bureau.
NCRP	National Council on Radiation Protection and Measurement.
NEBB	National Environmental Balancing Bureau.
NEC	National Electrical Code.
NEHRP	National Earthquake Hazards Reduction Program.
NEMA	National Electrical Manufacturers Association.

NES	National Evaluation Service, Inc.
NFPA	National Fire Protection Association.
NFRC	National Fenestration Rating Council.
NIBS	National Institute of Building Sciences.
NIST	National Institute of Science and Technology.
NOFMA	National Oak Flooring Manufacturers Association.
NPDES	National Pollutant Discharge Elimination System.
NRCA	National Roofing Contractors Association.
NRMCA	National Ready Mixed Concrete Association.
NSF	National Sanitation Foundation.
NTMA	National Terrazzo and Mosaic Association.
NWWDA	National Wood Window and Door Association.
OSHA	Occupational Safety and Health Act of 1970.
PCA	Portland Cement Association.
PCI	Precast Prestressed Concrete Institute.
PDI	Plumbing and Drainage Institute.
PEI	Porcelain Enamel Institute.
PS	Voluntary Product Standard (US Department of Commerce / NIST).
RCSC	Research Council on Structural Connections.
RIS	Redwood Inspection Service.
RMA	Rubber Manufacturers Association.
SC	Shading Coefficient.
SCAQMD	South Coast Air Quality Management District
SDI	Steel Deck Institute.
SDI	Steel Door Institute.
SFBC	South Florida Building Code.
SHGC	Solar Heat Gain Coefficient.
SIGMA	Sealed Insulating Glass Manufacturers Association.
SMACNA	Sheet Metal and Air Conditioning Contractors National Association.
SPRI	Single-Ply Roofing Institute.
SSMA	Steel Stud Manufacturers Association.
SSPC	The Society for Protective Coatings.
SWI	Steel Window Institute.
SWPPP	Storm Water Pollution Prevention Plan.
SWRI	Sealant, Waterproofing, and Restoration Institute.
TCA	Tile Council of America.
TEMA	Tubular Exchanger Manufacturers Association, Inc.
TMS	The Masonry Society.
TPI	Truss Plate Institute.
TRI	Tile Roofing Institute.
UL	Underwriters Laboratories, Inc.
ULC	Underwriters Laboratories of Canada.

USGBC	US Green Building Council.
VOC	Volatile Organic Compounds.
WCLIB	West Coast Lumber Inspection Bureau.
WDMA	Window and Door Manufacturers Association (formerly NWWDA - National Wood Window and Door Association).
WDMA	Window and Door Manufacturers Association.
WH	Warnock Hersey.
WI	Woodwork Institute (formerly WIC – Woodwork Institute of California).
WSRCA	Western States Roofing Contractors Association.
WSFI	Wood and Synthetic Flooring Institute.
WWPA	Western Wood Products Association.

**PART 2 – PRODUCTS**

(NOT USED)

**PART 3 – EXECUTION**

(NOT USED)

**END OF SECTION**

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TEMPORARY FACILITIES BARRIERS, CLOSURES AND CONTROLS

SECTION 01 56 00

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**PART 1 – GENERAL**

1.1 SECTION INCLUDES

- A. Temporary Utilities: Electricity, water and sanitary facilities.
- B. Construction Facilities: Vehicular access, parking, progress cleaning, and fire prevention facilities.
- C. Temporary Controls: Barriers, enclosures, security, water control, dust control, erosion control, noise control, and pollution control.
- D. Protection of Work.
- E. Removal of utilities, facilities, and controls

1.2 TEMPORARY ELECTRICITY

- A. 110V electrical service is available in the facility. Contractor shall provide generator power for use in excess of what is available in the Work Site.

1.3 TEMPORARY WATER

- A. Domestic water service is available near the Work Site. Water in excess of that which can be conveniently be supplied by the County shall be supplied by the Contractor.

1.4 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required temporary facilities for use by construction personnel. Maintain daily in sanitary and clean condition. Locate sanitary facilities in parking lot as directed by the County.

1.5 VEHICULAR ACCESS

- A. Limit access of construction equipment to designated areas.
- B. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.
- C. Provide unimpeded access for emergency vehicles.
- D. Provide and maintain access to fire hydrants and control valves free of obstructions.

1.6 PARKING

- A. Coordinate parking areas to accommodate construction personnel with County.

1.7 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain all areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces prior to enclosing the space.
- C. Remove waste materials, debris and rubbish from site daily and dispose off-site.

1.8 BARRIERS AND ENCLOSURES

- A. Contractor shall provide and maintain temporary fencing or other barriers sufficient to prevent hazard to the public and County employees in the vicinity of the Work.
- B. Provide security and facilities to protect Work and County occupied areas affected by the Work from unauthorized entry, vandalism or theft.
- C. Initiate program at mobilization. Maintain program throughout construction period.

1.9 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
- C. Protect all adjacent spaces and systems from dust during construction.
- D. Provide barriers/protection for all existing systems and equipment during construction including, but not limited to: HVAC system, plumbing system, fire alarm system, paging system, body scanner.

1.10 (NOT USED)

1.11 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.12 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.13 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.

- C. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.
- D. Protect finished floors, stairs and other surfaces from traffic, dirt, wear, damage or movement of heavy objects, by protecting with durable sheet materials.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above-grade or buried utilities, equipment, facilities, and materials prior to Completion of the Work.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

**PART 2 – PRODUCTS**

(NOT USED)

**PART 3 – EXECUTION**

(NOT USED)

**END OF SECTION**

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PRODUCT REQUIREMENTS

SECTION 01 60 00

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**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Products.
- B. Product Delivery Requirements.
- C. Product Storage and Handling Requirements.
- D. Product Options.

1.2 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. All products shall be new, of first class quality, and shall be delivered, installed, connected and finished in every detail, and shall be so selected and arranged as to fit correctly into the proper spaces. Where no specific kind or quality of material is given, a first-class standard article as approved by Architect shall be furnished. Contractor shall provide satisfactory evidence as to the kinds and quality of material and workmanship.
- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- D. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Delivery of materials to the Project site shall be coordinated by and received by Contractor or his representative, and stored in secured areas as agreed upon at the job start meeting.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.
- D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.
- E. Contractor shall take into consideration the available space and location of work site when delivery of materials is necessary.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- B. For exterior storage of fabricated products, place on sloped supports above ground.



- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation and degradation of products.
- E. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.
- H. Contractor shall be responsible to provide all new materials in unopened manufacturer's original containers and deliver such items to Project site in good condition for use on this project. Contractor shall be responsible to store all new materials received as per manufacturer recommendations. Any and all materials discovered to be improperly stored and/or damaged will be replaced at the sole expense to Contractor. Any requests for delays or extension of the Contract Time due to the above will not be considered.
- I. Contractor shall use all means necessary to protect all materials before, during and after installation and to protect the installed work and materials of all other trades and of existing structures. In event of damage, Contractor is to immediately make all repairs and replacements necessary using compatible and like materials.

#### 1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One Manufacturer and stating "No Substitutions Allowed, County's Standard": Products of manufacturer named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers without naming a Product, with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
- D. Products specified by Naming One or More Manufacturers and Naming Product(s) by the first listed Manufacturer, with a Provision for Substitutions: Submit a request for substitution for any product, by any manufacturer, listed or not listed, other than the product(s) listed.

## **PART 2 PRODUCTS**

### 2.1 MATERIALS

- A. Materials furnished shall be new and never been used before, unless specified otherwise, and will satisfy the requirements herein and all specifications referenced by provisions within these specifications. Contractor shall furnish, upon request of Project Manager, an affidavit from the manufacturer or supplier to the effect that materials furnished shall conform to the General Conditions, the latest revision of AWWA Specifications, ASTM, and Federal Specifications that pertain. All materials shall be installed in accordance with manufacturer's recommendations and the Standard Drawings and Specifications that pertain. Material for one specific product shall be one manufacturer unless otherwise approved by Architect. All materials shall be subject to inspection after delivery to the site and during installation of the Work. Failure of the Inspector, Project Manager or Architect to note faulty material shall not relieve Contractor of the responsibility for removing or replacing any such material at no additional cost to County.

- B. For the ease of maintenance and parts replacement, to the maximum extent possible use materials of a single manufacturer, delivered in manufacturer's original, unopened containers with labels intact and legible, and in sufficient quantity to allow continuity of work. Deviation from this requirement shall require written approval from County.
- C. County reserves the right to reject any materials list which contains materials from various manufacturers if suitable materials can be secured from fewer manufacturers and to require that source of materials be unified to maximum extent possible.

**PART 3 EXECUTION**

Not Used

**END OF SECTION**

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CUTTING AND PATCHING

SECTION 01 73 29

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**PART 1 – GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for performing cutting and patching; patching includes the insertion or projection of other products in or from a surface.

1.2 QUALITY ASSURANCE

A. Design Criteria:

1. Patching shall achieve security, strength, and weather protection, as applicable, and shall preserve continuity of existing fire ratings.
2. Patching shall successfully duplicate undisturbed adjacent finishes, especially in performance, colors, textures, and profiles. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the County's judgment shall be final.

1.3 COORDINATION AND PROTECTION

- A. Contractor shall protect from damage all portions of the Work or work of the County or separate contractors adjacent to cutting or patching operations, including excavation.
- B. Contractor shall obtain written permission prior to commencing cutting, patching or excavation operations on the work of the County or any separate contractors.
- C. Contractor shall protect adjacent occupied spaces from damage during concrete cutting and coring.
- D. Contractor shall maintain the security and weather protection of facility at all times.
- E. Contractor shall, when requested in writing, allow the County or any separate contractor to perform reasonable cutting, patching or excavation operation on the Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, Contractor shall submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
  2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
  3. List products to be used and firms or entities that will perform the Work.

4. Indicate dates when cutting and patching is to be performed.
5. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
6. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
7. Approval by the County to proceed with cutting and patching does not waive the County's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

## **PART 2 – PRODUCTS**

### **2.1 MATERIALS**

- A. Materials shall be as specified in the applicable, individual Sections of the Specifications and as required to match existing construction. Contractor shall use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect after consulting with the County. Contractor shall use materials whose installed performance will equal or surpass that of existing materials.

## **PART 3 – EXECUTION**

### **3.1 GENERAL**

- A. Contractor shall perform cutting associated with structural reinforcing, and patching in a manner to prevent damage to other Work and to provide proper surfaces for the installation of materials, equipment, and repairs.
- B. Contractor shall not cut or alter structural members without prior consultation with the County.
- C. Wherever practicable, Contractor shall employ original installer or fabricator providing Work under this Contract to perform cutting and patching for new:
  1. Weather-exposed and moisture-resistant products.
  2. Finished surfaces exposed to view.
- D. Contractor shall adjust and fit products to provide a neat installation.
- E. Contractor shall finish or refinish, as required, cut and patched surfaces to match adjacent finishes. Paint over complete surface plane, unless otherwise indicated. Over patched wall or ceiling surfaces, paint to nearest cutoff line for entire surface, such as intersection with adjacent wall or ceiling, beam or pilasters or to nearest opening frame, unless otherwise indicated. Painted surfaces shall not present a spotty, touched-up appearance.

### **3.2 INSPECTION**

- A. Before cutting existing surfaces, Contractor shall examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action

before proceeding, if unsafe or unsatisfactory conditions are encountered.

1. Before proceeding, Contractor shall meet at the Work Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

### 3.3 PREPARATION

- A. Temporary Support: Contractor shall provide temporary support of Work to be cut.
- B. Protection: Contractor shall protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Work that might be exposed during cutting and patching operations.
- C. Contractor shall avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Contractor shall take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

### 3.4 PERFORMANCE

- A. General: Contractor shall employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
  1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required restoring surfaces to their original condition.
- B. Cutting: Contractor shall cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.
  1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. To avoid marring existing finished surfaces cut or drill from the exposed or finished side into concealed surfaces.
  3. Cut through concrete and masonry using a cutting machine such as a Carborundum saw or diamond core drill.
  4. (NOT USED)
  5. Contractor shall by-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Contractor shall patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
4. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.
5. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

### 3.5 CLEANING

- A. Contractor shall thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

**END OF SECTION**

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CONTRACT CLOSEOUT

SECTION 01 75 00

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**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Project record document submittal.
  - 3. Operation and maintenance manual submittal.
  - 4. Submittal of warranties.
  - 5. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections.

1.2 SUBSTANTIAL COMPLETION

- A. Prior to 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.
    - a. 100 percent completion will bring the Contractor's progress Payment up to (95%) ninety percent of the Contract Price with (5%) percent to remain in retention until after Notice of Completion.
    - b. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
    - c. If 100 percent completion cannot be shown, include a list ("punchlist") of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
  - 2. Advise the Owner of pending insurance changeover 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 surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra stock, and similar items.
  - 7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
  - 8. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
  - 9. Complete final cleanup requirements, including touchup painting.
  - 10. Touch up and otherwise repair and restore marred, exposed finishes.
- B. Substantial Completion will not be issued without the following:
  - 1. Issuance of a Certificate of Occupancy.
  - 2. The electrical system, fire alarm, and sprinkler system 100% complete.
  - 3. Operation manuals, maintenance manuals and warranties submitted and approved.

4. Instruction of staff in the operation and maintenance of equipment and systems.
5. Record drawings submitted and approved.
6. Any extra material required by contract delivered.

C. Inspection Procedures:

1. On receipt of a request for inspection, the Owner's Representative and the Architect will either proceed with inspection or advise the Contractor of unfilled requirements.
2. The Owner's Representative will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
  - a. The Owner's Representative and the Architect will repeat inspection when requested and assured that the Work is substantially complete.
  - b. Results of the completed inspection will form the basis of requirements for final acceptance.
3. Owner will allow the Contractor no longer than 30 calendar days from the Date of Substantial Completion to remedy deficiencies.

1.3 FINAL ACCEPTANCE

A. Prior to requesting final inspection for certification of final acceptance and final payment, complete and submit the following:

1. Final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Certified copy of the Owner's Representative and Architect's final inspection list of items to be completed or corrected endorsed and dated by the Owner's Representative and Architect.
  - a. Certification shall state that each item has been completed or otherwise resolved for acceptance.
4. Submit consent of surety to final payment.
5. Submit all subcontractor final unconditional lien releases.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure:

1. Owner's Representative and /or Architect will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed.
  - a. Indicate items whose completion is delayed under circumstances acceptable to the Owner's Representative.
2. Should the Owner's Representative determine that Work is incomplete or defective:
  - a. Owner's Representative will notify the Contractor, in writing, listing incomplete or defective Work.
  - b. Contractor shall remedy deficiencies promptly and notify Owner's Representative when ready for re-inspection.

C. Final Acceptance Certificate

1. Upon completion of inspection or any re-inspections, the Owner's Representative and /or Owner's Lead Agency will prepare a certificate of final acceptance in accordance with the Project Specification Section 00800, Supplemental General Conditions.
2. Final Acceptance will be presented to the County Board of Supervisors.
  - a. Only the County Board of Supervisors has final authority over Acceptance of Project.



D. Notice of Completion

1. Upon final acceptance by the County Board of Supervisors, the Owner's Lead Agency will prepare and file a Notice of Completion in accordance with the Project Specification Section 00800, Supplemental General Conditions.
  - a. Start of mandatory 35-day lien period.

1.4 RECORD DOCUMENT SUBMITTALS

A. Project Record Drawings:

1. Maintain a clean, undamaged set of Contract Drawings and Shop Drawings and identify as "RECORD DRAWINGS - PROJECT SET".
2. Mark the Drawings to show the actual installation where the installation varies substantially from the Work as originally shown.
  - a. Using an erasable colored pencil (not ink or indelible pencil) clearly describes change by graphic line or note.
  - b. Date all entries, and note related Change Order number where applicable.
  - c. Call attention to all entries by a "cloud" drawn around area affected.
  - d. Where overlapping changes occur, mark with different colors.
3. Conversion of schematic layouts:
  - a. Design of future modifications of facility may require accurate information as to final physical layout of items that are shown schematically on Drawings.
  - b. Show on Project set of Record Drawings, by dimension accurate to within one inch, centerline of each run of items shown schematically on Drawings. Clearly identify item by accurate note such as "cast iron drain", "galv. water", and the like. Show, by symbol or note, vertical location of item ("under slab", "in ceiling plenum", "exposed" and the like).
4. Prior to request for Substantial Completion, secure from the Owner's Representative at no charge to the Contractor, a complete set, full sized drawings and (.DWG) files of all Contract Documents.
  - a. Clearly transfer change data shown on Project set of Record Drawings to corresponding transparencies, coordinating changes as required.
  - b. Clearly indicate at each affected detail and other drawings a full description of changes made during construction, and actual location of items.
  - c. Show final location of electrical junction boxes and outlets, telephone and data outlets, supply and return registers, and like items.
  - d. Call attention to all entries by a "cloud" drawn around area affected.
  - e. Make changes neatly, consistently, and with proper media to assure longevity and clear reproduction.

B. Record Specifications:

1. Maintain one complete copy of the Project Manual, including addenda and other written construction documents, such as Change Orders and modifications issued during construction.
2. Mark Specifications to show substantial variations in actual Work performed in comparison with the text of the Specifications.
3. Note substitutions in reference to items specified.

C. Maintenance Manuals:

1. Contractor to submit a written summary of all maintenance manuals to be transmitted to Owner's Representative.
2. Submit 3 complete copies of all maintenance manuals prior to start-ups and instruction of operation to maintenance personnel.

3. Provide manuals in 8-1/2 x 11 inch format with plastic/fiberboard covers and colored fly-sheets separating sections, to include the following:
  - a. Covered labeled as "Operating and Maintenance Instructions" with name and address of Project, and names of Contractor and Subcontractor.
  - b. Typewritten index near front of manual, providing immediate information as to location within manual of emergency information regarding installation.
  - c. Complete instructions regarding operation and maintenance of all equipment, including lubrication, disassembly, and re-assembly.
  - d. Complete nomenclature of all parts of all equipment.
  - e. Complete nomenclature and part number of all replacement parts, name and address of nearest vendor, and all other data pertinent to procurement and procedures.
  - f. Copy of garnets and warranties issued.
  - g. Manufacturers' bulletins, cuts, and descriptive data, where applicable, clearly indicating precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data which this installation is not concerned.
  - h. Such other data as required in applicable Specification Sections.

D. Guarantees/warranties and Bonds:

1. General:

- a. Manufacturers' warranties notwithstanding, warrant the entire Work against defects in materials and workmanship for twelve (12) months from the date of Substantial Completion in accordance with the GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS.
- b. Guarantee/warrant or bond Work as required in the Specifications.
- c. Warranties between the Contractor and manufacturers, and the Contractor and suppliers, shall not affect guarantees/ warranties between the Contractor and the Owner.
- d. The Contractor will not be held responsible for defects due to misuse, negligence, willful damage, improper maintenance, or accident caused by Others, nor shall he be responsible for defective parts whose replacement is necessitated by failure of the Owner's maintenance forces to properly clean and service them, provided the Contractor has furnished complete maintenance instructions to the Owner.
- e. Compile specified guarantees/warranties and bonds.
- f. Time of Submittal:
  - i. For equipment or component parts of accepted equipment put into service for the Owner's benefit during the progress of the Work, submit guarantees/warranties within ten (10) calendar days after acceptance of the Work.
  - ii. Otherwise, submit guarantees/warranties within ten (10) calendar days after date of Substantial Completion and prior to the Final Application for Payment.
  - iii. For items of Work where acceptance is delayed materially beyond the date of Substantial Completion, furnish updated submittal within ten (10) calendar days after such delayed acceptance, listing the date of delayed acceptance as the start of the guarantee/warranty period.

E. Other Documents:

1. Three sets of warranties, guaranties and bonds.
2. Spare parts and materials extra stock list.
3. One set of evidence of compliance with requirements of governmental agencies having jurisdiction including, but not limited to:
  - a. Certificates of Inspection.
  - b. Certificates of Occupancy.
4. One set of certificates of insurance for products and completed operations.
5. One set of evidence of payment and release of liens.
6. One copy of list of Subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reach for emergency service at all times including nights, weekends, and holidays.

## 1.5 INSTRUCTION

- A. Arrange for each Installer of equipment and systems that requires regular maintenance to meet with the Owner's personnel for instruction in proper operation and maintenance of systems, equipment and similar items, which were provided as part of the Work.
  - 1. Submit to Owner's Representative an instruction schedule listing instruction subjects and proposed dates at least 15 calendar days prior to the first proposed date.

## 1.6 FINAL CLEANING

- A. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
  - 1. Remove labels that are not permanent labels.
  - 2. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
  - 3. 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 condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
  - 4. 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.
  - 5. Clean the site, 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.
- B. Remove temporary protection and facilities installed for protection of the Work during construction.
- C. 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 lawfully.
  - 1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

**END OF SECTION**

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DEMOLITION  
SECTION 02 41 00

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**PART 1 - GENERAL**

- 1.1 SECTION INCLUDES
  - A. Removal of designated construction.
  - B. Identification of utilities.
  - C. Demolition requirements.
- 1.2 PROJECT RECORD DOCUMENTS
  - A. Accurately record actual locations of capped utilities and subsurface obstructions.
- 1.3 REGULATORY REQUIREMENTS
  - A. Conform to applicable local code for demolition work, safety of structure, dust control and safety of occupants.
  - B. Obtain required permits from authorities.
  - C. Do not close or obstruct egress width to exits.
  - D. Do not disable or disrupt building fire or life safety systems without three-day prior written notice to the County.
  - E. Conform to procedures applicable when discovering hazardous or contaminated materials.

**PART 2 - PRODUCTS**

(NOT USED)

**PART 3 - EXECUTION**

- 3.1 PREPARATION
  - A. Provide, erect and maintain temporary barriers as required.
  - B. Erect and maintain temporary partitions to prevent spread of dust, odors and noise to adjoining facilities.
  - C. Protect existing materials and finishes that are not scheduled or otherwise required to be demolished.
  - D. Mark location of utilities.

3.2 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent and occupied buildings.
- B. Maintain protected egress and access to the Work.

3.3 DEMOLITION

- A. Disconnect, remove, cap and identify designated utilities within demolition areas.
- B. Demolish in an orderly and careful manner. Protect existing supporting structural members and materials.
- C. Except where noted otherwise, remove demolished materials from site. Do not bury or burn materials on site.
- D. Remove demolished materials from site as Work progresses. Upon completion of Work, leave areas in clean condition.
- E. Remove temporary Work.

**END OF SECTION**

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SECTION 03 21 00

CONCRETE REINFORCING STEEL

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**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for providing concrete reinforcement for:
  - 1. Reinforcing steel bars, welded steel wire fabric for cast-in-place concrete
  - 2. Support chairs, bolsters, and bar supports for supporting reinforcement
  - 3. Drilled piers: Installation of reinforcement is specified in Division 31 – Earthwork.

1.2 RELATED WORK

- A. Division 1 – General Requirements
- B. Division 3 - Concrete

1.3 REFERENCES

- A. ACI 318 – Specifications for Structural Concrete
- B. ACI 315 – Details and Detailing of Concrete Reinforcement
- C. ASTM A185 – Welded Steel Wire Fabric for Concrete Reinforcement
- D. AWS D1.4 – Structural Welding Code Reinforcing Steel
- E. ASTM A615 – Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- F. CBC, Chapter 19
- G. CRSI Manual of Standard Practice
- H. ASTM A706 – Low Alloy Deformed and Plain Bars for Concrete Reinforcement.

1.4 SUBMITTALS

All submittals shall be submitted under the provisions of Division 1 - General Requirements.

- A. Submittal No. 03 21 00A (#) - Product Data:
  - 1. Manufacturer's product data, specifications, and installation instructions for proprietary materials and accessories
- B. Submittal No. 03 21 00B (#) - Mill Certificates:
  - 1. Steel producer's certificates of mill analysis, tensile and bend tests for reinforcing steel

- C. Submittal No. 03 21 00C (#) – Shop Drawings.
  - 1. Comply with ACI 315
  - 2. Indicate sizes, spacing and locations and quantities of reinforcing steel, bending and cutting schedules, splice locations, stirrup and tie spacing and supporting and spacing devices.

#### 1.5 QUALITY ASSURANCE

- A. Reinforcement work shall comply with ACI 318, ACI 315 and CBC Section 1905
- B. Welding procedures, welding operators and welders shall be qualified in accordance with AWS D1.4. Welders whose work fails to pass inspection shall be re-qualified before proceeding with further welding.
- C. Test of Reinforcing Bars: As outlined in the General Structural Notes of the construction drawing set by the Building Official and the CBC.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver reinforcement to Project site bundled, tagged and marked. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on shop drawings.
- B. Store materials to prevent damage and accumulation of dirt or excessive rust.

### **PART 2 PRODUCTS**

#### 2.1 MATERIALS

- A. Reinforcing Bars: ASTM A615, deformed, Grade 60
- B. Bars for Welded Splices: ASTM A706, low alloy steel
- C. Steel Wire: ASTM A82-02; 16 gauge minimum
- D. Deformed Wire: ASTM A496
- E. Welded Smooth Wire Fabric: ASTM A185
- F. Supports for Reinforcement: Bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place
  - 1. Use wire bar type supports complying with CRSI recommendations, unless otherwise indicated. Do not use wood, brick, and other unacceptable materials.
  - 2. For slabs on grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
  - 3. For exposed to view concrete surfaces, where legs of supports are in contact with forms, provide supports with:
    - a. Plastic protected legs (CRSI, Class 1)
    - b. Stainless steel protected legs (CRSI, Class 2)

- c. Either plastic protected or stainless steel protected legs, at Contractor's option.

## 2.2 FABRICATION

### A. General:

1. Fabricate reinforcing bars to conform to required shapes and dimensions, with fabrication tolerances complying with ACI 315 and CRSI "Manual of Standard Practice".
2. Do not re-bend or straighten reinforcing.
3. Unacceptable Materials: Reinforcement with one of the following defects will not be permitted in the work:
  - a. Bar lengths, depths and bends exceeding CRSI fabrication tolerances
  - b. Bends or kinks not indicated
  - c. Bars with reduced cross section

## 2.3 SOURCE QUALITY CONTROL

- A. The Owner's Testing Laboratory will collect mill test reports for reinforcement.

## **PART 3 EXECUTION**

### 3.1 INSTALLATION

- A. Comply with referenced codes and standards.
- B. Clean reinforcement to remove loose rust and mill scale, earth, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.
- D. Place reinforcement to obtain minimum coverage for concrete protection.
- E. Ensure bar spacing meets requirements of ACI 318.
- F. Arrange, space, and securely tie bars and bar supports together with 16 gauge wire to hold reinforcement in position during concrete placement operations. Set wire ties so twisted ends are directed away from exposed concrete surfaces.
- G. Install welded wire fabric in lengths as long as possible.
  1. Lap adjoining pieces at least one full mesh, 12" minimum, and lace splices with 16 gauge wire.
  2. Do not lap pieces midway between supporting beams, or directly over beams of continuous structures.



3. Offset end laps in adjacent widths.
- H. Provide sufficient numbers of supports of strength to carry reinforcing.
1. Do not place reinforcing bars more than 2-inches beyond the last leg of continuous bar supports.
  2. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.
- I. Splices: Splice bars by lapping ends and tightly wire tying. Comply with requirements of ACI 318 for minimum lap of spliced bars.
- J. Welding:
1. Comply with requirements of AWS D1.4 for field welding.
  2. Prior to field welding, determine weldability of reinforcing bars by laboratory chemical analysis of steel.
  3. Only steel conforming to chemical requirements specified in AWS D12.1 may be welded.
  4. Inspection and Test of Welds: All inspections and testing of welds shall be conducted per the General Structural Notes by the Building Official and the CBC.
- K. The Architect shall be notified 48 hours before pouring concrete for form and steel placement inspection.

END OF SECTION

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SECTION 03 30 00  
CAST IN PLACE CONCRETE

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**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for providing cast in place concrete.

1.2 RELATED WORK

- A. Division 1 – General Requirements  
B. Division 3 - Concrete

1.3 REFERENCES

- A. ACI 301 – Specifications for Structural Concrete Buildings  
B. ASTM C33 – Concrete Aggregates  
C. ASTM C94 – Specifications for Ready-Mixed Concrete  
D. ASTM C150 – Portland Cement  
E. CBC Chapter 19  
F. ASTM C309 – Liquid Membrane – forming compounds for curing concrete  
G. ACI 614 – Recommended Practice for Measuring, Mixing and Placing Concrete  
H. ASTM C31 – Making and Curing Concrete Test Specimens in the Field  
I. ASTM C39 – Test Method for Compressive Strength of Cylindrical Concrete Specimens  
J. ACI 318 – Building Code Requirements for Structural Concrete  
K. ACI 305 – Hot Weather Concreting  
L. ACI 306 – Cold Weather Concreting

1.4 SUBMITTALS

All submittals shall be submitted under the provisions of Division 1 – General Requirements.

- A. Submittal No. 03 30 00A (#) – Mix Designs:  
1. Provide mix design for each class of concrete specified.
- B. Submittal No. 03 30 00B (#) – Laboratory Test Reports:  
1. Laboratory test reports for concrete.

- C. Submittal No. 03 30 00C (#) – Material Certificates:
  - 1. Furnish materials certificates in lieu of laboratory test reports when permitted by Architect. Material producer and Contractor certifying that each material item complies with, or exceeds specified requirements should sign material certificates.
- D. Submittal No. 03 30 00D (#) – Placement Schedule:
  - 1. Prepare placement schedule and submit to Architect for review prior to start of work.
- E. Submittal No. 03 30 00E (#) – Delivery Tickets:
  - 1. Furnish copies of delivery tickets for each load of concrete delivered to site to Project Inspector. Provide information specified.

## 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and the California Building Code.
- B. Obtain materials from the same source throughout the Work.
- C. Concrete Testing:
  - 1. Owner shall employ a testing laboratory experienced in design and testing concrete materials and mixes to perform material evaluation tests.
  - 2. Materials and installed work may require testing and retesting, as directed by Architect, during progress of work.
    - a. Allow access to material stockpiles and facilities.
    - b. Testing shall be paid for by Owner. Retesting of concrete that replaces previously rejected concrete, and core testing required to establish the adequacy of in-place concrete, shall be done at Contractor's expense.
    - c. All tests as required by ACI 318-11 Section 5.6 and as outlined in the General Structural Notes of the construction drawing set by the Building Official and the CBC.

## PART 2 PRODUCTS

### 2.1 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type II gray color unless otherwise approved. Use only one brand of cement for each required type throughout Project, unless otherwise approved by Architect.
- B. Normal Weight Aggregates: ASTM C33.
- C. Water: Clean, fresh and not detrimental to concrete.

- D. Admixtures: Use in compliance with manufacturer's printed instructions. Do not use admixtures which have not been incorporated and tested in accepted mixes, unless otherwise approved by Architect.
1. Water Reducing Admixture: Polymer based conforming with ASTM C494.
  2. Water Reducing, Retarding Admixture: ASTM C494.
  3. High Range Water Reducing Admixture: ASTM C494, Type F or G.
  4. Air Entraining Admixture: ASTM C260.
  5. Non-Corrosive, Non-Chloride Accelerator: ASTM C494, Type C or E.
  6. Prohibited Admixtures: Calcium chloride, thiocyanates or admixtures containing more than 0.05-percent chloride ions are not permitted.

## 2.2 PROPORTIONING AND DESIGN OF MIXES

- A. Where the concrete production facility can establish the uniformity of its production for concrete of similar strength and materials based on recent test data, the average strength used as a basis for determining mix design proportions shall exceed the specified design strength by the requirements of ACI 318, Section 5.3 or ACI 301, Section 3.9.
- B. When a concrete production facility does not have field test records for calculation of standard deviation, the required average strength used as the basis for determining mix design proportions shall be at least 1000 psi greater than the specified concrete strength of less than 3000 psi concrete and 1200 psi greater than the specified compressive strength of 3000 psi or greater concrete.
- C. Mix design submission shall be accompanied by complete standard deviation analysis or trial mixture test data.
- D. Submit written reports to Architect of each proposed mix for each type of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and accepted.
- E. Admixtures:
1. Concrete shall contain the specified water-reducing or water-reducing retarding admixture and/or high-range water-reducing admixture. Concrete required to be air-entrained shall contain and approved air-retraining admixture. Pumped concrete, concrete for industrial slabs, fiber concrete, architectural concrete, concrete required to be watertight, and concrete with a water-cement ratio below 0.50 shall contain the specified high-range water-reducing admixture.
  2. Use air entraining admixture in exterior concrete, unless otherwise indicated. Add at manufacturer's prescribed rate to result in concrete at the point of placement having air content as specified.
- F. Concrete Types: Concrete Strengths (all normal weight)

Location	28-day Compressive Strength (f'c)	Max.Water Cement Ratio	Air Content
Interior slabs on grade	5000 psi	0.45	0-2%

- G. Slump Limits: Concrete containing the high-range water-reducing admixture shall have a maximum slump of 9-inches unless otherwise approved by the Architect. The concrete shall arrive at the Project site at a slump of 2- to 3-inches, be verified, then the high-range water-reducing admixture added to increase the slump to the approved level. All other concrete shall have a maximum slump of 4 inches for slabs and 5 inches for other members.
- H. Chloride ion content of aggregates of constituents shall be tested by the laboratory when directed by the Architect. The total chloride ion content of the mix including all constituents shall not exceed 0.06-percent or 0.10-percent or 0.15-percent chloride ions by weight of cement.

2.3 SOURCE QUALITY CONTROL

- A. The Owner's Testing Laboratory will provide source quality control as outlined in the General Structural Notes of the construction drawing set.

**PART 3 EXECUTION**

3.1 PREPARATION

- A. Pre-placement Inspection:
  1. Before placing concrete, inspect formwork, reinforcing steel, and items to be embedded or cast in as outlined in the General Structural Notes of the construction drawing set.
  2. Moisten wood forms immediately before placing concrete where form coatings are not used.
  3. Soil at bottom of foundation systems is subject to testing for soil bearing value by the testing laboratory as specified in Section 31 00 00, "Earthwork." Place concrete immediately after approval of excavations.
  4. Coordinate installation of joint materials and moisture barriers with placement of forms and reinforcing steel.
- B. Moisture Barrier Material: Where concrete slabs are indicated to be placed over moisture barrier; spread moisture barrier over subbase with edges and ends lapped 6 inches and sealed.

### 3.2 CONCRETE MIXING

- A. Measurement: Materials for concrete shall be measured by weighing the aggregates and cement using equipment that is suitable, designed and constructed for this purpose. Each size of aggregate and the cement shall be weighed separately. The accuracy of measuring devices shall be such that quantities are measured to within the following percentages of the desired amount: 1-percent for cement and water, 2-percent for aggregates, 3-percent for admixtures. Mixing water and admixtures shall be measured by volume.
- B. Mixing: All concrete shall be transit mixed. Deposit concrete into final position within one-hour of introduction of mixing water.

### 3.3 CONCRETE PLACEMENT

- A. Notify the Architect a minimum of 48 hours prior to commencement of concreting procedures.
- B. Placing Record: Record time and date of casting concrete in units of building; maintain record open to inspection by the Architect.
- C. General: Place concrete in compliance with ACI 301, ACI 614, and as specified.
  - 1. Deposit concrete continuously or in layers so that concrete will not be placed on concrete which has hardened sufficiently to cause formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete as nearly as possible to its final location to avoid segregation.
  - 2. Concrete shall not be placed until reinforcement, pipes, conduits, or other set in items have been inspected and approved by the Architect. Concrete shall not be placed on soft or water soaked ground, in water, on frozen ground or surfaces, which are covered by frost. Wood forms shall be thoroughly wetted before concrete is placed.
  - 3. Screed concrete to receive other construction to proper level to avoid excessive skimming or grouting.
  - 4. Do not use concrete which becomes non plastic and unworkable, does not meet required quality control limits, or which has been contaminated by foreign materials.
  - 5. Do not retemper concrete.
  - 6. Remove rejected concrete from Project site.
- D. Concrete Conveying: Handle concrete from point of delivery and transfer to concrete conveying equipment and to locations of final deposit as rapidly as possible by methods to prevent segregation and loss of mix materials.
  - 1. Provide mechanical equipment for conveying concrete to ensure continuous flow at delivery end.
  - 2. Provide runways for wheeled concrete conveying equipment from delivery point to locations of final deposit.

3. Keep interior surfaces of conveying equipment, including chutes, free of hardened concrete, debris, water, snow, ice and other deleterious materials.
  4. Maximum height of fall of concrete shall be 4' 0", except when tremies, tubes or elephant trunks are used. Concrete mix with a temperature above 80 degrees F will not be accepted.
- E. Placing Concrete into Forms:
1. Deposit in forms in horizontal layers not deeper than 24 inches, in a manner to avoid inclined construction joints.
  2. Where placement consists of several layers, place each while preceding layer is still plastic to avoid cold joints.
  3. Remove temporary spreaders in forms when concrete placing has reached elevations of spreaders.
  4. Consolidate concrete by mechanical vibrating equipment supplemented by hand spading, rodding or tamping. Do not vibrate forms and reinforcing.
  5. Do not use vibrators to transport concrete inside forms.
    - a. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of machine.
    - b. Place vibrators to rapidly penetrate at least 6 inches into preceding layer.
    - c. Do not insert vibrators into lower layers of concrete that have begun to set.
    - d. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other items without causing segregation of mix.
- F. Placing Concrete Slabs:
1. Deposit and consolidate concrete slabs in continuous operation, within limits of construction joints, until the panel or section is completed.
  2. Separate exterior slabs on fill from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface.
- G. Consolidate concrete during placing operations using mechanical vibrating equipment, so that concrete is thoroughly worked around reinforcement, other embedded items, and into corners.
- H. Bring slab surfaces to correct level with a straightedge and strike off.
1. Use bull floats or darbies to smooth surface, leaving it free of humps or hollows.
  2. Do not disturb slab surface prior to beginning finishing operations.
- I. Maintain reinforcing steel in proper position during concrete placement operations.

- J. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer upon discovery.
- K. Use of additional water in mixing the concrete to promote free flow in chutes of low inclination or any other reason will not be allowed.
- L. In case of rain or inclement weather, freshly poured concrete shall be protected against infiltration of external water. Placing shall be terminated against nearest construction joint bulkhead and covered at once with tarpaulins or similar waterproof protection until concrete has set.

### 3.4 FINISH ON FORMED SURFACES

- A. Rough Form Finish: Provide as cast rough form finish to formed concrete surfaces concealed in finish work or by other construction, unless otherwise indicated.
  - 1. Standard rough form finish shall be the texture imparted by the form facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.
- B. Smooth Form Finish: Provide as cast smooth form finish for formed surfaces exposed to view, or that are covered with a coating material applied directly to concrete, or a covering material bonded to concrete such as waterproofing, damp proofing, painting, or similar system.
  - 1. Produce smooth form finish by selecting form material to impart a smooth, hard, uniform texture and arranging them orderly and symmetrically with a minimum of seams.
  - 2. Repair and patch defective areas; remove and smooth fins and other projections.

### 3.5 CONCRETE SURFACE REPAIRS

- A. Patch defective areas with specified proprietary patching mortar or cement mortar immediately after removal of forms, when directed by Architect.
  - 1. Cut out honeycomb, rock pockets, and voids over 1/4 inch and holes left by tie rods and bolts, down to solid concrete.
    - a. Make edges of cuts perpendicular to concrete surface.
    - b. Before placing patching mortar, clean, dampen with water, and brush coat area to be patched with bonding agent.
  - 2. For exposed to view surfaces, blend white portland cement and standard portland cement so that when dry, patching mortar will match color of surrounding concrete.
    - a. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching.
    - b. Compact mortar in place and strike off slightly higher than surrounding surface.
- B. Repair of Formed Surfaces: Repair exposed to view formed concrete surfaces that contain defects impacting finish appearance.



1. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect.
  2. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning.
  3. Flush out form tie holes, fill with dry pack mortar, or precast cement plugs secured in place with bonding agent.
  4. Repair concealed formed concrete surfaces containing defects that adversely affect durability of concrete. If defects cannot be repaired, remove and replace concrete having defective surfaces.
- C. Repair of Unformed Surfaces: Test unformed surfaces, for smoothness and to verify surface plane to specified tolerances. Correct low and high areas as specified.
1. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using template having required slope. Correct high and low areas as specified.
  2. Repair finished unformed surfaces containing defects affecting durability of concrete. Surface defects include cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets, and other conditions.
  3. Correct high areas by grinding, after concrete has cured at least 14 days.
  4. Correct low areas during, or immediately after completion of surface finishing operations by cutting out low area and replacing with fresh concrete.
  5. Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete.
    - a. Remove defective areas to sound concrete with clean, square cuts, and expose reinforcing steel with at least 3/4 inch clearance around.
    - b. Dampen concrete surfaces in contact with patching concrete and apply bonding compound.
    - c. Mix patching concrete to produce concrete of same type or class as original adjacent concrete.
    - d. Place, compact and finish as required to blend with adjacent finished concrete.
    - e. Cure in same manner as adjacent concrete.
  6. Repair isolated random cracks and single holes not over 1 inch in diameter by dry pack method.
    - a. Groove top of cracks, and cut out holes to sound concrete and remove dust, dirt and loose particles.

- b. Dampen cleaned concrete surfaces and brush with a neat cement grout coating.
- c. Mix dry pack, consisting of 1 part portland cement to 2 1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water required for handling and placing.
- d. Place dry pack after bonding compound has dried.
- e. Compact dry pack mixture in place and finish to match adjacent concrete.
- f. Keep patched areas moist for not less than 72 hours.

END OF SECTION

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SECTION 04 05 13  
MASONRY MORTAR

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**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for mortar materials and mixing.

1.2 RELATED WORK

- A. Division 1 – General Requirements  
B. Division 4 - Masonry

1.3 REFERENCES

- A. CBC Chapter 21  
B. ACI 530 – Building Code Requirements and Specification for Masonry Structures.  
C. ASTM C144 – Aggregate for Masonry Mortar.  
D. ASTM C150 – Portland Cement.  
E. ASTM C207 – Hydrated Lime for Masonry Purposes.  
F. ASTM C270 – Mortar for Unit Masonry.

1.4 SUBMITTALS

All submittals shall be submitted under the provisions of Division 1 – General Requirements.

- A. Submittal 04 05 13A – Samples:
1. For initial selection, submit samples showing full extent of colors available. For verification purposes, colored masonry mortar for each color required, showing the full range of color to be expected in the finished work. Label samples to indicate type and amount of colorant used.

1.5 QUALITY ASSURANCE

- A. Testing and inspections shall be conducted as outlined in the General Structural Notes of the construction drawing set by the Building Official and the CBC.  
B. Cold Weather Construction – See Section 04 22 00 Concrete Unit Masonry.  
C. Hot Weather Construction – See Section 04 22 00 Concrete Unit Masonry.

1.6 PRODUCT STORAGE

- A. Store packaged materials in manufacturer's original packaging off the ground, in a dry, enclosed space until ready for use. Do not use materials that have been exposed to moisture.
- B. Store aggregates separately in a dry covered place, protected from contamination.

**PART 2 PRODUCTS**

2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type II, gray color, selected from manufacturer colors. Single source only. Masonry cement will not be permitted.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Aggregate for Mortar: ASTM C144. For joints less than 1/4 inch, use aggregate graded with 100 percent passing a No. 16 sieve.
- D. Water: Clean and potable.
- E. Admixtures: Use only with Architect's approval; admixtures shall not adversely affect bond or compressive strength.

2.2 MORTAR MIXES

- A. General: Do not add admixtures including air entraining agents, accelerators, retarders, water repellent agents, anti freeze compounds or other admixtures unless otherwise specified. Do not use calcium chloride in mortar.
- B. Mortar:
  - 1. Comply with ACI 530, Type S.
  - 2. Mortar shall be mixed as follows, with a total mixing time not less than 10-minutes.
    - a. Place half of required water and sand into mixer while running.
    - b. Add cement and remainder of sand and water into mixer in that order and mix for a period of at least 2-minutes.
    - c. Add lime and continue mixing as long as needed to secure a uniform mass.
    - d. Colored Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required. Do not exceed pigment to cement ratio of 1 to 10, by weight.
  - 3. Use and place mortar in final position within 2-1/2-hours after mixing. Mortars that have stiffened due to evaporation of water may be re-tempered with water as required to restore required consistency during this period.
- C. Ultimate Compressive Strength at 28 days should be 1900 psi with 4 inch slump.

2.3 SOURCE QUALITY CONTROL

- A. The Owner's Testing Laboratory will review mortar mix designs.

**PART 3 EXECUTION**

3.1 INSTALLATION

- A. Installation of mortar is specified in Section 04 22 00 – Concrete Unit Masonry.

END OF SECTION

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SECTION 04 05 16

MASONRY GROUT

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**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for grout materials and mixing.

1.2 RELATED WORK

- A. Division 1 – General Requirements
- B. Division 4 - Masonry

1.3 REFERENCES

- A. CBC Chapter 21
- B. ACI 530 – Building Code Requirements and Specification for Masonry Structures.
- C. ASTM C94 – Ready Mixed Concrete.
- D. ASTM C150 – Portland Cement.
- E. ASTM C207 – Hydrated Lime for Masonry Purposes.
- F. ASTM C404 – Aggregate for Masonry Grout.
- G. ASTM C476 – Specification for Grout for Masonry.

1.4 QUALITY ASSURANCE

- A. Testing and inspections shall be conducted as outlined in the General Structural Notes of the construction drawing set by the Building Official and the CBC.
- B. Cold Weather Construction – See Section 04 22 00 Concrete Unit Masonry.
- C. Hot Weather Construction – See Section 04 22 00 Concrete Unit Masonry.

1.5 PRODUCT STORAGE

- A. Store packaged materials in manufacturer's original packaging off the ground, in a dry, enclosed space until ready for use. Do not use materials, which have been exposed to moisture.
- B. Store aggregates separately in a dry covered place, protected from contamination.

**PART 2 PRODUCTS**

2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type II, gray color. Single source only. Masonry cement will not be permitted.
- B. Aggregate for Grout: ASTM C404, 3/8 inch maximum.
- C. Water: Clean and potable.
- D. Admixtures: Use only with Architect's approval; admixtures shall not adversely affect bond or compressive strength.

## 2.2 GROUT MIXES

- A. General: Do not add admixtures including air entraining agents, accelerators, retarders, water repellent agents, anti freeze compounds or other admixtures unless otherwise specified. Do not use calcium chloride in mortar or grout.
- B. Grout:
  - 1. Grout shall be coarse grout designed to attain a compressive strength of 2000 psi at 28-days.
  - 2. Grout shall be composed of portland cement, hydrated lime, fine aggregate, pea gravel, and sufficient water to attain a slump between 8 and 10 inches without segregation.
  - 3. Grout shall be furnished by a readymix plant. After the addition of water, all materials shall be mixed for at least 3 minutes.

## 2.3 SOURCE QUALITY CONTROL

- A. The Owner's Testing Laboratory will review grout mix designs.

# **PART 3 EXECUTION**

## 3.1 INSTALLATION

- A. After inspection of concrete grout spaces by Special Inspector, plug cleanout holes with masonry units. Brace against wet grout pressure.
- B. Install grout in accordance with Section 04 22 00 – Concrete Unit Masonry.
- C. Work grout into cores and cavities to eliminate voids.
- D. Do not displace reinforcing steel when placing grout.
- E. Clean concrete grout spaces of excess mortar and debris.

END OF SECTION

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SECTION 04 05 19  
MASONRY REINFORCING

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**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for providing reinforcement for:
  - 1. Reinforcing steel bars for concrete masonry
  - 2. Support chairs, bolsters, and bar supports for supporting reinforcement.
- B. Reinforcement for concrete is specified in Section 03 21 00.

1.2 RELATED WORK

- A. Division 1 – General Requirements
- B. Division 4 - Masonry

1.3 REFERENCES

- A. ACI 315 – Details and Detailing of Concrete Reinforcement
- B. AWS D1.4 – Structural Welding Code Reinforcing Steel
- C. ASTM A615 – Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- D. CBC Chapter 21
- E. ACI 530 – Building Code Requirements and Specification for Masonry Structures.
- F. CRSI Manual of Standard Practice
- G. ASTM A706 – Low Alloy Deformed and Plain Bars for Concrete Reinforcement.

1.4 SUBMITTALS

All submittals shall be submitted under the provisions of Division 1 – General Requirements.

- A. Submittal No. 04 05 19A – Mill Certificates:
  - 1. Steel producer's certificates of mill analysis, tensile and bend tests for reinforcing steel
- B. Submittal No. 04 05 19B – Shop Drawings:
  - 1. Submit shop drawings per Section 01 33 00 for fabrication, bending, and placement of reinforcing
  - 2. Comply with ACI 315



3. Indicate sizes, spacing and locations and quantities of reinforcing steel, bending and cutting schedules, splice locations, stirrup and tie spacing and supporting and spacing devices.

#### 1.5 QUALITY ASSURANCE

- A. Reinforcement work shall comply with ACI 315 and CBC Chapter 21.
- B. Welding procedures, welding operators and welders shall be qualified in accordance with AWS D1.4. Welders whose work fails to pass inspection shall be re-qualified before proceeding with further welding.
- C. Test of Reinforcing Bars: As outlined in the General Structural Notes of the construction drawing set by the Building Official and the CBC.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver reinforcement to Project site bundled, tagged and marked. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on shop drawings.
- B. Store materials to prevent damage and accumulation of dirt or excessive rust.

### **PART 2 PRODUCTS**

#### 2.1 MATERIALS

- A. Reinforcing Bars: ASTM A615, deformed, Grade 60
- B. Bars for Welded Splices: ASTM A706, low alloy steel
- C. Steel Wire: ASTM A82-02; 16 gauge minimum
- D. Deformed Wire: ASTM A496
- E. Supports for Reinforcement: Bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place
  1. Use wire bar type supports complying with CRSI recommendations, unless otherwise indicated. Do not use wood, brick, and other unacceptable materials.

#### 2.2 FABRICATION

- A. General:
  1. Fabricate reinforcing bars to conform to required shapes and dimensions, with fabrication tolerances complying with ACI 315 and CRSI "Manual of Standard Practice".
  2. Do not re-bend or straighten reinforcing.
  3. Unacceptable Materials: Reinforcement with one of the following defects will not be permitted in the work:
    - a. Bar lengths, depths and bends exceeding CRSI fabrication tolerances

- b. Bends or kinks not indicated
- c. Bars with reduced cross section

### 2.3 SOURCE QUALITY CONTROL

- A. The Owner's Testing Laboratory will collect mill test reports for reinforcement.

## **PART 3 EXECUTION**

### 3.1 INSTALLATION

- A. Comply with referenced codes and standards.
- B. Clean reinforcement to remove loose rust and mill scale, earth, and other materials that reduce or destroy bond with grout.
- C. Accurately position, support and secure reinforcement against displacement by block placement, construction, or grout placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.
- D. Placing Reinforcement:
  - 1. Clean reinforcing of loose rust, mill scale, earth, and other materials which will reduce bond to mortar or grout.
  - 2. Do not use reinforcement with kinks or bends not indicated, or bars with reduced cross section.
  - 3. Position reinforcing accurately as indicated.
    - a. Support and secure vertical bars against displacement.
    - b. Support bars at top and bottom courses and at intervals not to exceed 200 bar diameters.
    - c. Horizontal reinforcing may be placed as the masonry work progresses.
    - d. Where vertical bars are in close proximity, provide a clear distance between bars of not less than the greater of the nominal bar diameter or 1 inch.
    - e. For columns, piers and pilasters, provide a clear distance between vertical bars of not less than 1 1/2 times the nominal bar diameter or 1 1/2 inches, whichever is greater. Provide lateral ties as indicated.
  - 4. Splice reinforcing only where indicated.
    - a. Provide lapped splices, unless otherwise indicated.
    - b. In splicing vertical bars or attaching to dowels, lap ends and wire tie.
  - 5. Weld splices where indicated. Comply with the requirements of AWS D1.4 for welding materials and procedures

- E. Place reinforcement to obtain minimum coverage per structural drawings.
- F. Ensure bar spacing meets requirements of ACI 350.
- G. Arrange, space, and securely tie bars and bar supports together with 16 gauge wire to hold reinforcement in position during concrete placement operations. Set wire ties so twisted ends are directed away from exposed concrete surfaces.
- H. Provide sufficient numbers of supports of strength to carry reinforcing.
- I. Welding:
  - 1. Comply with requirements of AWS D1.4 for field welding.
  - 2. Prior to field welding, determine weldability of reinforcing bars by laboratory chemical analysis of steel.
  - 3. Only steel conforming to chemical requirements specified in AWS D12.1 may be welded.
- J. Inspection and Test of Welds: The following tests may be made by Owner's testing laboratory for reinforcing bar welds:
  - 1. Certification of welders performing electric arc welding of reinforcing
  - 2. Verification of accurate location of reinforcing
  - 3. Inspection of reinforcing bar welds
  - 4. X-ray test of one of first 3 arc welds made by each welder
  - 5. Tensile tests of sample welds of largest size bar for each type of welding
  - 6. Deficient welds shall require Contractor to provide and pay for additional X-rays and tests as directed by Architect. Repair or replace defective welds.
- K. The Architect shall be notified 48 hours before a grout pour for block and steel placement inspection.

END OF SECTION

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CONCRETE UNIT MASONRY

SECTION 04 22 00

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**PART 1 - GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing reinforced and grouted concrete masonry units.

1.2 REFERENCES

- A. CBC Chapter 21
- B. ACI 530 – Building Code Requirements and Specification for Masonry Structures.
- C. ASTM C90 – Standard Specification for Load Bearing Concrete Masonry Units.
- D. ASTM C140 – Standard Test Methods for Sampling and Testing Concrete Masonry Units.

1.3 QUALITY ASSURANCE

- A. Masonry work shall conform to CBC Chapter 21
- B. Tolerances:
  - 1. Variation from Plumb: For vertical lines and surfaces of columns, walls and arises, do not exceed 1/4 inch in 10 feet.
  - 2. Variation from Level: For bed joints, do not exceed 1/4 inch in 10 feet maximum.
  - 3. Variation in Mortar Joint Thickness: Do not exceed bed joint thickness indicated or specified by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not exceed head joint thickness indicated or specified by more than plus or minus 1/8 inch.
  - 4. Maximum variation from unit to adjacent unit: 1/16 inch.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Store and handle masonry units to prevent damage or deterioration from moisture, temperature changes, contaminants, corrosion, or other causes. Cover all block when there is a chance of any form of precipitation.

**PART 2 - PRODUCTS**

2.1 MASONRY UNITS

- A. General: Comply with referenced standards and other requirements specified for each form of concrete masonry unit required.

B. Hollow Block: ASTM C90.

1. Weight Classification: Lightweight or Normal weight.
2. Ultimate Compressive Strength of 1900 psi on net area at 28 days.
3. Grade N, single and double open-end bond beam units.
4. Size: Nominal face dimensions of 16 inches long x 8 inches high x thickness indicated.
5. Manufactured by Basalite, Graystone or other as approved by the Architect.
6. Exposed Faces: Manufacturer's standard, smooth face.
7. Color: Grey

2.2 MORTAR

A. MATERIALS

1. Portland Cement: ASTM C150, Type II, gray color. Single source only Masonry cement will not be permitted
2. Hydrated Lime: ASTM C207, Type S.
3. Aggregate for Mortar: ASTM C144. For joints less than ¼ inch, use aggregate graded with 100 percent passing a No. 16 sieve.
4. Water: Clean and potable.
5. Admixtures: Use only with Architect's approval; admixtures shall not adversely affect bond or compressive strength.

B. MORTAR MIXES

1. General: Do not add admixtures including air entraining agents, accelerators, retarders, water repellent agents, anti-freeze compounds or other admixtures unless otherwise specified. Do not use calcium chloride in mortar.
2. Mortar:
  - a. Comply with ACI 530, Type S.
  - b. Mortar shall be mixed as follows, with a total mixing time not less than 10-minutes.
    1. Place half of required water and sand into mixer while running.
    2. Add cement and remainder of sand and water into mixer in that order and mix for a period of at least 2-minutes.
    3. Add lime and continue mixing as long as needed to secure a uniform mass.

- c. Use and place mortar in final position within 2-1/2-hours after mixing. Mortars that have stiffened due to evaporation of water may be retempered with water as required to restore required consistency during this period.
3. Ultimate Compressive Strength at 28 days should be 1900 psi with 4 inch slump.

## 2.3 GROUT

### A. PRODUCTS:

1. General: Do not add admixtures including air entraining agents, accelerators, retarders, water repellent agents, anti freeze compounds or other admixtures unless otherwise specified. Do not use calcium chloride in mortar or grout.
2. Grout:
  - a. Grout shall be coarse grout designed to attain a compressive strength of 2000 psi at 28-days.
  - b. Grout shall be composed of portland cement, hydrated lime, fine aggregate, pea gravel, and sufficient water to attain a slump between 8 and 10 inches without segregation.
  - c. Grout shall be furnished by a readymix plant. After the addition of water, all materials shall be mixed for at least 3 minutes.

## 2.4 REINFORCEMENT

### A. MATERIALS

1. Reinforcing Bars: ASTM A615, deformed, Grade 60

### B. FABRICATION

1. General:
  - a. Fabricate reinforcing bars to conform to required shapes and dimensions, with fabrication tolerances complying with ACI 315 and CRSI "Manual of Standard Practice".
  - b. Do not re-bend or straighten reinforcing.
  - c. Unacceptable Materials: Reinforcement with one of the following defects will not be permitted in the work:
    1. Bar lengths, depths and bends exceeding CRSI fabrication tolerances
    2. Bends or kinks not indicated
    3. Bars with reduced cross section

## 2.5 MASONRY CLEANERS

- A. Job Mixed Detergent Solution: Solution of trisodium phosphate (1/2 cup dry measure) and laundry detergent (1/2 cup dry measure) dissolved in one gallon of water.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Thickness: Build masonry construction to the full thickness indicated. Build single width walls to the thickness of the masonry units, using units of nominal thickness specified.
- B. Cut masonry units with motor driven saw producing clean sharp, unchipped edges.
  - 1. Cut units as required to provide pattern indicated and to fit adjoining work neatly.
  - 2. Use full units without cutting wherever possible.
  - 3. Use dry cutting saws to cut concrete masonry units.
- C. Do not wet concrete masonry units.
- D. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths. Locate openings, movement type joints, returns and offsets. Avoid use of less than half size units at corners, jambs and other locations.
- E. Lay walls plumb, with courses level, accurately spaced and coordinated with other work.
- F. Pattern Bond: Lay exposed masonry in running bond unless otherwise indicated.
- G. Stopping and Resuming Work: Rake back 1/2 masonry unit length in each course; do not tooth. Clean exposed surfaces of set masonry, and remove loose masonry units and mortar prior to laying fresh masonry.
- H. Built In Work: Build in items specified under this and other Sections as the work progresses.
  - 1. Fill space between structural steel frames and masonry with silicone joint filler. Use mortar for other frames.

### 3.2 MORTAR BEDDING AND JOINTING

- A. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells and webs.
- B. Joints: Lay walls with 3/8 inch joints, except for minor variations required to maintain bond alignment.
  - 1. Cut joints flush for masonry walls concealed or to be covered by other materials.
  - 2. Tool exposed joints slightly concave using a jointer larger than joint thickness.
  - 3. Rake out mortar in joints to receive caulking or sealants.
- C. Remove masonry units disturbed after laying; clean and relay in fresh mortar.

1. Do not pound corners at jambs to fit stretcher units which have been set in position.
2. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.

### 3.3 INSTALLATION OF REINFORCED CONCRETE UNIT MASONRY

#### A. Walls:

1. Lay concrete masonry units with full face shell mortar beds.
2. Maintain vertical continuity of core or cell cavities, which are to be reinforced and grouted.
  - a. Keep cavities free of mortar.
  - b. Solidly bed webs in mortar where adjacent to reinforced cores or cells.

### 3.4 REINFORCING INSTALLATION

- A. Comply with referenced codes and standards.
- B. Clean reinforcement to remove loose rust and mill scale, earth, and other materials that reduce or destroy bond with grout.
- C. Position reinforcing accurately as indicated.
  1. Support and secure vertical bars against displacement.
  2. Support bars at top and bottom courses and at intervals not to exceed 200 bar diameters.
  3. Horizontal reinforcing may be placed as the masonry work progresses.
  4. Where vertical bars are in close proximity, provide a clear distance between bars of not less than the greater of the nominal bar diameter or 1 inch.
- D. Splice reinforcing only where indicated.
  1. Provide lapped splices, unless otherwise indicated.
  2. In splicing vertical bars or attaching to dowels, lap ends and wire tie.
- E. Ensure bar spacing meets requirements of ACI 350.
- F. Arrange, space, and securely tie bars and bar supports together with 16 gauge wire to hold reinforcement in position during concrete placement operations. Set wire ties so twisted ends are directed away from exposed concrete surfaces.
- G. Provide sufficient numbers of supports of strength to carry reinforcing.
- H. The County shall be notified 48 hours before a grout pour for block and steel placement inspection.



### 3.5 GROUTING

#### A. General Requirements:

1. Use grout pump, hopper or bucket to place grout.
2. Place grout in final position within 1-1/2-hours after introduction of mixing water.
3. Do not insert vibrators into lower pours after initial set.
4. Stop grout approximately 1-inch below top of last course; except at top course bring grout to top of wall.

#### B. Grouting:

1. Conform to requirements of CBC Chapter 21 and ACI 530.
2. Layup walls, subject to maximum height limitations of CBC Chapter 21 and ACI 530.
3. Clean mortar droppings from the bottom of the grout space and from reinforcing steel. Remove mortar fins protruding more than 1/2-inch into the grout space by dislodging the projections with a rod or stick as the work progresses.
4. Do not place grout in hollow unit masonry until mortar joints have set for at least 24 hours.

### 3.6 REPAIR, POINTING AND CLEANING, AND PROTECTION

A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

#### B. Pointing:

1. During tooling of joints, enlarge voids or holes, except weep holes, and fill with mortar.
2. Point up joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.

C. Final Cleaning: After mortar is thoroughly set and cured, clean masonry as follows:

- .1 Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes or chisels.
- .2 Saturate wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing with clear water.
- .3 Clean concrete unit masonry to comply with masonry manufacturer's directions and applicable NCMA "Tek" bulletins.

- D. Protection: Provide and maintain protection to ensure unit masonry is without damage and deterioration at time of Substantial Completion.

**END OF SECTION**

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SECTION 05 50 00

METAL FABRICATIONS

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**PART 1 GENERAL**

1.1 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing metal fabrications made from steel shapes, plates, bars, strips, tubes, pipes and castings not a part of structural steel or specified in other Sections.

1.2 SYSTEM PERFORMANCE REQUIREMENTS

- A. Railings: Design, engineer, fabricate and install railings to withstand the following structural loads:
1. Top Rail of Railing System: Capable of withstanding a concentrated load of 300-pounds applied at any point and a uniform load of 50-pounds per linear foot applied at any direction.
  2. Railings shall comply with Uniform Building Code requirements.

1.3 RELATED WORK

- A. Division 1 – General Requirements
- B. Division 5 - Steel

1.4 SUBMITTALS

All submittal shall be submitted under the provisions of Division 1 – General Requirements.

- A. Submittal No. 05 50 00A – Product Data:
1. Manufacturer's specifications, anchor details and installation instructions, including paint products and grout.
- B. Submittal No. 05 50 00B - Shop Drawings:
1. Include plans, elevations and details of metal fabrications and their connections. Show anchorage and accessory items.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the work.
- B. Welding Qualifications: Qualify welding processes and welding operators in accordance with AWS D1.1, D1.2, D1.3, and D1.8 as applicable. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved.

## 1.6 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule to avoid delay of work.

## 1.7 SEQUENCING AND SCHEDULING

- A. Painting: Items specified in this Section as having a shop applied prime coat will be job painted as specified in Section 09 91 00, unless otherwise noted.
- B. Furnish templates for anchors and bolt installation by other Sections.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. General: For fabrication of metal work, which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
- B. Wide Flange Steel Shapes: ASTM A992
- C. Steel Plates, Shapes and Bars: ASTM A36
- D. Steel Tubing: Cold formed, ASTM A500; or hot rolled, ASTM A501
- E. Structural Steel Sheet: Hot rolled, ASTM A1011; or cold rolled ASTM A1008
- F. Galvanized Structural Steel Sheet: ASTM A653
- G. Steel Pipe: ASTM A53; type and grade selected by fabricator; black finish unless galvanizing is indicated or specified; standard weight, schedule 40, unless otherwise indicated
- H. Gray Iron Castings: ASTM A48, Class 30
- I. Malleable Iron Castings: ASTM A47, grade selected by fabricator
- J. Brackets, Flanges and Anchors: Cast or formed metal of same type material and finish as supported rails, unless otherwise indicated
- K. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A47, or cast steel, ASTM A27. Provide bolts, washers and shims as required, hot dip galvanized, ASTM A153.
- L. Fasteners: Steel fasteners, galvanized in accordance with ASTM A153, selected by fabricator
- M. Paint:
  - 1. Metal Primer: SSPC 20, Type 2

- a. Exterior Exposure: Tnemec 90-97 Tnemec Zinc or approved equal
  - b. Interior Exposure: Tnemec 18 Enviro-Prime acrylic emulsion rust-inhibitive primer or approved equal
  - c. Exposed to view items to be field painted shall be primed with a primer compatible with final finish coats specified in Section 09 91 00.
2. Galvanizing Repair Paint: High zinc dust content paint for re-galvanizing welds in galvanized steel; Rust Oleum Corp. "Zinc Rich Cold Galvanizing Compound", Tnemec 90 93, ZRC Chemical Products Div. of Norfolk Corp. "ZRC Cold Galvanizing Compound" or approved equal.

## 2.2 FABRICATION, GENERAL

### A. Workmanship:

1. Use materials of size and thickness indicated or required to produce strength and durability in finished product for use intended.
2. Work to dimensions indicated,
3. Form exposed work true to line and level with accurate angles and surfaces and straight, sharp edges.
4. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated.
5. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
6. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces. Welds shall be imperceptible in the finished work.
7. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use Phillips flat head countersunk screws or bolts for exposed fasteners, unless tamperproof security screws are indicated.
8. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

### B. Galvanizing: Provide zinc coating for items indicated or specified to be galvanized, as follows:

1. ASTM A153 for galvanizing iron and steel hardware.
2. ASTM A123 for galvanizing both fabricated and un-fabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299-inch thick and heavier.

### C. Fabricate joints exposed to the weather to exclude water or provide weep holes.

### D. Shop Painting:

1. Shop paint miscellaneous metal work, except members or portions of members to be embedded in concrete or masonry, surfaces and edges to be field welded, and galvanized surfaces.
2. Remove scale, rust and other deleterious materials before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP 2, SP 3, or SP 7.
3. Remove oil, grease and similar contaminants in accordance with SP 1.
4. Brush or spray on primer in accordance with manufacturer's instructions, at a rate of 2.0 mils thickness for each coat.
5. Apply one shop coat to fabricated metal items, except apply 2 coats to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish from the first.
6. Primer on exposed to view items to be field painted shall be smooth and suitable for application of final finish coats specified in Section 09 91 00.
7. Apply a heavy coat of bituminous paint, compounded for application in 30 mil coat, to metal surfaces in contact with concrete, masonry and dissimilar metals. Do not apply on exposed surfaces.

## 2.3 MISCELLANEOUS METAL FABRICATIONS

### A. Miscellaneous Framing and Supports:

1. Provide miscellaneous framing and supports not a part of structural steel framework, as required to complete work.
2. Fabricate to sizes, shapes and profiles shown or required.
3. Fabricate from structural steel shapes and plates and steel bars of welded construction using mitered joints for field connection.
4. Cut, drill and tap units to receive hardware and similar items.
5. Furnish integrally welded anchors for casting into concrete or building into masonry.
6. Finish: Galvanize exterior frames and supports, shop prime interior frames and supports.

### B. Steel Pipe or Tube Railings: Fabricate to design, dimensions and details indicated.

1. Interconnect railing members by butt welding or welding with internal connectors.
2. Provide coped joints at tee and cross sections.
3. Form simple and compound curves by bending pipe or tubing in jigs to produce uniform curvature for each repetitive configuration. Maintain cylindrical cross section of pipe or tube throughout entire bend without buckling, twisting or deforming exposed surfaces.

4. Close exposed ends of pipe by welding 3/16 inch steel plate in place or by using prefabricated fittings.
5. Flanges, Fittings and Anchors: Provide end closures, flanges, miscellaneous fittings and anchors for interconnections of pipe or tubing and attachment of railings to other work. Furnish inserts and other anchorage devices for connecting to concrete or masonry.
6. Finish: Galvanize steel railings, including pipe or tubing, fittings, brackets, fasteners, and other ferrous components.

### **PART 3 EXECUTION**

#### **3.1 PREPARATION**

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors.

#### **3.2 INSTALLATION**

##### **A. General:**

1. Fastening to In Place Construction: Provide threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws and other connectors as required
2. Cutting, Fitting and Placement:
  - a. Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications.
  - b. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.
  - c. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry or similar construction.
3. Fit exposed connections together forming tight hairline joints.
  - a. Weld connections not shop welded.
  - b. Grind exposed joints smooth and imperceptible, and touch up shop paint coat.
  - c. Do not weld, cut or abrade the surfaces of exterior units which have been hot dip galvanized after fabrication, and intended for bolted or screwed field connections.
4. Field Welding: Comply with AWS for procedures of manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.
5. Install prefabricated items in accordance with manufacturer's instructions.

- B. Setting Loose Plates:
1. Clean concrete and masonry bearing surfaces of bond reducing materials, and roughen to improve surface bond. Clean bottom surface of bearing plates.
  2. Set loose leveling and bearing plates on wedges, or other adjustable devices.
  3. Tighten anchor bolts after the bearing members have been positioned and plumbed.
  4. Cut off protruding ends of wedges flush with the edge of the bearing plate before packing with grout.
  5. Use metallic non shrink grout in concealed locations where not exposed to moisture; use non metallic non shrink grout in exposed locations.
  6. Pack grout solidly between bearing surfaces and plates to ensure no voids remain.
- C. Steel Pipe or Tube Railings:
1. Adjust railings prior to anchoring to ensure matching alignment at abutting joints.
  2. Space posts as indicated.
  3. Plumb posts in each direction.
  4. Anchor posts in concrete by core-drilling concrete curbs to accommodate the posts. Fill annular space between post and curb solid with non-shrink, non-metallic grout mixed and placed to comply with grout manufacturer's directions.
  5. Anchor posts to steel with steel oval flanges, angle type or floor type as required by conditions, welded to posts and bolted to steel supporting members.
  6. Expansion Joints: Provide at intervals not exceeding 40 feet. Provide slip joint with internal sleeve extending 2 inches beyond joint on either side; fasten internal sleeve securely to one side; locate joint within 6 inches of posts.
- D. Bollards: Anchor bollards in concrete with preset pipe sleeves. After bollards have been inserted into sleeves, fill annular space between bollard and sleeve solid with non-shrink, nonmetallic grout.

### 3.3 ADJUST AND CLEAN

- A. Touch-Up Painting: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and spot prime with specified primer applied to a minimum dry film thickness of 2.5 mils.

END OF SECTION



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JOINT SEALANTS

SECTION 07 92 00

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**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Sealants.
- B. Primers.
- C. Bond breakers.
- D. Backstops.
- E. Cleaning Solvents.

1.2 REFERENCES

- A. Unless otherwise noted, standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Project Manual.
- B. Referenced Standards:
  - 1. ASTM C510 – Standard Test Method for Staining and Color Change of Single or Multicomponent Joint Sealants.
  - 2. ASTM C661 – Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.
  - 3. ASTM C719 – Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)
  - 4. ASTM C794 – Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
  - 5. ASTM C834 – Standard Specification for Latex Sealants.
  - 6. ASTM C919 – Standard Practice for Use of Sealants in Acoustical Applications.
  - 7. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
  - 8. ASTM C1184 – Standard Specification for Structural Silicone Sealants.
  - 9. ASTM C1193 – Standard Guide for use of Joint Sealants.
  - 10. ASTM C1311 – Standard Specification for Solvent Release Sealants.
  - 11. ASTM D4586 – Standard Specification for Asphalt Roof Cement, Asbestos-Free.

### 1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's descriptive literature and product specification for each product.
- B. Samples: Submit manufacturer's standard color ranges of exposed sealant materials for Architect's selection.
- C. Quality Assurance/Control Submittals:
  - 1. Product validation/assurance submittals.
  - 2. Manufacturer's laboratory adhesion and stain testing results.
  - 3. Joint sealants field adhesion to joint substrates test results.
- D. Closeout Submittals:
  - 1. Cleaning and maintenance data.

### 1.4 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Manufacturer Qualifications: Firm specializing in manufacturing products specified in this.
- B. Product Validation/Assurance: Provide products with current SWRI Validation or provide independent third-party laboratory test results showing product meets performance requirements in accordance with ASTM C920 and as specified in this Section.
- C. Manufacturer Adhesion and Stain Testing: Provide manufacturer's laboratory adhesion (per ASTM C719 and C794) and stain testing (per ASTM C510) using specimens of actual substrates to ensure sealant compatibility with substrate before product acceptance.
- D. Coordination and Pre-Installation Meetings:
  - 1. Convene pre-installation meeting prior to commencing work of this Section.
  - 2. Coordinate work in this Section with work in related Sections.

### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in the unopened, original containers or unopened packages with manufacturer's name, labels, product identification, color, expiration period, curing time and mixing instructions for multi-component materials.
- B. Storage and Protection: Store materials in a dry secure place at temperatures below 80 degrees F.

1.6 PROJECT/SITE CONDITIONS

- A. Maintain temperature and humidity conditions as recommended by sealant manufacturer. Apply solvent curing sealants in well ventilated spaces.

1.7 SEQUENCING

- A. Apply waterproofing, water repellents, and preservative finishes after sealant installation has fully cured.

1.8 WARRANTY

- A. Provide installer's warranty against workmanship for 2 years.

**PART 2 - PRODUCTS**

2.1 MANUFACTURERS

- A. Dow Corning Corp.
- B. GE Silicones
- C. Pecora Corp.
- D. Sika Corporation
- E. Tremco Inc.
- F. BASF Corporation – Building Systems
- G. Or accepted equal.

2.2 SEALANTS

- A. General:
  - 1. Provide sealants that have been tested and found suitable for the substrates to which it will be applied.
  - 2. Color: As selected by Architect from manufacturer's full range of colors.
- B. Security Sealant: Type II; ASTM C881, Grade NS; two-part, 100% solids, moisture tolerant, low-modulus, non-sag, paste-consistency epoxy resin binder for use in horizontal and vertical joints; "Sikadur 23" Security Sealant as manufactured by Sika or accepted equal.
  - 1. Use at all exposed areas subject to contact by inmates including but not limited to the following:
    - a. Detention doors and frames.
    - b. Detention furnishings and accessories.
    - c. Security plumbing and electrical fixtures.

- d. Detention lighting & HVAC grills.
- e. Seams in cells.
- f. Security electronic devices.

### 2.3 ACCESSORIES

- A. Primers: Nonstaining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.
- B. Bond Breakers: Type and consistency recommended by the sealant manufacturer for the particular application.
- C. Bond Breaker Tape: Self-adhesive, polyethylene tape.
- D. Joint Backing: Non-adhering backing to sealant; nonstaining, compatible with sealant and primer such as round, closed cell polyethylene foam rod; oversized 30 percent to 50 percent larger than joint width. Materials impregnated with oil, bitumen or similar materials are not permitted.
- E. Joint Cleaner: Non-corrosive and nonstaining type, recommended by sealant manufacturer and compatible with joint forming materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine job site conditions; verify substrate, surfaces, and joint openings are ready to receive work and field measurements are as shown on drawings, as specified in this Section, and as recommended by manufacturer.
- B. Report unacceptable conditions to the County. Begin installation only when unacceptable conditions have been corrected and written approval and authorization to begin installation has been received from County.

### 3.2 PREPARATION

- A. Clean, prepare, and prime joints in accordance with manufacturer's instructions.
- B. Remove loose materials and foreign matter that might impair sealant adhesion. Clean porous materials such as concrete or masonry by grinding, sand or water blast cleaning, mechanical abrading, acid washing or a combination of these methods as required to provide a clean, sound base surface for sealant adhesion.
  - 1. Remove laitance by acid washing, grinding or mechanical abrading.
  - 2. Remove form oils, release agents, chemical retardants, by sand or water blast cleaning.
  - 3. Blow out joints with oil-free compressed air loose particles resulting from grinding, abrading, or blast cleaning prior to sealant application.

- C. Mechanically or chemically clean nonporous surfaces such as metal and glass. Remove temporary protective coatings on metallic surfaces using solvents that leave no residue as recommended by metal surface manufacturer. When masking tape or strippable films are used, remove the tape or film and clean any residual adhesive. Apply and wipe-dry cleaning solvents using clean, lint-free cloths or paper towels, do not allow solvent to air dry without wiping.
- D. Protect elements surrounding the work of this Section from damage or disfiguration.

3.3 APPLICATION

- A. Apply sealants in accordance with ASTM C1193, manufacturer’s instructions, and accepted shop drawings.
- B. Apply acoustical sealants in accordance with ASTM C919, manufacturer’s instructions, and accepted shop drawings
- C. Measure joint dimensions and size materials to achieve required width-to-depth ratios. Acceptable joint width-to-depth ratios:

Material	Joint Width	Joint Depth	
		Minimum	Maximum
Metal, glass, or other nonporous surfaces.	1/4 inch (minimum)	1/4 inch	1/4 inch
	Over 1/4 inch	1/2 of width	Equal to width
Wood, concrete, masonry, or other porous surfaces.	1/4 inch (minimum)	1/4 inch	1/4 inch
	Over 1/4 inch	1/2 of width	Equal to width
	Over 1/2 to 2 inches	1/2 inch	1/2 inch
	Over 2 inches	As recommended by sealant manufacturer.	

- D. Install joint backing to achieve desired joint width-to-depth ratio. Roll the material into the joint to avoid lengthwise stretching. Do not twist or braid rod stock.
- E. Install bond breaker where joint backing is not used.
- F. Prime surfaces to receive joint sealant with primer recommended by sealant manufacturer.
- G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges. Apply masking tape where required to protect adjacent surfaces from sealant application.

- H. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- I. Tool joints concave. Use dry tooling method.

3.4 CLEANING AND REPAIRING

- A. Immediately clean work.
- B. Clean adjacent soiled surfaces. Use a solvent or cleaning agent as recommended by the sealant manufacturer. Remove any masking tape immediately after tooling joints, leaving finished work in neat and clean condition.
- C. Repair or replace defaced or disfigured caused by work of this Section.

3.5 PROTECTION OF FINISHED WORK

- A. Protect sealant until cured.
- B. Do not paint sealants until sealant is fully cured.
- C. Protect joint sealants from contact with contaminating substances and from damage. Cut out, remove and replace contaminated or damaged sealants, immediately, so that they are without contamination or damage at time of substantial completion

**END OF SECTION**

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SECTION 08 11 13  
METAL DOORS AND FRAMES

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**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Standard hollow metal doors and frames.
  - 1. Hollow metal doors, rated and non-rated.
  - 2. Hollow metal interior door and window frames, rated and non-rated.
- B. Stainless steel exterior door frames.
- C. Interior window frames.
- D. Sidelights.
- E. Transoms.
- F. Door glazing.
- G. Door louvers.
- H. Finish: Field-painted, color as indicated on Drawings; if not indicated, to be selected by Architect. Provide exterior paint system on both interior and exterior sides and four edges of exterior doors.
  - 1. Do not paint stainless steel exterior door frames.

1.2 REFERENCES

- A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only. Refer to Section 01 42 00 for definitions, acronyms, and abbreviations.
- B. Standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes in effect as of the date of issue of this Project Manual, unless indicated otherwise in CBC Chapter 35 and CFC Chapter 80.
- C. Referenced Standards:
  - 1. ANSI/SDI A250.8 – Standard Steel Doors and Frames (formerly SDI-100).
  - 2. ANSI / NAAMM HMMA 866-01 – Guide Specifications for Stainless Steel Hollow Metal Doors and Frames.
  - 3. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

4. ASTM A666 – Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.
5. ASTM A1008/A1008M – Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
6. ASTM A1011/A1011M – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
7. ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
8. ASTM E283 – Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
9. ANSI/NAAMM HMMA 861 – Guide Specifications for Commercial Hollow Metal Doors and Frames.
10. CCR, Title 24, Part 12, 2013 California Referenced Standards Code – Chapter 12-7-4, Fire-Resistive Standards.
11. NAAMM HMMA 840 – Guide Specification for Installation and Storage of Hollow Metal Doors and Frames.
12. NFPA 80 – Standard for Fire Doors and Other Opening Protectives.
13. NFPA 105 – Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives.
14. NFPA 252 – Standard Methods of Fire Tests of Door Assemblies.
15. NFPA 257 – Standard on Fire Test for Window and Glass Block Assemblies.
16. NFRC 400 – Procedure for Determining Fenestration Product Air Leakage.
17. UL 9 – Standard for Safety Fire Tests of Window Assemblies.
18. UL 10B – Fire Tests of Door Assemblies.
19. UL 10C – Positive Pressure Fire Tests of Door Assemblies.
20. UL 752 – Standard for Bullet-Resisting Equipment.
21. UL 1784 – Air Leakage Tests for Door Assemblies

### 1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings.



- B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.

#### 1.4 SUBMITTALS

- A. Shop Drawings: Include illustrations and schedule of finish hardware, door and frame size, type, material, construction, finishing, anchoring, glazing, louvers, accessories and preparation for installing hardware.
  - 1. Method of attachment of frames to structure shall be reviewed by Architect for acceptance or rejection.
  - 2. Details of conduit and preparations for power, signal, and control systems.
- B. Templates: Furnish hardware templates to fabricator of frames to be factory prepared for installation of hardware.
- C. Manufacturer's Certificate for Exterior Door Assemblies: Certify that door assemblies meet air infiltration requirements of California Energy Code.
  - 1. Air Leakage Limits: Manufactured exterior door assemblies shall have air infiltration rates not exceeding 0.3 cfm/sq ft of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/sq ft for nonresidential double doors (swinging), when tested according to NFRC 400 or ASTM E283 at a pressure differential of 75 pascals or 1.57 pounds/sq ft.
- D. Submit product data for type of metal primer proposed for use.

#### 1.5 QUALITY ASSURANCE

- A. Provide doors and frames complying with ANSI A250.8, ANSI/NAAMM-HMMA 861 or ASTM A666, as applicable and as specified herein.

#### 1.6 REGULATORY REQUIREMENTS

- A. Fire-Rated Doors and Frames: Provide doors and frames 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.
  - 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: At 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.
- B. Testing of Fire-Rated Door and Frame Assembly: Conform to applicable requirements of State Fire Marshal Standard 12-7-4, "Fire Door Assembly Tests," as referenced in 2013 California Referenced Standards Code, Chapter 12-7-4, "Fire-Resistive Standards."
- C. Doors and Frames for Smoke-Control Door Assemblies: Comply with applicable requirements of NFPA 105 or UL 1784.
- D. Fire-Rated Door and Frame Labels: All fire rated doors and frames shall have metal labels (including "S" labels) permanently fastened to the jamb indicating the fire rating and Testing Agency name.
  - 1. Do not apply primer or paint over fire rating labels.

- E. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 and 2013 California Referenced Standards Code, Chapter 12-7-4, "Fire-Resistive Standards", that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials under protective cover and store in upright position within a dry enclosed space in a manner that will prevent rust and damage. Do not create a humidity chamber by using a plastic or canvas shelter that is not adequately vented.
- B. Deliver fully-welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

#### 1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

#### 1.9 COORDINATION

- A. Coordinate installation of anchorages for metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

### **PART 2 PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturers, Metal Doors and Frames:
  - 1. Ceco Door Products, Milan, TN; 888-232-6366, [www.cecodoor.com](http://www.cecodoor.com).
  - 2. Curries Company, Mason City, IA; 800-377-3948, [www.curries.com](http://www.curries.com).
  - 3. Steelcraft, Cincinnati, OH; 800-243-9780, [www.steelcraft.com](http://www.steelcraft.com).
  - 4. Amweld Building products LLC., Stow, OH; 800-248-6116, [www.amweld.com](http://www.amweld.com).
  - 5. Or accepted equal.

#### 2.2 MATERIALS

- A. Hollow Metal Doors and Frames:
  - 1. Cold-Rolled Steel Sheets for Doors: Commercial Steel (CS), Type B, complying with ASTM A1008/A1008M.
    - a. Use cold-rolled steel for door frame and exposed-to-view surfaces.
  - 2. Hot-Rolled Steel Sheets and Strip for Frames: Commercial Steel (CS), Type B; complying with ASTM A1011/A1011M.
    - a. Steel to be free of mill scales, pitting, or surface defects; pickled and oiled.
    - b. Use hot-rolled steel for reinforcement and unexposed components only.

3. Factory-Applied Primer: Manufacturer's standard primer, thickness: 2 mils, minimum, and compatible with ferrous and galvanized metal primers specified elsewhere.
- B. Stainless Steel Exterior Door Frames: Sections shall be 16 gauge minimum thickness. Sections and components shall be stainless steel conforming to ASTM A666, Type 316. Finishes for stainless steel door frames shall comply with ANSI/NAAMM HMMA 866. Finish shall be #6, soft satin finish per NAAMM HMMA 802, Table 2.
- C. Refer to Section 08 81 00 "Glass Glazing" for glass glazing requirements.
- D. Refer to Section 08 71 00 "Door Hardware" for hardware requirements.

### 2.3 STANDARD HOLLOW METAL DOOR FABRICATION

- A. General: Fabricate to sizes shown, providing necessary clearances and bevels to permit operation without binding. Doors shall be free from warp, wave, buckle or other defect. Doors shall be 1-3/4 inches thick, unless otherwise indicated on Drawings.
- B. Flush Door Construction: Door shall be Grade III, Model 2, fabricated with face sheets of 16 gauge steel in accordance with ANSI/SDI A250.8 and hot-dipped galvanized to ASTM A653/A653M G90 at exterior locations and interior wet locations. Door shall be flush with edge seams, weld filled and ground smooth. Bevel lock edge 1/8 inch in 2 inches. Door shall be provided with top flush cap and bottom inverted 14 gauge steel channels welded within the door. Door shall be reinforced, stiffened and sound deadened with impregnated kraft honeycomb core completely filling door cavity, and laminated to the inside faces of panels.
  1. Exterior doors shall be insulated with an expanded polystyrene or polyurethane core, or as standard with manufacturer. Completely fill door cavity with insulation. Expanded polystyrene to be ASTM C578, Type 1 or 2, with 1lb/cu. ft. density.
- C. Preparation of Hardware: Door shall be mortised, reinforced, drilled and tapped at the factory from templates for all mortise hardware listed in the Hardware Schedule. Door shall be reinforced for surface applied hardware such as closers, checks, escutcheons and kick plates; drilling and tapping to be done in the field by door installer. Reinforcement to be 12 gauge for locksets and latchsets, and 14 gauge for surface applied hardware, except use 3/16-inch thick plate for butt hinges. Door shall be provided with reinforcing unit as recommended by lock manufacturer.
- D. Hardware Mounting Heights and Door Clearances: In accordance with ANSI Industry Standards and applicable requirements.

### 2.4 STANDARD METAL DOOR AND WINDOW FRAME FABRICATION

- A. General:
  1. Provide fully-welded frames; location as indicated on Drawings.
  2. Metal frames shall be formed to shapes and sizes shown.
- B. Fully-Welded Frames: Head and jamb splices shall be fabricated with mitered, coped and continuously welded inside and outside corners and be finished on the outside face to present a smooth surface.
- C. Frames shall be fabricated from 16 gauge steel at interior locations and 16 gauge stainless steel at exterior locations, and shall be designed with integral stop and trim. All corners shall be reinforced with 18 gauge "L" shaped reinforcements welded on the inside face of the frame.
  1. Provide steel reinforcement at steel frames.

2. Provide stainless steel reinforcement at stainless steel frames.
- D. Reinforce frames wider than 48 inches with roll formed channels fitted tightly into frame head, flush with top.
1. Provide steel channels at steel frames.
  2. Provide stainless steel channels at stainless steel frames.
- E. Frames shall be hot-dipped galvanized to ASTM A653/A653M G90 at interior wet locations.
- F. Preparation for Hardware: Frame shall be prepared at the factory for all hardware using templates furnished by hardware supplier. Locations of miscellaneous hardware shall conform to the recommendations for the Door & Hardware Institute. Mortise, reinforce, drill and tap for mortise type hardware. Reinforce frames for surface applied hardware; drilling and tapping to be done in the field by door installer.
1. Hardware cutouts shall have steel plate reinforcements with tapped holes fillet welded to frame on all four sides of the plate. Fillet welds shall be minimum 1 inch long. Reinforcement shall include 3/16 inch butt reinforcement; 12 gauge lock strike; 14 gauge for surface applied items.
    - a. Provide stainless steel reinforcement at stainless steel frames in the locations and thicknesses specified above.
  2. Provide strike stops at frames to receive metal doors with holes for three rubber door silencers. On double door frames, provide for two silencers per door at head. Omit holes at frames to receive unitized gasketing; refer to Section 08 71 00 "Door Hardware".

## 2.5 ANCHORS

- A. Frame shall be anchored to structure with anchors appropriate for use with type of adjacent construction. Anchors shall be steel except at stainless steel frames, where they shall be stainless steel. Anchorage shall securely fasten frames to wall construction involved. Provide a minimum three anchors, including one adjustable floor anchor, at each door jamb. Anchors shall provide stiffness and rigidity to keep frames square, in accurate position without twisting, buckling or warping. Fasteners to framing substrate shall be the following minimums; greater as required by the frame manufacturer or as conditions warrant:
1. Metal Framing: Two #10 self-tapping sheet metal screws per anchor, length as required; fastener to penetrate a minimum of 1/4 inch into framing member.
  2. Masonry: Provide masonry "tee" shaped anchors of 14 gauge steel with holes to allow grout to pass through. Minimum three anchors per jamb for frames up to 7 feet – 4 inches high. Provide additional anchors at taller frames.
    - a. Anchors shall be stainless steel at exterior stainless steel frames.

## 2.6 BORROWED LIGHTS (INTERIOR WINDOWS, FIXED)

- A. Interior Window Units: Furnish shop assembled and welded units for fixed windows, fabricated to the designs and dimensions indicated. Provide metal glazing stops and mouldings for field assembly with countersunk oval head self-tapping screws spaced not over 16 inches on center. Frames shall be complete with all corners welded, ground smooth, and provided with anchors.

## 2.7 SHOP PRIMING

- A. Doors and frames shall be leveled and welds ground smooth. Apply mineral filler to eliminate weld scars and other blemishes.
- B. Shop Priming: All surfaces shall be cleaned, phosphatized, and given one coat of baked-on rust-inhibiting primer in accordance with the Steel Door Institute Specification "Test Procedure and Acceptance Criteria for Primer Painted Steel Doors and Frames".
  - 1. Exterior doors and interior doors and frames in wet locations shall be galvanized to ASTM A653/A653M A60 and primed with zinc-rich primer.
  - 2. Do not prime fire-rated door and frame labels.
  - 3. Do not prime stainless steel frames.

## 2.8 ACCESSORIES

- A. Glass Glazing: As specified in Section 08 81 00 "Glass Glazing". Comply with hollow metal door manufacturer's written instructions.
- B. Glazing Stops: LoPro by Anemostat or Slimline by Air Louvers, Inc. Factory primed, galvanized steel; mitered corners; prepared for countersink style screws. Sizes as indicated on Drawings. Install glazing stop fasteners on the non-secure side of doors. Finish in custom color as selected by Architect.
  - 1. At fire-rated doors, fire-rating of glazing stops shall match door fire-rating.
- C. Door Louvers: AFDL by Anemostat or Model 800 A1 by Air Louvers, Inc. Fabricate from cold rolled steel sheet. Permanent interlocking construction shall be used to secure blades to frame on stationary louvers. Frames shall have mitered and flush welded corners. At exterior locations, factory install aluminum wire mesh screens. Louvers shall have fifty percent free area minimum; sizes as indicated on Drawings. Factory finish in custom color as selected by Architect.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that opening sizes and tolerances are acceptable.

### 3.2 INSTALLATION

- A. Install doors and frames in accordance with ANSI A250.8, ANSI/NAAMM-HMMA 861, and UL 752, as applicable.
- B. Set frame level and plumb, and brace adequately to prevent damage or distortion. Secure to structure with minimum of three anchors at each jamb. Field joints shall be welded, body puttied and ground smooth.
  - 1. Removable Spreaders: Wherever possible, leave frame spreaders intact until frames are set perfectly square and plumb, and anchors are securely attached.
- C. Door Installation in Metal Frames: Fit doors accurately in frames.
- D. Coordinate installation of doors and frames with installation of doors specified in Section 08 14 00, hardware specified in Section 08 71 00, glazing as specified in Section 08 81 00, and louvers as specified in this Section.

3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.4 ADJUST AND CLEAN

- A. Prime Coat Touch-Up: Immediately after erection, sand smooth all rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer. Touch-up shall not be obvious. Do not use primer at stainless steel frames.
- B. Cleaning and Finishing: Upon completion of the work, clean all exposed surfaces, removing any discoloration or foreign matter, and touch up all abraded or cut areas and exposed edges with finishing material recommended by the manufacturer. Touch-up of finish shall not be obvious.
- C. Final Adjustments: Adjust door for smooth and balanced door movement. Check and readjust operating finish hardware in hollow metal work immediately prior to final inspection. Leave work in complete and proper operating condition.
- D. Defective Work: Remove and replace defective work, including doors and frames which are warped, bowed or otherwise damaged, as directed by Architect, at no cost to County.
- E. Protection: Protect installed hollow metal work against damage from other construction work.

3.5 CLEAN-UP

- A. Upon completion of the work of this Section, remove all excess materials, rubbish and debris from the premises.

**END OF SECTION**

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SECTION 09 24 00  
PORTLAND CEMENT PLASTERING

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**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Metal furring and lathing.
- B. Building wrap (weather-resistive barrier) under metal lath, and over glass-fiber-faced exterior gypsum sheathing.
  - 1. Provide a two-layer building wrap system as follows:
    - a. One layer of building paper over one layer of HDPE product.
    - b. Flashing as recommended by building wrap manufacturer.
- C. Three-coat Portland cement plaster system with integral color acrylic finish coat.

1.2 RELATED SECTIONS

- A. Section 05 40 00 – Cold-Formed Metal Framing.
- B. Section 07 25 00 – Weather Barriers.
- C. Section 07 92 00 – Joint Sealants.
- D. Section 09 29 00 – Gypsum Board: Glass-Fiber-Faced Gypsum Sheathing.

1.3 REFERENCES

- A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only. Refer to Section 01 42 00 “References” for definitions, acronyms, and abbreviations.
- B. Unless otherwise noted, standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Project Manual.
- C. Referenced Standards:
  - 1. ASTM A641/A641M – Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
  - 2. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 3. ASTM C150 – Standard Specification for Portland Cement.
  - 4. ASTM C897 – Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.
  - 5. ASTM C926 – Standard Specification for Application of Portland Cement-Based Plaster.
  - 6. ASTM C954 – Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.

7. ASTM C1002 – Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
8. ASTM C1063 – Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
9. ASTM D412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension.
10. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
11. ASTM D1653 – Standard Test Methods for Water Vapor Transmission of Organic Coating Films.
12. ASTM D4060 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
13. ASTM D4541 – Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
14. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
15. ASTM G155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
16. FS TT-C-555 – Coating, Textured (for Interior and Exterior Masonry Surfaces).

#### 1.4 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00 “Submittal Procedures”.
- B. Provide product data on building wrap, furring and lathing components, plaster materials, characteristics and limitations of products specified, and plastering accessories.
- C. Submit manufacturer’s installation instructions under provisions of Section 01 33 00 “Submittal Procedures”.
- D. Provide two 12 inch x 12 inch samples of plaster system for each type of color and texture scheduled for installation.

#### 1.5 QUALITY ASSURANCE

- A. Applicator: Company specializing in cement plaster work sufficient documented experience.
- B. Apply cement plaster in accordance with ASTM C926.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery, storage and handling in accordance with provisions of Section 01 60 00 “Product Requirements”.
  1. Deliver manufactured products to job site in their original unopened containers with labels intact and legible at the time of use.
  2. Do not permit scattering of materials or equipment but use necessary means to ensure neatness of the site and structure at all times.
  3. Perform cleaning of tools and equipment only in the area designated for that purpose.
- B. Protection: Use means necessary to protect lath and plaster materials before, during and after installation and to protect the installed work and materials of other trades.



- C. Replacements: In the event of damage, immediately make repairs and replacements necessary to the approval of the Project Manager and at no additional cost to County.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply plaster when substrate or ambient air temperature is less than 50 degrees F nor more than 90 degrees F. If freezing is expected within the next 12 hours, do not apply plaster.
- B. Maintain minimum ambient temperature of 50 degrees F during and after installation of plaster.
- C. Protect plaster from uneven and excessive evaporation during any weather conditions.

**PART 2 PRODUCTS**

2.1 PLASTER MATERIALS

- A. Cement: ASTM C150, Normal – Type I-II, low alkali; gray color; Portland Cement with integral PRF admixture as manufactured by Omega-Products International (Super Cement), Hanson (Premium Cement) or accepted equal.
- B. Aggregate: In accordance with ANSI/ASTM C897, except that gradation shall meet the following requirements:

<u>Sieve Size</u>	<u>Percent Retained on each sieve (by weight)</u>	
	<u>Maximum</u>	<u>Minimum</u>
No. 4	0	—
No. 8	10	0
No. 16	40	10
No. 30	65	30
No. 50	90	70
No. 100	100	90-95

The sand should have more than 50% retained between any two consecutive sieves nor more than 25% between Nos. 50 and 100 sieves.

- C. Water: Clean, fresh, potable and free of mineral or organic matter that can affect plaster system components.

- D. Acrylic Finish Coat: Vapor permeable, 100% acrylic polymer finish coat with crushed mineral aggregates, meeting the following performance criteria:

<u>Property</u>	<u>Test Method</u>	<u>Results</u>
Adhesion to concrete	ASTM D4541	100 psi
Vapor permeability	ASTM D1653 Method A Method B	3. dry perms 9.7 wet perms
Abrasion resistant (1000 cy)	ASTM D4060	6.8% weight loss
Tensile strength Nontextured film Textured film	ASTM D412	200 psi 20psi
Elongation Nontextured film	ASTM D412	30%
Wind driven rain	Federal Spec TT-C-555B	Pass
Accelerated weathering 2000 hours	ASTMG155	No cracking, blistering, checking or adhesion loss
Freeze-thaw resistance of dry film (25 cy)	Lab method	Pass
Dirt pickup	Lab method	None
Chemical resistance	ASTM D1308	Good resistance to mild acids, alkalis and salts
Flame Spread	ASTM E84	15 maximum
Smoke Developed	ASTM E84	10 maximum

1. Acceptable manufacturers:
  - a. Omega Akroflex.
  - b. Dryvit
  - c. ParexLaHabra
  - d. Or accepted equal.
  - e. Substitutions: Under provisions of Section 01 60 00 "Product Requirements".
2. Color and Texture: As selected by Architect.
3. Accessories
  - a. Leveler and primer as manufactured by the finish coat manufacturer.

## 2.2 FURRING AND LATHING

- A. Metal Lath at vertical surfaces: Self furred grooved expanded metal flat diamond mesh; weighing 3.4 pounds per square yard; continuous horizontal grooves 1/4 inch deep at 6-3/16 inches on center; galvanized finish as manufactured by Clark Western Building Systems, Amico or accepted equal.
- B. Metal Lath corner reinforcement at exterior corners: Self furring expanded metal flat diamond mesh; weighing 3.4 pounds per square yard; galvanized finish as manufactured by Clark Western Building Systems, Amico or accepted equal.
- C. Expanded Corner Bead: Formed steel, minimum 26 gauge thick, shaped to permit complete embedding in plaster; galvanized finish; No. 1A as manufactured by Clark Western Building Systems, Amico or accepted equal.

- D. Casing Beads: Formed steel, minimum 26 gauge thick; of longest possible length; sized and profiled to suit application; galvanized finish; No. 66 casing bead as manufactured by Clark Western Building Systems, Amico or accepted equal.
- E. Weep Screeds: Formed steel, minimum 26 gauge thick; square flange, 3-1/2 inch high leg, of longest possible length; sized and profiled to suit application; galvanized finish; J-Metal foundation sill screed with weep holes as manufactured by Clark Western Building Systems, Amico or accepted equal.
- F. Control Joints: Formed steel; minimum 26 gauge accordion profile, expanded metal flanges each side; of longest possible length; sized and profiled to suit application; galvanized finish; No. XJ 15-3, as manufactured by Clark Western Building Systems, Amico or accepted equal.
- G. Expansion Joints: Formed steel, minimum 26 gauge thick; of longest possible length; sized and profiled to suit application; galvanized finish; No. 40 adjustable expansion joint as manufactured by Clark Western Building Systems, Amico or accepted equal.
- H. Reveal Expansion Joint: Extruded aluminum with rubber gasket and built-in weep; Part No. EXPW 75-75 manufactured by Flannery, Inc., San Fernando, CA 91340; phone: 818.837.7585; fax: 818.837.1155; URL: <http://www.flannerytrim.com> , or accepted equal.
- I. Strip Mesh at horizontal surfaces and corners of openings: Expanded metal flat diamond; weighing 3.4 pounds per square yard; galvanized finish; 4 inches wide as manufactured by Clark Western Building Systems, Amico or accepted equal.

### 2.3 LATH ANCHORAGES

- A. Anchorages at metal framing: Install galvanized # 8 wafer head screws at 6 inches on center vertically at each stud x length as required for embedment into framing members.
  - 1. ASTM C954, self-drilling and self tapping screws for heavy gage steel framing (0.033 inch to 0.112 inch thick).
  - 2. ASTM C1002, self drilling and self tapping screws for light gage steel framing (less than 0.033 inch thick).

### 2.4 BUILDING WRAP

- A. Building wrap to consist of two layers; one layer of building paper installed over one layer of HDPE product.
- B. HDPE Product and Flexible Flashings: Refer to Section 07 25 00 "Weather Barriers".
- C. Building Paper: Super Jumbo Tex 60 Minute one ply asphalt saturated kraft Grade D breather type sheathing paper by Fortifiber Building Systems Group or accepted equal.

### 2.5 CEMENT PLASTER MIXES

- A. Mix and proportion cement plaster as follows:
  - 1. Scratch coat proportions: One part Portland cement, four parts aggregate and 3 oz. PRF admixture.
  - 2. Brown coat proportions: One part Portland cement, five parts aggregate and 3 oz. PRF admixture.
  - 3. Finish coat proportions: Per manufacturer's recommendations.
- B. Mix only as much plaster as can be used in one hour.
- C. Mix materials dry, to uniform color and consistency, before adding water.
- D. Protect mixtures from frost, contamination, and evaporation.

- E. Do not retemper mixes after initial set has occurred.

## 2.6 SEALANTS

- A. Sealants used in conjunction with the scratch, brown and finish coats shall only be the type recommended by the product manufacturer(s).

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Inspect the installed work of other trades and verify that such work is complete to the point work of this section may begin.
- C. Verify that substrate is plumb, level, square and aligned.
- D. Report in writing conditions which might adversely affect the performance of installed lath and plaster to the Architect.
- E. Beginning of installation means acceptance of existing conditions.

### 3.2 PREPARATION

- A. Protect surfaces near the work of this Section from damage or disfiguration.

### 3.3 BUILDING WRAP (WEATHER RESISTIVE BARRIER) INSTALLATION

- A. Apply two-layer building wrap (weather resistive barrier) as indicated on Drawings. Install one layer of building paper over one layer of HDPE product.
- B. HDPE Product Installation: Refer to section 07 25 00 "Weather Barriers".
- C. Building Paper Installation: Apply building paper over HDPE product, horizontally with a 3-inch overlap and a 6-inch end lap; and fasten in place. Joints to be staggered over HDPE product joints.
  - 1. Extend into jambs of openings and seal corners with tape.
  - 2. Seal fasteners and penetrations with compatible sealing tape.

### 3.4 INSTALLATION – LATHING MATERIALS

- A. Install metal plaster bases and accessories in conformance with ASTM C1063. All vertically placed accessories shall be installed continuously; breaks shall occur at horizontally placed accessories only.
- B. Attach metal lath to framing members at maximum 6 inches on center.
- C. Lath shall be installed as specified in Section 2510 and Table 2511.1.1 of the CBC for wire fabric lath. The lath shall be installed with the cross wires parallel to the framing and shall be attached with fasteners at the furring crimps.
- D. Lath shall stand off substrate immediately behind the lath a minimum of 1/4 inch per CBC Table 2511.1.1.
- E. Continuously reinforce internal angles with additional layer of lath, 6 inches wide minimum, except where the metal lath returns 3 inches from corner to form the angle reinforcement. Fasten at perimeter edges only.

- F. Place corner bead with mesh at corners. Attach with fasteners as recommended by manufacturer, spaced not more than 18 inches on center. Fasten at outer edges only.
- G. Place minimum 4 inch wide strip mesh diagonally at corners of lathed openings. Secure rigidly in place. Extend minimum 8 inches diagonally each direction from point of corner.
- H. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.
- I. Install accessories to lines and levels.

### 3.5 CONTROL JOINTS

- A. At stud framing, locate exterior control joints every 12 feet in each direction, or as indicated on the Drawings. Install on top of metal lath and attach by wiring to metal lath.

### 3.6 EXPANSION JOINTS

- A. At stud framing, locate exterior expansion joints at building expansion joints. Cut the metal lath and install the metal lath over the flanges of the expansion joint. Fasten only one flange of the expansion joint to the framing; allow the other flange to float.

### 3.7 PLASTERING

- A. Apply plaster in accordance with ASTM C926.
- B. Apply scratch coat to a nominal thickness of 3/8 inch over metal reinforcement. Cover metal reinforcement.
  - 1. After application, lightly score scratch coat horizontally.
  - 2. If brown coat cannot be applied within four hours, keep scratch coat moist for 48 hours before applying brown coat.
- C. Apply brown coat to a nominal thickness of 3/8 inch over scratch coat. Rod brown coat straight and true in all directions.
- D. Moist cure brown coat for minimum seven days before applying finish coat.
- E. At exterior corners, the finish coat shall be applied so that the nose wire is covered with a minimum of 1/8 inch of plaster.

### 3.8 ACRYLIC FINISH COAT

- A. Surface Preparation
  - 1. Surfaces to receive acrylic finishes must be structurally sound, clean and dry. Concrete, masonry and cement plaster base coats must be properly cured and free of all grease, mildew, fungus, efflorescence and any other contaminant.
  - 2. Contaminants must be removed by wire brush, pressure washing or sandblasting. Efflorescence shall be removed by a diluted acid wash and rinse.
  - 3. Loose deteriorated stucco, masonry and concrete must be removed and repaired. Soft, dry dusty surfaces must be properly treated to insure adhesion of acrylic finish.
  - 4. Apply sealant as recommended by finish coat manufacturer where appropriate at terminations and the junctions of dissimilar materials.
  - 5. Apply a leveler as necessary to achieve a flat surface prior to the application of the finish coat. The leveler shall be manufactured by the same manufacturer as the finish coat and shall be compatible for use with the plaster brown coat, the primer and the acrylic finish coat.
- B. Priming:

1. Apply primer to all repaired, patched or chalking surfaces. An existing coating totally free of chalking does not require priming.
2. For improved finish coverage and workability, apply primer over Portland cement base coats.
3. Allow 24 hours for primer to dry before application of acrylic finish coats.
4. Primer shall be from the same manufacturer as the finish coat manufacturer.

C. Application:

1. Refer to manufacturer's instructions for application of leveler, primer and acrylic finish.
2. The finish coat shall be applied and leveled to the minimum required thickness in the same application.
  - a. The finish coat shall be applied and textured continually over the wall surface in order to maintain a wet edge and provide a uniform appearance.
  - b. Work to corners or joints and do not allow the partially applied material to set up within a distinct wall area.
  - c. Achieve the final texture by using trowels or floats with a variety of motions to create the specified texture and to match approved samples.

3.9 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 5 feet, properly meeting adjacent surfaces and materials.

3.10 CLEAN UP

- A. Promptly remove and clean plaster from all surfaces not scheduled to receive this finish. Verify cleaning recommendations from each substrate manufacturer prior to proceeding with any cleaning operations.
- B. Clean up and remove from the site all excess and waste materials generated by the installation of the plaster system.

**- END OF SECTION -**

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RESINOUS WALL AND FLOOR SURFACING

SECTION 09 77 26

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**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Seamless epoxy system consisting of 100 percent solids accelerated aliphatic amine cured epoxy with chopped strand fiberglass and Kevlar® reinforcement, and an integrated anti-microbial topcoat system.

1.2 REFERENCES

A. Referenced Standards:

1. ASTM C579 – Standard Test Methods for Compressive Strength of Chemical- Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
2. ASTM D4263 – Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
3. ASTM D4501 – Standard Test Method for Shear Strength of Adhesive Bonds Between Rigid Substrates by the Block-Shear Method.
4. ASTM E1907 – Standard Guide to Methods of Evaluating Moisture Conditions of Concrete Floors to Receive Resilient Floor Coverings.
5. ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
6. ASTM F1869 – Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Sub-floor by Using Anhydrous Calcium Chloride.
7. ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in situ Probes.
8. ICRI No. 03732 – Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays, CSP 1-9.

1.3 SUBMITTALS

- A. Product Data: For each product indicated, include manufacturer's technical data, application instructions, and recommendations for each product component.
- B. Shop Drawings: Provide enlarged details indication terminations at walls, door frames, pits, curbing, etc.
- C. Samples: For each resinous system required, provide, when requested, a sample applied to a rigid backing, minimum size 3 inch x 3 inch.

- D. Installer Certificates: Signed by manufacturer, certifying that installer complies with specified requirements and has documented experience with shower installations.
- E. References: Installer shall submit a list of five projects of similar size and complexity as this project, including Owner's names and contact phone numbers. Projects must be specifically shower projects involving installing spray applied Kevlar and fiberglass stranded epoxy system with integrated flooring and cove base.
- F. Warranty: Manufacturer shall provide a specimen copy of warranty.
- G. Manufacturer's Field Services: Provide letter of manufacturer's intent to comply with the required field services as specified in this Section.

#### 1.4 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Meeting: Prior to the installation of the seamless system, meeting shall be held at the project site with the manufacturer's representative, the installer, the Architect, and the Owner's representative. Record discussions and furnish a copy to each participant. Topics to be discussed shall include, but not be limited to:
  - 1. Planned start and completion timing for each mobilization.
  - 2. Safety procedures.
  - 3. Coordination of other trades in area.
  - 4. Slab conditions.
  - 5. Slab testing results.
  - 6. Existing wall substrate conditions.
  - 7. Surface preparation.
  - 8. Required room temperatures.
  - 9. Ventilation.
  - 10. Step by step installation procedures.
  - 11. Curing time and methods.
  - 12. Protection of completed work.
  - 13. Review of performance requirements including chemical abuse, effluent temperature, type, size, and weights of vehicular and static loads.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who is experienced in applying the resinous system(s) specified herein.
- B. Certifications and Warranty: Provide a letter of training certification from the manufacturer stating that the installer is approved and experienced to apply the



products specified in this Section. Provide a copy of the manufacturer's warranty that covers the five-year material and labor replacement for any project failures due to product performance or its improper installation as further clarified in this Section.

- C. Manufacturer shall submit written description of installer's experience with specified material over the last five years, including job sizes and complexity. List a minimum of ten shower projects including owner's names and phone numbers. Project list shall include contractor's experience with all required surface preparation and the installation of specified or equal fiberglass reinforced spray applied seamless system including wall, ceiling and floors. Mat-layup systems are excluded. Only spray applied systems that contain fiberglass and Kevlar strands premixed into both the part A and part B epoxy material are acceptable. Strands must be sufficient to for a matrix/web of reinforcement in epoxy material. Include owner's names and phone numbers.
- D. Source Limitations: Obtain all resinous flooring materials, including waterproofing membranes, grouts, resins, curing agents, grout coats, aggregates, topcoats, patching and fill material, joint sealants, and repair materials from a single manufacturer.
- E. Manufacturer Field Services: The installer of the coating system shall include the cost of a manufacturer's field engineering person to be present throughout the duration of all aspects of the work specified in this Section as follows:
  - 1. Material manufacturer shall be responsible for the review of the project conditions that may impact product performance before product installation, including but not limited to project climate, acceptable temperature of substrate and air, acceptable humidity levels of air, acceptable moisture content of substrates to be coated, surface preparation, and all other conditions that are necessary for optimum product performance. The manufacturer's field engineer shall document and verify that all conditions are acceptable prior to commencement of work.
  - 2. The manufacturer's field representative shall submit through the Contractor written approvals of the proposed coating system including manufacturer's recommended applicator, manufacturer's recommended application procedures, and manufacturer's recommended surface preparation.
  - 3. The manufacturer shall be solely liable for any warranty claims resulting from product failure, whether caused by defective product or improper installation for a period of five years. See Warranty article of this Section for clarification.
  - 4. The materials manufacturer's representative shall be present on site for the pre-installation site conditions evaluation, for the duration of the surface preparation and for all phases of the installation of the specified resinous coating system.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

- B. Store materials in a location to prevent deleterious effects from sunlight, moisture, excessive heat, or cold.
- C. Storage of materials shall comply with all fire and safety regulations.

#### 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application including the following:
  - 1. Maintain ambient air temperature between 65 degrees F and 85 degrees F.
- B. General Condition of Substrates: Prepare and clean substrates in accordance with manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral pH substrate for resinous wall application.
- C. Masonry Walls:
  - 1. Abrasive Blast or mechanically abrade surfaces to achieve an ICRI CSP2 or ICRI CSP3 anchor profile for coating.
  - 2. Pre-patch any imperfections, recessed areas, cracks, etc. with manufacturer's recommended 100 percent solids epoxy patching material to provide an even and uniform surface. All patching shall be struck smooth and be flush with the surface of the substrate.
- D. Lighting: Proper lighting is required for installation. Lighting shall simulate permanent lighting conditions during resinous wall application.
- E. Close spaces to traffic during resinous coatings application and for not less than 48 hours after application, unless manufacturer recommends a longer period.
- F. Airborne contamination: Resinous systems shall not be applied in areas where dust or other airborne particulate matter is being generated.

#### 1.8 WARRANTY

- A. Manufacturer shall furnish a single, written warranty covering 100 percent of the material and labor costs protecting the Owner from delamination and product failure caused by defective product or defective installation for a period of five years from date of project completion. Joint warranties between manufacturer and installer not accepted.
  - 1. Extent of warranty shall be limited to the repair or replacement of defective surfaces at no cost to the Owner including both material and installation costs associated with any repairs or replacement of defective product or defective installation. The warranty shall not include any remedy for defects caused by abuse, improper maintenance, change of use or operation, moisture migration from the back side of coating system or by normal wear, tear and usage or structural movement of building structure.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

#### A. Manufacturer:

1. Basis-of-Design: Prime Coat Coating Systems, Product: Seamless System 5130: Seamless coating system for Showers.
2. Or accepted equal.

### 2.2 SYSTEMS

#### A. Seamless Epoxy System for Showers: An integrated system for floors, walls and ceilings consisting of 100 percent solids accelerated aliphatic amine cured epoxy with chopped strand fiberglass and Kevlar® reinforcement, and an integrated anti-microbial Glaze topcoat system.

##### 1. System Characteristics/Performance Requirements:

- a. Color and Pattern: As selected by Architect from manufacturer's full range.
- b. Cove Base: 2 inch Cant-styled.
- c. System Thickness: Walls: 60 mils minimum.
- d. VOCs: Less than 100 g/l.
- e. Product Composition: Wall systems shall be spray applied 100 percent solids with fiberglass and Kevlar strands premixed into both the Part A and Part B epoxy components. System shall contain fiberglass strands sufficient enough to form a reinforced matrix/web within the resin providing increased tensile strength and impact resistance and high build characteristics as specified.
- f. Compressive Strength Minimum: 11,700 p.s.i. per ASTM D695.
- g. Tensile Strength Minimum: 3,900 p.s.i. per ASTM D638.
- h. Hardness minimum: 83-88 per ASTM D2240, Shore D Durometer.
- i. Abrasion Resistance Minimum: 0.03 gm/1000 revolutions per ASTM D4060 Taber Abrader.
- j. High or low solids solvent-based and all water-based systems not acceptable.
- k. Mat-layup systems not acceptable.
- l. Roller applied systems not acceptable.
- m. Integrated Anti-microbial shall be resistant to the following: Final finish shall include integrated anti-microbial that protects against the following:

1. FUNGI BACTERIA, Alternaria tenuis Aerobacter aerogenes, Alternaria brassiciola Bacillus cereus, Aspergillus clavatus Bacillus subtilis, flavus Desulfovibrio desulfuricans, niger Ecterobacter sp., oryzae Klebsiella pneumoniae, terreus Lactobacilli sp., ustus Micrococcus sp., versicolor Proteus sp. Aureobasidium (Pullularia) pullulans Pseudomonas aeruginosa, Candida guilliermondii S. typhimurium, lipolytica S. typhosa, pelliculosa, Salmonella choleraesuis, tropicalis Shigella sp., Chaetomium globosum Staphylococcus aureus, Cladosporium resinae Staphylococcus epidermidis, Epidermophyton sp. Streptococcus faecalis, Helminthosporium, gramineum Streptococcus pyogenes, Memnoniella echinata, Mucor racemosus. ACTINOMYCETES, Myrothecium verrucaria, Streptomyces rubroreticuli, Penicillium citrinum, Streptoverticillium reticulum, Penicillium islandicum, Thermoactinomyces vulgaris, expansum, funiculosum, lilacinum, luteum, piscarium, variabile, Rhizopus nigricans, Scopulariopsis brevicaulis, Spicaria violacea, Trichophyton mentagrophytes.
2. System Components: Manufacturer's standard components which are compatible with each other as follows:
  - a. Primer/Block Filler:
    1. Resin: 100 percent solids penetrating epoxy primer/filler.
    2. Product: PC 630.
    3. Application method: Spray.
    4. Minimum installed thickness: 12 mils to 16 mils over CMU and other porous surfaces.
    5. Number of coats: One.
  - b. Fiberglass and Kevlar® Reinforced Body Coat:
    1. Resin: 100 percent solids Fiberglass and Kevlar® reinforced epoxy
    2. Product: PC 200
    3. Application method: 45:1 air-powered airless spray w/gravity-fed hopper
    4. Reinforcement: Chopped strands of fiberglass and Kevlar®
    5. Minimum Installed thickness: 45 mils
    6. Number of coats: 1

- c. Top Coat:
  - 1. Resin: 100 percent solids Bisphenol A chemically resistant epoxy
  - 2. Product: PC 400 with PC 499 anti-microbial
  - 3. Application method: Spray
  - 4. Minimum installed thickness: 8-10 mils
  - 5. Antimicrobial: Integrated into topcoat
  - 6. Type: pigmented
- 3. General Performance Requirements:
  - a. Resinous flooring and wall systems shall meet minimum published standards in accordance with manufacturer's product data sheets. Materials shall form a monolithic reinforced coating system that forms a continuous reinforced barrier without breaks in material including at interfaces of inside and outside corners and interfaces between walls and ceilings and between walls and floors.

### 2.3 ACCESSORY MATERIALS

- A. Patching and Fill Material: Resinous product of resinous flooring manufacturer.
- B. Joint Sealants: Formulated by resinous flooring manufacturer for type of service and joint condition indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verification: Verify that all substrate and environmental conditions are in compliance with requirements discussed during pre-installation conference.
- B. Testing Activities During Resinous Coating Application
  - 1. Material Sampling: Owner's representative may at any time and any number of times during resinous coating application direct the Owner's independent testing agency to collect material samples for testing for compliance with requirements.
    - a. Material samples will be taken, identified, sealed, and certified in presence of Installer.
    - b. Testing agency will test samples for compliance with requirements using applicable referenced testing procedures in addition to testing procedures listed in manufacturer's product data.
  - 2. If test results show applied materials do not comply with specified requirements, Installer shall correct all deficiencies of coating system in a

method and manner acceptable to the manufacturer's recommendations at no cost to the Owner.

### 3.2 PREPARATION

- A. General: Prepare and clean substrates in accordance with manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral pH substrate for resinous wall application.
- B. Concrete Masonry Units:
  - 1. A visual inspection by the onsite manufacturer's representative is required to ensure that the substrate is acceptable to receive the specified coating. Any deficiencies shall be corrected by the Contractor. Requirements for an acceptable surface are as follows:
    - a. Mortar shall have a minimum of 28 days cure prior to coating.
    - b. Mortar joints are struck clean and filled tightly to avoid gaps or holes and to provide a neat, uniform appearance.
    - c. Removal of all mortar spatter, protruding mortar edges or any excessive mortar.
    - d. All rough edges shall be ground smooth.
    - e. Concrete masonry units shall be cleaned.
    - f. All surfaces shall be clean, dry, free of efflorescence, or other contaminants.

### 3.3 INSTALLATION

- A. General: Apply components of resinous coating system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface at the specified thickness.
  - 1. Coordinate application of components to provide optimum adhesion of resinous floor/wall system to substrate and intercoat adhesion.
  - 2. At substrate control, isolation, and expansion joints, provide joint as necessary in resinous flooring in compliance with manufacturer's directions and engineering details for each joint type.
    - a. Apply backer rod and elastomeric joint filler into isolation or expansion joints in compliance with manufacturer's directions.
- B. Installation of System:
  - 1. Primer/Filler Coat: Mix PC 630 components with a Jiffy Mixer for a minimum of two minutes, then apply one full coat at 12 mils to 16 mils on CMU. Allow to dry tack free.

2. Build Coat: Mix PC 200 fiberglass/Kevlar®-reinforced body coat with a Jiffy Mixer for a minimum of two minutes and apply to all previously primed surfaces with a 45:1 air-powered airless spray rig with gravity-fed hopper at and allow curing. Minimum thickness of 45 mils required on walls.
3. Final Finish/Glaze Coat: After build coat is fully cured, abrade all surfaces to remove any exposed fiberglass and other imperfections. Mix PC 400 with PC 499 Additive and apply to all surfaces, walls, ceilings and floors at a minimum of 8 mils to wall surfaces.

C. Manufacturer's Field Service:

1. Manufacturer shall send qualified technical representative to the Project site for the following purposes:
  - b. Coordinate schedule, environmental requirements, and pre-installation work with other trades.
  - c. Advise Installer's personnel of procedures and precautions for use of system materials.
  - d. Attend testing procedures with the Architect, the Owner's Representative, and the Installer.
  - e. Observe field mockups with the Architect, the Owner's Representative, and the Installer.
  - f. Ascertain that each component of the resinous system is being installed in accordance with manufacturer's directions.
  - g. Maintain a log of environmental conditions, work procedures, testing procedures, and protection measures to be included in job site file submittal.
  - h. Manufacturer's representative shall be on site throughout the entire product installation including all of the above, all surface preparation, and product installation.

3.4 CURING

- A. Cure resinous wall components according to manufacturer's written instructions. Prevent contamination during curing processes.
  1. Temperatures shall be maintained at 70 degrees F to 80 degrees F.
  2. Water leaks shall be prevented as they will compromise epoxy components ability to set properly. Water drips may compromise or stain finishes.
  3. Steam or any airborne contamination will adversely affect curing.

3.5 CLEANING

- A. Work area shall be left clean with all trash, equipment, and leftovers removed.

- B. Walls shall be cleaned prior to final inspection, providing complete curing has taken place. Refer to product data sheets for curing information for each product. Generally, non-chlorinated detergents should be used for the first month after curing is complete.
- C. For optimum coating performance and cleanability, manufacturer recommends the use of liquid soaps to prevent caking on epoxy surfaces caused by bar soaps.

### 3.6 PROTECTION

- A. Protect system from damage and wear during construction. Comply with manufacturer's recommendations for protective materials and their method of application. Remove temporary protection prior to final inspection. Contractor work shall take extra care in protecting the system with impact resistant, and if necessary, flame resistant coverings. Remove temporary or protective material upon project completion.

**END OF SECTION**



PAINING

SECTION 09 91 00

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Surface preparation.
- B. Painting schedules, including painting of exposed surfaces, except as otherwise specified or indicated.

1.2 REFERENCES

- A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. Referenced Standards, Manuals and Codes:
  - 1. ASTM D523 – Standard Test Method for Specular Gloss.
  - 2. The Master Painters Institute, MPI Gloss and Sheen Levels.

1.3 QUALITY ASSURANCE

- A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with sufficient documented experience.
- B. Applicator: Company specializing in commercial painting and finishing with sufficient documented experience.
- C. Gloss Levels: Per Master Painters Institute (MPI) gloss standards "MPI Gloss and Sheen Levels," measured in accordance with ASTM D523.

GLOSS LEVEL	DESCRIPTION	GLOSS AT 60 DEGREES ASTM D523	SHEEN AT 85 DEGREES ASTM D523
G1	A traditional matte finish – flat.	5 units, maximum	and 10 units, maximum
G2	A high side sheen flat - "a velvet-like" finish.	10 units, maximum	and 10 - 35 units
G3	A traditional "eggshell-like" finish.	10 - 25 units	and 10 - 35 units
G4	A "satin-like" finish.	20 - 35 units	and 35 units, minimum
G5	A traditional semi-gloss.	35 - 70 units	-
G6	A traditional gloss.	70 - 85 units	-
G7	A high gloss.	More than 85 units	-

1.4 REGULATORY REQUIREMENTS

- A. Conform to CBC for flame spread and smoke density requirements for finishes.

- B. Furnish certification that all paint coatings furnished for the location of the project comply with the EPA clean air act for permissible levels of volatile organic content for architectural coatings applied in California as designated by California Air Resources Board (CARB).

#### 1.5 SUBMITTALS

- A. Provide product data on all finishing products.
- B. Submit four brush-out samples 8 inches by 10 inches in size illustrating color selected for each surface finishing product scheduled.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in manufacturer's original unopened, labeled containers; inspect to verify acceptance.
- B. Store and protect products from abuse and contamination.
- C. Container labeling is to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation and instructions for mixing and reducing.
- D. Store paint materials at minimum ambient temperature of 50 degrees F and a maximum of 90 degrees F, in well-ventilated area, unless required otherwise by manufacturer's instructions.
- E. Take precautionary measures to prevent fire hazards and spontaneous combustion.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 50 degrees F for 24 hours before, during and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.
- C. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior work and interior work, unless required otherwise by manufacturer's instructions.
- D. Provide lighting level of 80 foot candles measured mid-height at substrate surface.

#### 1.8 EXTRA STOCK

- A. Provide a new and unopened one-gallon container of each type, color and sheen to County.
- B. Label each container with color, in addition to the manufacturer's label.

## PART 2- PRODUCTS

### 2.1 PAINT SYSTEMS, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

2.2 ACCEPTABLE MANUFACTURERS – PAINT

- A. Refer to Table at the end of this Section.
- B. Or accepted equal.

2.3 ACCEPTABLE MANUFACTURERS – PRIMER SEALERS

- A. Refer to Table at the end of this Section.
- B. Or accepted equal.

2.4 MATERIALS

- A. All paint materials shall be provided from a single manufacturer unless noted otherwise in this Section.
- B. Coatings: Ready mixed. Process pigments to a soft paste consistency capable of being readily and uniformly dispersed to a homogeneous coating.
- C. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.
- D. Accessory Materials: All other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.5 FINISHES

- A. Refer to schedule at end of Section for surface finish schedule. Refer to Drawings for color schedule.

**PART 3- EXECUTION**

3.1 INSPECTION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
  1. Gypsum Wallboard: 18 percent.

2. Concrete Masonry Units: 10 percent.

D. Beginning of application constitutes acceptance of existing surfaces.

### 3.2 PREPARATION

A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or painting.

B. Correct minor defects and clean surfaces that affect work of this Section.

C. Seal marks that may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

E. Gypsum Board Surfaces: Latex fill minor defects. Spot-prime defects after repair.

F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer, unless otherwise recommended by finish coating system manufacturer.

G. Shop-Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces as recommended by primer manufacturer. Prime shop-primed steel items with steel primers specified in this Section.

### 3.3 PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by work of this Section.

C. Furnish drop cloths, shields and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. Remove empty paint containers from site.

### 3.4 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

1. Paint mil thicknesses shall not be less than the minimums recommended by the paint manufacturers.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform finish.

D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.

E. Sand lightly between coats to achieve required finish.

F. Allow applied coat to dry before next coat is applied.

### 3.5 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Paint interior surfaces of air ducts and convector heating cabinets that are visible through grilles and louvers with one) coat of flat black paint, to limit of sight line. Paint dampers exposed behind grilles to match face panels. Paint all new interior and exterior exposed ductwork and ductwork supports. Paint all new conduit, pipes and conduit/pipe supports in exposed interior and exterior locations.
- B. Reinstall electrical plates, hardware, light fixture trim, and fittings removed for surface preparation or painting.
- C. Do not paint factory-finished mechanical and electrical equipment.

### 3.6 CLEANING

- A. As Work proceeds, promptly remove paint where spilled, splashed or spattered.
- B. During progress of Work, maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove from site daily.

### 3.7 PAINTING SYSTEMS

- A. Interior Work: Provide the following paint systems:
  - 1. Gypsum Board – Eggshell sheen.
    - a. One coat “Hamilton Prep-Coat Plus” prior to application of gypsum board texture (masking by others).
    - b. One coat PVA primer.
    - c. Two coats acrylic latex.
  - 2. Steel – Primed: Semigloss sheen.
    - a. One additional coat of rust inhibitive primer.
    - b. Two coats acrylic latex enamel, semi-gloss.
  - 3. Masonry:
    - a. One coat block filler primer.
    - b. Two coats Waterborne Semi-Gloss Epoxy Paint.
- B. Sheens: Comply with ASTM D523, reflectance of paint.
  - 1. Flat: 1-10.
  - 2. Satin: 15-30.
  - 3. Eggshell: 30-45.
  - 4. Semigloss: 45-75.
  - 5. Gloss: 75-100

APPLICATION	TYPE	MPI Gloss Level	Dunn Edwards	Glidden Professional /Devoe	Sherwin Williams	Kelly Moore
<b>PRIMERS</b>						
Interior Gypsum Board	PVA	G1	W101	1030	B28W400	971
Concrete and Masonry	Epoxy/Acrylic	G1	ESPR00-1			
<b>FINISHES</b>						
Interior Gypsum Board, Ferrous Metal, and Galvanized Metal	Latex Enamel	G5	SPMA50	1406	B31W251	1650
Interior Masonry	Waterborne Epoxy	G5		WB4406	B70W211 and B60V25	7100

**END OF SECTION**

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SECTION 10 21 13.19

SOLID PLASTIC SHOWER PARTITIONS AND DOORS

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**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Solid plastic shower stalls with modesty doors, floor supported.

1.2 REFERENCES

- A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only. Refer to Section 01 42 00 "References" for definitions, acronyms, and abbreviations.
- B. Unless otherwise noted, standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Project Manual.
- C. Referenced Standards:
  - 1. ANSI A117.1 – Guidelines for Accessible and Usable Buildings and Facilities.
  - 2. ASTM A666 – Standard Specification Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.
  - 3. ASTM B221 – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
  - 4. ASTM D635 – Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
  - 5. ASTM D1929 – Standard Test Method for Determining Ignition Temperature of Plastics.
  - 6. ASTM D2843 – Standard Test Method for Density of Smoke From the Burning or Decomposition of Plastic.

1.3 SUBMITTALS

- A. Samples:
  - 1. Furnish a 1" x 4" sample of compartment material showing color face and finished edges.
  - 2. Furnish one each of stainless steel fasteners, door hardware, mounting hardware and aluminum headrail, as applicable.
- B. Shop Drawings:
  - 1. Provide four copies of all shop drawings.

2. Show fabrication and erection of assemblies, to extent not fully described by manufacturer's data sheets.
  3. Show anchorage, accessory items and finishes.
  4. Provide location drawings for bolt hole locations in supporting members for attachment of partitions.
- C. Manufacturer's Data:
1. Provide four copies each of:
    - a. Data sheets.
    - b. Installation instructions.
    - c. Maintenance procedures.
- D. Mock-up
1. Provide mock up of door and pilaster assemblies showing all hardware proposed for use on this installation.
- 1.4 DELIVERY, STORAGE AND HANDLING
- A. Deliver items in manufacturer's original unopened protective packaging.
  - B. Store materials in original protective packaging to prevent soiling, physical damage, or wetting.
  - C. Handle so as to prevent damage to finished surfaces.
- 1.5 REGULATORY REQUIREMENTS
- A. Comply with Title 24 CCR, ADAAG, and ANSI A117.1.
  - B. Fire Performance Test:
    1. Smoke Density: (ASTM D2843): Less than 75.
    2. Self-ignition Temperature (ASTM D1929): Minimum 650 degrees F.
    3. Rate of Burn (ASTM D635): No more than 2.0 cm/min.
- 1.6 FIELD MEASUREMENTS
- A. Verify that field measurements are as indicated on shop drawings.
- 1.7 COORDINATION
- A. Coordinate placement of backing in walls. Backing by others.



1.8 WARRANTY

- A. Manufacturer shall supply a written warranty covering all plastic components for a period of 15 years from the date of Final Completion.

**PART 2 PRODUCTS**

2.1 MANUFACTURERS AND PRODUCTS

- A. Acceptable Manufacturers and Products:
1. Santana/Comtec/Capital (Scranton Products); Product: Floor mounted with full-height pilasters.
  2. Partition Systems Incorporated of South Carolina (PSISC).
  3. Or accepted equal.

2.2 COMPONENTS:

- A. Components shall be fabricated from high-density polyethylene (HDPE) containing a minimum of 10 percent recycled material manufactured under high pressure forming a single component section which is waterproof, nonabsorbent and that has a self-lubricating surface. Components shall be a minimum of 1" thick and all edges machined to a radius of 0.250" and all exposed surfaces shall be free of saw marks.
- B. Pilasters, doors, and panels shall meet the requirements of ASTM D2843 and D1929. Color: Bronze; Hammered.
1. Panel and modesty door sizes shall be as shown on the drawings.
  2. Pilasters shall be custom length full height and fastened to a 3 inch high stainless steel pilaster shoe (Type 304, 20 gauge) with a stainless steel, tamper resistant torx head sex bolt.
- C. Brackets: Continuous aluminum bracket Type 6436-T5 (ASTM B221) weighing not less than 1.5 pounds per linear foot; bright dip anodized finish.
- D. Hinges: Self-closing continuous aluminum bracket Type 6463-T5 (ASTM B221) with bright dip anodized finish. Door closers shall be factory set to accommodate all conditions and allow for a positive opening and closing action free of impediment.
- E. Strike: 6" long Aluminum Type 6463-T5 (ASTM B221); bright dip anodized finish; wrap around flanges – minimum 5/32 inch wall thickness; bumper shall be made of extruded black vinyl.
- F. Bolts, nuts, fasteners: Type 304 stainless steel, tamper-proof type.
- G. Accessible stall doors shall be self-closing and shall have ADA and CBC compliant door pulls.
- H. Latch: No latches shall be included.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Verify that site conditions are ready to receive work and opening dimensions are as instructed by the manufacturer.
- B. Verify correct spacing of plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage and bracing, where required.
- D. Beginning of installation means acceptance of existing substrate.

#### **3.2 INSTALLATION**

- A. Install partitions secure, plumb, and level in accordance with manufacturers' instructions.
- B. Maintain 3/8" to 1/2" space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to bracket with tamper-proof bolts and nuts.
- E. Secure all elements rigidly in place. Anchor to structure with anchors appropriate for use with type of adjacent construction. Fasteners shall securely fasten items to wall construction involved. Fasteners shall provide stiffness and rigidity to keep items square, in accurate position without twisting, buckling or warping. Fasteners to framing substrate shall be the following minimums; greater as required by the toilet partition manufacturer or as conditions warrant:
  - 1. Masonry: #14 corrosion resistant screws 2-1/2" long with expansion shields.
- F. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster. Conceal floor fastenings with pilaster shoes.
- G. Equip each door with one continuous hinge.
- H. Install door strike with door bumper on each pilaster.
- I. Adjust hinges to locate doors in closed position.

#### **3.3 ADJUSTING**

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16".

#### **3.4 CLEANING**

- A. Remove protective masking. Clean surfaces.
- B. Field touch-up of scratches or damaged finish will not be permitted.
- C. Replace damaged or scratched materials with new materials.

**END OF SECTION**

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DETENTION FURNISHINGS

SECTION 12 55 00

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**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Wall mounted mirrors.
- B. Security grab bars.
- C. Floor mount benches.
- D. Towel hooks.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate fabrication, materials, installation details, finishes, and required anchoring, fasteners, and hardware for each product specified in this Section.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Store in manufacturer's original unopened containers and packaging. Protect from damage. Handle products to prevent damage to products or finishes.

**PART 2 - PRODUCTS**

2.1 WALL MOUNTED MIRRORS

- A. Norix; cell mirror, Ironman Series
  - 1. Overall Size:
    - a. 11 ¼ inches wide x 17 ¼ inches high.
  - 2. Materials: 18 gauge Type 430 stainless steel with #8 finish; mirror surface highly polished.
  - 3. Provide countersunk holes for tamper resistant stainless steel fasteners.

2.2 SECURITY GRAB BARS

- A. Norix Group Inc., security grab bars, Model No. IGS grab bars. See drawings for sizes and locations.
  - 1. Flanges: 11 gauge, 3-1/8 inch diameter, Type 304 (18-8) stainless steel with #4 brushed finish.
  - 2. Tubing: 18 gauge, 1-1/2 inch outside diameter, seamless Type 304 (18-8) stainless steel with #4 brushed finish. Bent ends of tubing pass through

the flanges and shall be heliarc welded into a single structural unit for maximum strength. Intermediate supports shall be contour cut and joined by heliarc welding to form an integral part of the grab bar. All welds shall be ground and polished to blend. Fabricate using mandrel bending process to maintain uniform bar diameter. Returns shall provide 1-1/2 inch minimum clearance between wall and bar.

3. Closure Plate: 11 gauge, Type 304 (18-8) stainless steel with #4 brushed finish, heliarc welded to edge between tube and wall.
4. Fasteners: Stainless steel, torx-head mounting screws.

### 2.3 TOWEL HOOKS

- A. Norix Group Inc., Model No. ITS-410 4 strip front mount towel hooks.
- B. Fabrication and Materials:
  1. Backplate: 14 gauge Type 304 stainless steel with brushed satin finish, 5-1/2" high x 18" long.
  2. Safety Hooks: Cast and machined Type 304 stainless steel with stainless steel ball and spring with brushed satin finish.

### 2.4 FOLDING SHOWER SEAT

- A. Norix Group Inc.
  1. Model No. ISS-200, Recessed ADA Shower Seat Assembly
- B. Fabrication and Material
  1. Cut, formed and welded steel and stainless steel frame to fit wall opening, with 1.25 cm diameter solid stainless steel hinge.

### 2.5 TOILET PAPER HOLDER

- A. White Hall Manufacturing
  1. Model No. WH1845B
- B. Fabrication and Material:
  1. Stainless Steel, Ligature resistant spindle button, semi recessed toilet paper holder.

## PART 3- EXECUTION

### 3.1 INSTALLATION

- A. All products and materials specified in this Section shall be installed according to manufacturer's instructions and as detailed on the Drawings.

3.2 ADJUST AND CLEAN

- A. Clean and Touch-up: Remove all packing and protection blemishes and thoroughly clean and polish all finish surfaces. Restore any marred or abraded surfaces to their original condition by touching up in accordance with the manufacturer's recommendations. Touch-up shall not be obvious.
- B. Defective work: Remove and replace all defective work which cannot be properly repaired, cleaned or touched up, as directed by Architect, with no additional cost.
- C. Protect installed work during the construction period to prevent abuse and damage.

**END OF SECTION**

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PLUMBING  
SECTION 22 00 00

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**PART 1 – GENERAL**

1.1 INCLUDED

- A. This Specification establishes the required standards for all labor, materials, equipment, and workmanship in connection with the furnishing, fabrication, and installation of "Plumbing." Plumbing work includes, but is not limited to, the following items of work:
1. Cold and hot water distribution piping systems, complete, from points of contact with site domestic water systems (located approximately as indicated on the Drawings) to all plumbing fixtures, mechanical equipment, building specialties, and Owner supplied equipment scheduled for service on the Drawings.
  2. Hot water distribution system, complete, from serving water heaters and/or points of contact with site domestic hot water, to all plumbing fixtures, mechanical equipment, building specialties, and Owner supplied equipment schedule for service on the Drawings.
  3. Testing and adjusting of all piping systems and equipment herein specified.
  4. Sterilization of domestic water systems.
  5. Pipe wrapping and insulation.

1.2 LICENSES, PERMITS, AND FEES

- A. The Contractor shall provide, procure, and pay for all licenses, permits, fees, etc. as required to carry on and complete their work.

1.3 CODES AND STANDARDS

- A. All work shall be done in code with all applicable local, state, and federal building safety codes, ordinances, and regulations. Additionally, all work shall conform to the latest editions of the following standards:
1. National Fire Protection Association.
  2. California Mechanical Code.
  3. California Plumbing Code.
  4. Underwriters Laboratories.
  5. Titles 8, 17, 19, 21, 24 of the California Code of Regulations.
  6. California Electric Code.
- B. When the Contract Documents call for materials or construction of a higher standard than is required by the above, the Contract Document requirements shall take precedence over the requirements of the applicable laws, ordinances,

rules, or regulations. Nothing in the Contract Documents shall be interpreted as permitting work in violation of said laws, rules, and/or regulations.

- C. The Contractor for this work shall furnish, without extra charge, any additional materials and/or labor as may be required for compliance with these laws, rules, and/or regulations though such materials and/or labor are not specially set forth in the Contract Documents.

### 1.3 SUBMITTALS

- A. All fixtures, materials, and equipment equal in quality and utility to these herein mentioned will be accepted. When specific names are used in describing fixtures, materials, and equipment they are mentioned as standards only, but this implies no right on the part of the Contractor to use other fixtures, material, and equipment or methods, unless approved as equal in quality and utility by the Project Engineer.
- B. Before any fixtures, materials, or equipment are purchased, the Contractor shall submit to the Project Engineer for approval, a complete list of materials, fixtures, and equipment, giving the manufacturer's names, model numbers, and catalog sheets.
- C. The Contractor shall submit for the approval of the Project Engineer, shop drawings of proposed material and equipment that differ from the specified materials and equipment, and of any specified materials and equipment with special conditions and/or arrangements. These drawings shall show necessary modifications of owner, plumbing, electrical, and mechanical work required by the proposed materials and equipment.
- D. Submittal lists and drawings shall include identifying marks assigned by the Drawings and Specifications.
- E. Review of drawings and other material submitted shall not be construed as complete check or constitute a waiver of the requirements of the Drawings and Specifications, but will indicate that the material submitted is acceptable in quality and utility. This review shall not relieve the Contractor of the responsibility to fit the proposed materials to the spaces provided, and to effect necessary rearrangements or construction of other work.

### 1.4 COOPERATION WITH OTHER TRADES

- A. Cooperate fully with other trades doing work on the project as may be necessary for the proper completion of the project. Refer to the Structural, Mechanical, and Electrical Drawings for details of the building structure and equipment installation that will tend to overlap, conflict with or require coordination with the work of this Section, and schedule this work accordingly.
- B. Any work done without regard for other trades shall be moved, replaced, or redone as required, without extra charges to Owner.

### 1.5 AS-BUILT DRAWINGS

- A. A complete set of Contract Drawings shall be maintained at the work site, and all changes in the work shall be recorded on this set, on a daily basis. The final as-built drawings shall be submitted to the Owner's Representative for approval.



1.6 DRAWINGS

- A. The drawings indicate diagrammatically the general layout of the plumbing systems and other related work. Field verification of scaled dimensions taken from the Drawings is required.
- B. The Contractor shall review and compare the Plumbing and Electrical Drawings, equipment submittals and adjust their work to be in conformity with the conditions indicated thereon. Discrepancies between drawings, between drawings and actual field conditions, or between Drawings and Specifications, shall promptly be brought to the attention of the Project Engineer for a determination of the modifications to be effected. In the event that a major modification is required, a Change Order will be prepared.

1.7 VERIFICATION OF EXISTING CONDITIONS AND DEMOLITION

- A. Before installation of any new work, verify the location, size, and other conditions at all points of connection to services or other existing piping, and at all locations where new work will cross or pass near existing piping, electrical, or other facilities.
- B. Patch, cap, or repair existing works affected by this demolition in concealed spaces within six (6) inches of a live main or branch.
- C. Deliver removed material to the Owner as directed by the Project Engineer. Dispose of all other removed material offsite.
- D. Information shown relative to existing services is based upon available records and data during preparation of the Drawings, but shall be verified. Make reasonable deviations found necessary to conform to actual locations and conditions, without extra charge.
- E. The data given herein and on the Drawings are as exact as could be reasonably secured, but absolute accuracy is not guaranteed. Exact locations, distances, elevations, etc. will be governed by shop drawings, the building itself, and actual field conditions.

1.8 DAMAGE BY LEAKS

- A. Contractor shall be responsible for any damage to work of other Contractors that is caused by leaks in any temporary or permanent piping systems due to pipe rupture, disconnected pipes or fittings, or by overflow of equipment.

1.9 SEISMIC FORCE RESISTANCE: MECHANICAL, PLUMBING, FIRE PROTECTION SYSTEMS

- A. All mechanical systems and plumbing piping systems shall adhere to the SMACNA "Seismic Restraint Manual: Guidelines for Mechanical Systems," Third Edition, dated March 2008.

1.10 STANDARD WARRANTY

- A. Equipment manufacturer agrees to replace, at no additional cost to the Owner, any components that fail in materials or workmanship during the time period of (a) one year from startup or (b) 18 months from shipping date, whichever is earlier.

- B. Installing contractor shall provide all labor necessary for warranty work during the first year of operation.

#### 1.11 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall be responsible for delivery, storage, protection, and placing of all equipment and materials.
  - 1. Contractor shall protect the work and materials from damage during construction. Equipment stored at the job site shall be protected from dust, water, or other damage, and be covered if equipment is exposed to weather. Protect interiors of new equipment and piping systems against entry of foreign matter. Clean both inside and outside before painting or placing equipment in operation.
  - 2. Any items damaged shall be repaired or replaced, at no additional cost to the Owner.
- B. Cleanliness of Piping and Equipment Systems
  - 1. Exercise care in storage and handling of equipment and piping material to be incorporated in the work. Remove debris arising from cutting, threading, and welding of piping.
  - 2. Piping systems shall be flushed or blown as necessary to deliver clean systems.
  - 3. Contractor shall be fully responsible for all costs, damage, and delay arising from failure to provide clean systems.

#### 1.12 LICENSING REQUIREMENTS

- A. All plumbing systems shall be installed by a C-36 Plumbing Contractor. Plumbing systems include: waste removal and connection of on-site waste disposal systems; piping, storage tanks, and venting for supply of gases and liquids for any purpose; all gas appliances, flues, and gas connections; water and gas piping from the Owner's side of utility meter to the structure or fixed works, installation of any type of equipment to heat water or fluids to a suitable temperature; and maintenance and replacement of the items described above, including health and safety devices.
- B. All hydronic piping systems shall be installed by a C-4 – Boiler, Hot Water Heating and Steam Fitting Contractor.
- C. All plumbing and hydronic piping insulation shall be performed by a C-2 – Insulation and Acoustical Contractor.

#### 1.13 WARRANTIES

- A. Equipment warranties shall be provided for all equipment, with all necessary information filled in, except purchase date, in favor of the Owner.
- B. The contractor shall guarantee that all work under this Section is free from defects in material and workmanship for a period of one year from the date of filing the Notice of Completion. Replacement of defective work and damage

caused to work of other trades as a result of such defective work shall be the responsibility of the Contractor, and shall be made at no cost to the Owner.

## **PART 2 – PRODUCTS**

### **2.1 GENERAL**

- A. Only specified material shall be utilized in the work of this Section unless substitutions have been approved in accordance with the General Conditions and Division 1 Sections of the Specifications.
- B. All materials shall be new and unused, of the best quality for the intended use, and shall be listed by the ASA, AGA, and UL as meeting their requirements and bearing their label wherever standards have been established and label services are regularly furnished by them.

### **2.2 PIPE AND FITTINGS**

- A. Cold and Hot Water Piping
  - 1. All domestic cold water piping 3" and smaller shall be Type L, hard temper, copper pipe with wrought copper or cast brass solder joint fittings. All joints shall be made up with "Stay-Safe 50" lead free solder. A suitable non-corrosive flux shall be used at all joints.
  - 2. Pipes below grade inside buildings shall be soft drawn, Type L or K copper with no joints below slabs. Pipes shall be sleeved with 20-mil plastic sheathing.
- B. Sanitary Soil, Waste, and Vent Piping:
  - 1. Lines 2" and larger shall be service weight, hub-less cast iron soil pipe and fittings, and shall conform to the requirements of ASTM A 888 and CISPI Standard 301. Approved manufacturers: Charlotte, Tyler, or AB&I.
  - 2. Joints: Couplings shall conform to the requirements of ASTM C1540 and shall be heavy duty type 304 stainless steel shielded, having 4 sealing clamps for pipe sizes 1 ½" thru 4", and 6 sealing clamps for pipe sizes 5" thru 10". Gaskets shall comply with ASTM C-564. Anaco, Tyler, or equal.

### **2.3 VALVES, SPECIALTIES**

- A. Ball Valves: Nibco T/S-585-70, bronze body, reinforced PTFE seat ring, full port, two piece, lever handle, 125 lb, threaded or soldered end connections. Substitutions are not acceptable. Jail maintenance personnel keep Nibco valves in stock. New valves must match existing valves used in system.
- B. Check Valves, Horizontal: Nibco T/S-413, bronze body, swing check valve, y-pattern design, renewable Buna-N seat disc, 125 lb, threaded or soldered end connections. Substitutions are not acceptable. Jail maintenance personnel keep Nibco valves in stock. New valves must match existing valves used in system.

- C. Check Valves, Vertical: NIBCO T/S-480, bronze body, inline lift type, Teflon seat, and discs, spring actuated 125 lb. SWP. Substitutions are not acceptable. Jail maintenance personnel keep Nibco valves in stock. New valves must match existing valves used in system.
- D. Gate Valves: 3" and smaller shall be NIBCO T/S-134, bronze body, union bonnet, rising stem, solid wedge, 150 lb. with wheel handle. Substitutions are not acceptable. Jail maintenance personnel keep Nibco valves in stock. New valves must match existing valves used in system.
- E. Relief Valves: Water heater temperature/pressure relief valve, Watts, M&M, or equal with ASME rating, and AGA certified design. Set at 125 psi and 210°F.
- F. Air Eliminators: Air vents shall be installed at all high points in all water piping systems.
  - 1. Automatic air vents: Bell & Gossett Number 400, float type, brass construction, 1/8" NPT connection or approved Armstrong equivalent.
  - 2. Manual air vents: 1 inch IPS x 2 inches long air chambers with readily accessible Done No. 10 vent valve and 1/8 inch copper tubing.
- G. Balance Valves: Bell and Gossett Circuit Setter Plus or approved Armstrong equivalent. Lead-free brass design, manual balance valve,
- H. All valves, except pressure reducing and control valves, shall be the same size as the pipe to which they are installed.
- I. Provide a union immediately downstream from each valve, unless the valve is flanged.
- J. All valves shall be installed with the stem 45 degrees above horizontal, if possible. In no case shall the stem be installed below horizontal.

#### 2.4 PIPE INSULATION

- A. Insulate all domestic hot water supply and return piping with Manville "Micro-Lok" 650, Knauf, Certainteed, or equal, rigid fiberglass one-piece pipe insulation with and all-purpose jacket. Jackets shall be constructed of high density, white kraft bonded to aluminum foil with fiberglass yarn, with a pressure sensitive closure system.
- B. Fittings shall be covered with Knauf Proto Fittings or Johns Manville "Zeston 2000 Series," insulated PVC fitting covers.
- C. All insulation shall have composite (insulation, jacket, and adhesive used to adhere the jacket to the insulation) Fire and Smoke Hazard ratings as tested under procedure ASTM E-84, NFPA 255 or UL 723, not exceeding: Flame Spread – 25, Smoke Developed – 50.
- D. Inserts shall be installed at outside hangers. Inserts between the pipe and pipe hangers shall consist of rigid pipe insulation of thickness equal to the adjoining insulation. Inserts shall not be less than 10" long for pipe sizes through 2 1/2" and not less than 12" long for pipes larger than 2 1/2".

- E. Metal shields shall be applied between hangers or supports and the pipe insulation. Shields shall be formed to fit the insulation and shall extend up to the centerline of the pipe and the length specified for hanger inserts.
- F. Insulation thickness shall be as follows:
  - 1. Piping less than 1" diameter: 1"
  - 2. Piping greater than 1" diameter: 1 ½"

2.5 UNIONS

- A. Steel Pipe: Malleable iron, 150 lb., ground joint, Anvil Fig 463, Bonney Forge or approved equal.
- B. Copper Pipe: Soldered joint, NIBCO Series 633 or 733, Mueller, or approved equal.
- C. Dielectric: EPCO, Watts, or approved equal.

2.6 HANGERS, SUPPORTS

- A. Installation of piping shall be such that damage cannot result through loading, expansion, or contraction of piping. Anchors shall be installed to obtain uniformity of pipe movement.
- B. Pipe supports shall be spaced sufficiently close to support pipes properly without formation of pockets. Hangers shall be installed at ends of mains and branches and maximum intermediate spacing shall be as follows:

	MAXIMUM SPACING, (FT.)		MINIMUM ROD DIAMETER	
	Pipe Diameter, Inches		Pipe Dia.	Rod Dia.
	1" & Less	1-1/4" & More	Inches	Inches
Steel	8	10	2 & Less	3/8
Copper	6	8	2-1/2 to 3	1/2
Cast Iron	5 (One min. per length & fitting)		4 & Larger	5/8

- C. Pipe hangers shall be Superstrut, B-Line, or equivalent Grinnell. All hangers shall be electro-chromate finished. Hanger rods shall have electro-galvanized finish.
- D. Steel pipe, cast iron soil pipe: C-711 pipe hangers.
- E. Copper tubing: C-711 pipe hanger complete with C-716 isolator.
- F. Insulated pipe: C-711 pipe hanger fitted to outside of insulation with C-790 galvanized shields.
- G. Trapeze Hangers
  - 1. Grouped pipes may be supported by A-1200 channel bolted to rods.
  - 2. Copper and steel pipe shall be attached to channels with A-716 "Cush-A-Clamp."
- H. Cast iron soil pipe shall be supported with C-711 pipe hangers with rods attached to the bottom of channels.

- I. Vertical pipes risers shall be securely supported with C-720 pipe clamps (C-720P for bare cold water pipe) anchored to construction.
- J. Provide resilient mounting for domestic water piping. Thermal insulation may serve as resilient mounting for insulated piping.
- K. Suspended water piping shall be anchored with steel struts installed at midpoint of each run.
- L. No valve or piece of equipment shall be used to support piping.

## 2.7 PIPE LABELS

- A. All new domestic cold water, hot water, and hot water recirculation piping shall be clearly labelled.
- B. Industrial safety solutions piping labels shall be rated for indoor and outdoor use and be attached with permanent adhesive.
- C. Labels shall show the direction of flow and indicate the process media. Pipe labeling color and text size shall conform to ANSI/ASME A13.1-2007. Process piping shall be labeled a minimum of twice per room in locations designated by the Engineer.

## 2.8 FIXTURES

- A. The quantity and location of fixtures shall be taken from the Architectural and Plumbing Drawings. Provide adequate supports and all standard trim normally furnished for fixtures. All enamel shall be acid resisting. Traps, unless otherwise noted shall be 17 gauge brass tubing, chrome plated when exposed.
- B. Except as otherwise shown, provide ¼" steel backing plates, 36" wide by 12" high minimum size, secured to a minimum of three studs by welding, or with ¼" x 2 ½" lag screws for all wall hung fixtures for which no other means of support is specified.
- C. Stops and supplies: Provide stops for all fixtures. Unless otherwise specified, stops exposed at lavatories and similar fixtures shall be Chicago #1016-ABCP, chrome plated, loose key. Concealed stops shall be Chicago #1771.
- D. All fixtures shall meet or exceed the requirements of the California Administrative Code, Title 24, Part 5.

## PART 3 – EXECUTION

### 3.1 SURFACE CONDITIONS

- A. This Contractor shall be held to have examined the site and compared it with the Contract Documents, and to adequately understand the conditions under which the work is to be performed. In the event of discrepancy, this Contractor shall notify the Project Engineer and proceed as directed. This Contractor shall be held responsible for all existing conditions, whether or not accurately described, and no allowance shall subsequently be made on his behalf for any error,

omission, or extra expense due to failure or neglect to make such examination and notification.

- B. Prior to commencing the work of this Section, this Contractor shall inspect the installed work of other trades and verify that their work is sufficiently complete to permit the start of work under this Section and that the completed work will be in complete accordance with the original design. In the event of discrepancy immediately notify the Project Engineer and proceed as directed.

### 3.2 ACCESSIBILITY

- A. Equipment shall be placed and piping connections made in such a manner that all routine adjustments and maintenance operations may be carried out without inconvenience and so that all code requirements for clearances are maintained.

### 3.3 VIBRATION AND SOUND CONTROL

- A. Make all necessary provisions to prevent the transmission of vibration to the building structure, including flexible pipe connections to motor driven equipment, resilient mounting for piping, and sealing off pipe and duct penetrations of walls and roof.

### 3.4 INSULATION

- A. Insulation shall be applied in complete accordance with the manufacturer's published installation instructions. All insulation shall be applied on clean, dry surfaces and shall be continuous through wall and ceiling opening and sleeves. All joints shall be firmly butted together and longitudinal jacket laps and butt strips shall be smoothly secured. Specified adhesives, mastics, and coatings shall be applied at the manufacturer's recommended minimum coverage per gallon.

### 3.5 PIPING INSTALLATION – GENERAL

- A. Rough in shall proceed as rapidly as general construction will permit. All rough-in shall be complete, at locations verified by Architect and Owner, and tested and inspected prior to installation of concrete, lath, plaster, gypsum wallboard, or other finishes.
- B. All piping shall be concealed in finished rooms, installed in furred walls and partitions. Where furred or suspended ceilings occur, piping shall be installed in the concealed space at points adjacent to beams and/or other structural members, and coordinated with ductwork and equipment. Where exposed piping occurs, it shall be installed parallel to or at right angles to building walls, unless specifically shown otherwise on the Drawings.
- C. Installation of piping shall be such that damage cannot result, through thermal expansion or contraction, to piping, building, or pipe hangers and supports. Anchors shall be installed at midpoints of all runs in main piping for the purpose of localizing pipe expansion or prevention of creepage.
- D. All pipe lines shall be installed free from traps and air pockets, true to line and grade, with suitable supports properly space. All piping shall be installed without undue stresses and with provision for expansion and contraction.
- E. All piping shall be new and free from foreign substances. American standard pipe threads shall be used for IPS threaded work. Joints in threaded piping shall

be made up with Teflon tape applied to the male threads only. No screwed pipe joints shall be caulked or packed with rope or other packing materials. Pipe shall be free from tool marks, threads cut accurately with not more than two (2) threads showing beyond fitting. Friction wrenches shall not be used with plated, polished, or soft metal piping. All changes in pipe size shall be made with reducing fitting. Bushings will not be permitted.

- F. Protect unattended openings in piping during construction.
- G. No water or drainage piping shall pass over electrical equipment unless adequate protection is provided to prevent damage by leaks or condensation.
- H. All copper tubing shall be formed in a workmanlike manner, in accordance with the Pipe and Tube Bending Handbook of the Copper and Brass Research Association. A tube bender giving support to the periphery of the tube shall be used. The tubing shall be protected against flattening or other injury.
- I. All copper connections and joints shall be made in accordance with the Copper Tube Handbook, Copper and Brass Research Association. No swaged connections will be permitted. All valves, pumps, and similar equipment shall be connected to copper piping through union or flange adapter fittings.
- J. Valves, cocks, etc., shall be installed to allow convenient accessibility and operation.
- K. Unions and flanges shall be installed to allow convenient replacement of all equipment and clearing tubes.
- L. A union connection shall be installed downstream from all valves, at equipment connections and at other locations as required or directed.
- M. Shut off valves shall be provided in all main services, and where required to permit proper servicing of equipment. Valves of one type shall be of one manufacturer.
- N. All valves shall be of the same size as the pipelines in which they are installed, unless specifically sized on the Drawings. All hand controlled line valves shall be ball valves, except where throttling control or frequent operation is required, in which case globe or angle valves shall be used. Globe valves in horizontal lines shall be installed with stem in horizontal to permit line draining. All globe and angle valves shall be installed to close against pressure. Disc valves shall have discs suitable for the services for which they are to be used.
- O. All valves shall be accessible and shall not be installed with the stems below the horizontal plane. Provide access panels at walls, ceilings, or floors.
- P. Provide prime coated escutcheon plates at all points where exposed piping penetrates finished wall ceilings or floors.
- Q. Cutting or boring of joists or other structural members shall be done only when alternative routing is impossible and only upon written approval of the Architect or Owner.

### 3.6 INSTALLATION, PIPING

- A. Condensate Piping



1. Indirect waste piping shall be installed to a uniform minimum grade of  $\frac{1}{4}$ " per foot unless otherwise noted.
2. Changes in direction of indirect waste piping shall be accomplished by the use of appropriate drainage fittings.
3. Drilling and tapping of indirect waste pipes and the use of saddle hubs and bands are prohibited.

B. Flashing

1. All roof and wall penetrations shall be flashed and counterflashed water tight with 26 gauge sheet metal, except as noted.
2. Vents through roof shall be flashed with Semco #1100-4 lead flashing assemblies. Flashing shall extend over top of pipe and shall be turned down inside top of pipe.

C. Soil, Waste, Vent, Drain Piping

1. Soil, waste, and vent piping occurring within the building shall be installed to a uniform minimum grade of  $\frac{1}{4}$ " per foot unless otherwise noted. Vent piping shall be graded so that all condensation shall flow directly to a soil or waste line.
2. Changes in direction of drainage piping shall be accomplished by the use of appropriate drainage and sanitary fittings.
3. Protection against breakage of piping passing under or through walls shall be provided using specified sleeves and caulking.
4. Adapters shall be installed between threaded iron and soil pipe.
5. Test tees shall be installed at the foot of all soil, waste, and storm water stacks.
6. Cleanouts shall be located where indicated on the Drawings; at all horizontal offsets; at ends of waste or sewer branches more the 5' in length; at intervals of 100' in straight runs of piping, or at closer intervals if directed or required by local code. Location of cleanouts in finished spaces shall be approved by the Architect prior to installation.

D. Hot and Cold Water Systems

1. Di-electric unions shall be installed where copper pipe is connected to galvanized steel piping or stub outs.
2. Connections from copper pipe to fixture supply fittings shall be made with copper or brass nipples.
3. All domestic water piping shall be kept clear of the building structure. Where it is within 1" of the building structure, it shall be wrapped with felt ( $\frac{3}{16}$ " minimum thickness).

4. To the greatest extent possible, domestic cold water piping shall be kept separated from hot piping and where there is a choice shall be run in the coolest portion of the available space.

E. Plumbing Fixtures

1. Space between wall mounted fixtures and wall surface shall be neatly pointed up with silicone rubber compound of color matching fixture.
2. All exposed bolt heads and nuts used to secure fixtures shall be concealed with vitreous china caps.

3.7 INSTALLATION, HANGERS & SUPPORTS

- A. Installation of piping shall be such that damage cannot result through loading, expansion, or contraction of piping. Anchors shall be installed to obtain uniformity of pipe movement.
- B. Hanger rod sizes shall be no smaller than 3/8-inch for pipe and tube sizes 1/2 to 4 inches and 1/2 inch for sizes 5-8 inches.
- C. Pipe supports shall be spaced sufficiently close to support pipes properly without formation of pockets. Hangers shall be installed at ends of mains and branches. Maximum horizontal support spacing shall be as follows:
  1. Steel Pipe for Water or DWV: 10 feet for pipe sizes 3/4 inch and smaller and 12 feet for sizes 1 inch and larger.
  2. Steel and Tinned Copper Pipe for Gas: 6 feet for 1/2 inch pipe; 8 feet for sizes 3/4 to 1 inch, and 10 feet for sizes 1 1/4 inch and larger.
  3. Copper Tube and Pipe, soldered or brazed: 6 feet for pipe sizes 1 1/2 inches and smaller and 10 feet for sizes 2 inches and larger.
  4. Hubless Cast-Iron shall be supported at every other joint, unless over 4 feet, then support each joint. Support adjacent to joint, not to exceed 18 inches, brace at not more than 40 foot intervals to prevent horizontal movement. Support at each horizontal branch connection. Hangers shall not be placed on the coupling.
- D. Provide resilient mounting for domestic water piping. Thermal insulation may serve as resilient mounting for insulated piping.
- E. Suspended water piping shall be anchored with steel struts installed at midpoint of each run.
- F. No valve or piece of equipment shall be used to support piping.
- G. Pipes through studs or joists shall be isolated from structure with properly sized Hubbard "Hole-Rite" suspension clamps.

3.8 TESTING, INSPECTIONS

- A. General
  1. This Contractor shall not allow or cause any work of this Section to be covered or enclosed until it has been inspected, tested, and approved by

the Project Engineer and the authorities having jurisdictions over the work. Should any of this work be enclosed or covered up before such inspection, testing, and approval, this Contractor shall uncover the work, have the necessary inspections, tests, and approvals made and, at no expense to the Owner, make all repairs necessary to restore both his work and that of other contractors that may have been damaged, to be in conformity with the Contract Documents.

B. Tests

1. This Contractor shall make all tests required by all local, state, and federal laws, codes, ordinances, and regulations having jurisdiction over this work.
2. Furnish all necessary labor, materials, and equipment for conducting tests, and pay all expenses in connection therewith. Should leaks develop while testing, repairs shall be made, and tests shall be repeated until a satisfactory test is obtained.
3. Water Piping shall be hydrostatically tested for 6 hours at 150 psi. All equipment shall be tested water tight at utility pressure.
4. Drainage and Vent Piping shall be tested for 1 hour by plugging all outlets and filling the pipes with water to the top of vertical sections of pipes. No loss of water shall be permitted.

3.9 DOMESTIC WATER SYSTEM STERILIZATION

- A. Upon completion of this work, the domestic water system shall be thoroughly flushed, sterilized, and reflushed. Sterilization and reflushing shall be performed using the following procedure.
1. All work shall be performed in the presence of the inspector.
  2. Introduce chlorine or a solution of sodium hypochlorite, filling the lines slowly and supplying the sterilization agent at a rate of 50 parts of chlorine per million, as determined by residual chlorine tests at the ends of all branches. Open and close all valves while the system is being chlorinated to insure uniform distribution.
  3. After the sterilizing agent has been applied for 24 hours, test for residual chlorine at the ends of the branches. If less than 5 ppm is indicated, repeat the sterilization procedure.
  4. When tests show at least 5 ppm of residual chlorine, flush out the system until all traces of the chemical are removed.
- B. After a period of 48 hours minimum, bacteriological tests, using samples from at least 3 representative points shall be made by recognized testing agency, who shall certify to the Project Engineer that the system is bacteriologically safe and at least equal in safety to that of the principal water supply. The laboratory report and certification shall be transmitted to the Project Engineer and Owner.

3.10 ADJUSTING

- A. Properly adjust all stops, and controls, and demonstrate safe and satisfactory operation of all equipment.

3.11 CLEANING

- A. Flush all water piping systems. Remove, clean, and replace all strainer baskets prior to final inspection.
- B. Blow out all compressible fluid piping with compressed air before connecting with regulators or equipment.

3.12 CLEANUP

- A. Upon completion of the work of this Section, remove all surplus material, debris, and equipment associated with or used in the performance of this work.

**END OF SECTION**

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HVAC 23 00 00

SECTION 23 00 00

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**PART 1 – GENERAL**

1.1 INCLUDED

- A. This section covers mechanical work, complete. Work includes furnishing, installing, calibrating, adjusting, testing, documenting, and starting up equipment in accordance with these Specifications, the accompanying Plans, and the directions of the Engineer.

1.2 LICENSES, PERMITS, AND FEES

- A. The Contractor shall provide, procure, and pay for all licenses, permits, fees, etc. as required to carry on and complete their work.

1.3 CODES AND STANDARDS

- A. All work shall be done in code with all applicable local, state, and federal building safety codes, ordinances, and regulations. Additionally, all work shall conform to the latest editions of the following standards:

1. National Fire Protection Association.
2. California Mechanical Code.
3. California Plumbing Code.
4. Underwriters Laboratories.
5. Titles 8, 17, 19, 21, 24 of the California Code of Regulations.
6. California Electric Code.
7. SMACNA Standards.
8. ASHRAE Standards 55 and 62.1.

- B. When the Contract Documents call for materials or construction of a higher standard than is required by the above, the Contract Document requirements shall take precedence over the requirements of the applicable laws, ordinances, rules, or regulations. Nothing in the Contract Documents shall be interpreted as permitting work in violation of said laws, rules, and/or regulations.

- C. The Contractor for this work shall furnish, without extra charge, any additional materials and/or labor as may be required for compliance with these laws, rules, and/or regulations though such materials and/or labor are not specially set forth in the Contract Documents.

1.4 LICENSING REQUIREMENTS

- A. All work of Division 22 and 23 shall be performed by an appropriately licensed contractor. The licenses shall be current, valid through the term of the contract and in the name of the contractor.

1. All HVAC work, which includes warm air heating systems and water heating pumps, ventilating systems, air conditioning systems, and ductwork, registers, flues, humidity, and thermostatic controls in connection with these systems, shall be performed by a C-20 – Warm-Air Heating, Ventilating and Air-Conditioning Contractor.

2. All hydronic piping systems shall be performed by a C-4 – Boiler, Hot Water Heating and Steam Fitting Contractor.
3. All hydronic piping insulation shall be performed by a C-2 – Insulation and Acoustical Contractor.

#### 1.5 SUBMITTALS

##### A. General Requirements

1. Submittal lists and drawings shall include identifying marks assigned by the Drawings and Specifications.
2. Review of drawings and other material submitted shall not be construed as complete check or constitute a waiver of the requirements of the Drawings and Specifications, but will indicate that the material submitted is acceptable in quality and utility. This review shall not relieve the Contractor of the responsibility to fit the proposed materials to the spaces provided, and to effect necessary rearrangements or construction of other work.
3. All fixtures, materials, and equipment equal in quality and utility to these herein mentioned will be accepted. When specific names are used in describing fixtures, materials, and equipment they are mentioned as standards only, but this implies no right on the part of the Contractor to use other fixtures, material, and equipment or methods, unless approved as equal in quality and utility by the Architect.
4. Before any fixtures, materials, or equipment are purchased, the Contractor shall submit to the Architect for approval, a complete list of materials, fixtures, and equipment, giving the manufacturer's names, catalog number, capacity, size, power requirements, etc.
5. The Contractor shall submit for the approval of the Architect, shop drawings of proposed material and equipment that differ from the specified materials and equipment, and of any specified materials and equipment with special conditions and/or arrangements. These drawings shall show necessary modifications of owner, plumbing, electrical, and mechanical work required by the proposed materials and equipment.

##### B. Submittal – Product Data

1. Submit manufacturer's product data for all HVAC equipment, in compliance with specifications.

#### 1.6 COOPERATION WITH OTHER TRADES

- A. Cooperate fully with other trades doing work on the project as may be necessary for the proper completion of the project. Refer to the Structural, Plumbing, and Electrical Drawings for details of the building structure and equipment installation that will tend to overlap, conflict with or require coordination with the work of this Section, and schedule this work accordingly.
- B. Any work done without regard for other trades shall be moved, replaced, or redone as required, without extra charges to Owner.

#### 1.7 DIVISION OF WORK BETWEEN DIVISIONS 23 AND 26

- A. Close coordination between the electrical and mechanical trades is a part of the work that is required by this contract. No allowance will be made for omissions based on incorrectly assuming another trade will be performing your work. Confirm your scope of work with the general contractor.

- B. The division of responsibilities between trades supplying equipment in other Divisions may be different. For instance, Division 26 contractor may be required to supply disconnect switches and starters for non-HVAC mechanical equipment supplied under other Divisions.
- C. Division 23 Responsibilities
  - 1. Assume responsibility for the proper functioning of the HVAC systems in their entirety.
  - 2. Furnish and install all conductors and conduit required for control of HVAC equipment.
  - 3. Make all terminations with the exception of power conductors.
  - 4. Furnish and install all control panels and devices to provide a complete and functional controls system, including all controls transformers.
  - 5. Furnish and install motor starters for all equipment specified in Division 23.
  - 6. Install duct smoke detectors furnished by fire alarm contractor in buildings with fire alarm systems.
  - 7. Furnish and install duct smoke detectors in buildings without fire alarm systems.
  - 8. Furnish and install all control conductors and conduit connecting duct smoke detectors to smoke dampers and fan start controls.
  - 9. All electrical work performed under Division 23 shall conform to the requirements of Division 26.
- D. Division 26 Responsibilities
  - 1. Furnish and install all raceways, conduit, disconnect switches, and conductors necessary for electrical power supply.
  - 2. Make all power supply terminations to motors, starters, disconnect switches, control transformers, and other mechanical devices.
  - 3. Fire alarm contractor to furnish duct smoke detectors in buildings with fire alarm systems.
  - 4. Provide power to all duct smoke detectors and smoke dampers.
  - 5. Coordinate all work with mechanical contractors.

#### 1.8 AS-BUILT DRAWINGS

- A. A complete set of Contract Drawings shall be maintained at the work site, and all changes in the work shall be recorded on this set, on a daily basis. The final as-built drawings shall be submitted to the Architect for approval.

#### 1.9 DESIGN DRAWINGS

- A. The drawings indicate diagrammatically the general layout of the mechanical systems and other related work. Field verification of scaled dimensions taken from the Drawings is required.
- B. The Contractor shall review and compare the Architectural, Structural, Plumbing, Mechanical, and Electrical Drawings and all Owner supplied equipment Drawings, and adjust their work to be in conformity with the conditions indicated thereon. Discrepancies between drawings, between drawings and actual field conditions, or between Drawings and Specifications, shall promptly be brought to the attention of the Architect for a determination of the modifications to be effected. In the event that a major modification is required, a Change Order will be prepared.

#### 1.10 VERIFICATION OF EXISTING CONDITIONS AND DEMOLITION

- A. Before installation of any new work, verify the location, size, and other conditions at all points of connection to services or other existing piping, and at all locations where new work will cross or pass near existing piping, electrical, or other facilities.
- B. Remove ductwork, piping, controls, fixtures, and equipment that is not to remain in service as shown on the Drawings or as required. This included the removal of associated appurtenances and supports.
- C. Patch, cap, or repair existing works affected by this demolition in concealed spaces within six (6) inches of a live main or branch.
- D. Deliver removed material to the Owner as directed by the Architect. Dispose of all other removed material offsite.
- E. Information shown relative to existing services is based upon available records and data during preparation of the Drawings, but shall be verified. Make reasonable deviations found necessary to conform to actual locations and conditions, without extra charge.

#### 1.11 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Furnish three sets of typewritten instructions covering maintenance, adjustment, and operation of each piece of apparatus, bound in a hard cover loose-leaf binder. Neatly obscure or cross out inapplicable data from manufacturer's literature. Submit data to the Architect.
- B. Operating instructions shall show sequence of operations, lubrication, care, and maintenance requirements of all equipment. Final acceptance of the work will not be made until a satisfactory submission of this material is received and approved by the Architect.
- C. The Owner's authorized representative shall be instructed in the operation and servicing of all HVAC & plumbing systems.

#### 1.12 ACCURACY OF DATA

- A. The data given herein and on the Drawings are as exact as could be reasonably secured, but absolute accuracy is not guaranteed. Exact locations, distances, elevations, etc. will be governed by shop drawings, the building itself, and actual field conditions.

#### 1.13 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall be responsible for delivery, storage, protection, and placing of all equipment and materials.
  - 1. Contractor shall protect the work and materials from damage during construction. Equipment stored at the job site shall be protected from dust, water, or other damage, and be covered if equipment is exposed to weather. Protect interiors of new equipment and piping systems against entry of foreign matter. Clean both inside and outside before painting or placing equipment in operation.
  - 2. Any items damaged shall be repaired or replaced, at no additional cost to the Owner.
- B. Cleanliness of Piping and Equipment Systems



1. Exercise care in storage and handling of equipment and piping material to be incorporated in the work. Remove debris arising from cutting, threading, and welding of piping.
2. Piping systems shall be flushed, blown, or pigged as necessary to deliver clean systems.
3. Contractor shall be fully responsible for all costs, damage, and delay arising from failure to provide clean systems.

#### 1.14 WARRANTIES

- A. Equipment warranties shall be provided for all equipment, with all necessary information filled in, except purchase date, in favor of the Owner.
- B. The contractor shall guarantee that all work under this Section is free from defects in material and workmanship for a period of one year from the date of filing the Notice of Completion. Replacement of defective work and damage caused to work of other trades as a result of such defective work shall be the responsibility of the Contractor, and shall be made at no cost to the Owner.

#### 1.15 ALTERNATIVE MATERIALS AND METHODS

- A. These plans and specifications describe the general scope of the mechanical systems. These plans and specifications do not preclude the submittal of alternative methods or materials. Manufacturer's names and catalog numbers are stated to identify the type and quality of the equipment or materials required for the project.
- B. The contractor may submit shop drawings and/or technical information on alternative equipment, materials or installation details to accomplish the intent of the plans and specifications. Approval of the alternative equipment, materials or installation details shall not relieve the contractor of any responsibility for complying with the intent of the plans and specifications. Submit the manufacturers' technical information, shop drawings, and/or written description of alternative methods for each item described by manufacturer's name and catalog number and for each component, equipment, material, or installation detail required.

#### 1.16 SITE EXAMINATION

- A. Thoroughly examine the site and verify the actual work conditions. No extra compensation will be allowed for expenses due to failure to discover site conditions which affect the work.

### **PART 2 – PRODUCTS**

#### 2.1 GENERAL

- A. All materials, appliances, and equipment shall be new and best of their respective kinds, free from defects, and of the make, brand, or quality specified or as accepted by the Architect.
- B. When two or more units of materials or equipment of the same type or class are required, these units shall be products of one manufacturer.
- C. Apply and install all items in accordance with manufacturer's written instructions. Refer conflicts between manufacturer's instructions and the contract drawings and specifications to the Architect for resolution.

## 2.2 DUCTWORK

### A. Sheet Metal Ductwork - Rectangular

1. Ducts and plenums shall be fabricated and installed in conformance with the latest editions of: NFPA Pamphlet No. 90A; California Building Code; California Mechanical Code and the SMACNA HVAC Duct Construction Standards (Metal and Flexible). Ducts and plenums shall be constructed of hot dipped galvanized mild steel and shall have airtight Class "B" seals at all transverse joints and longitudinal seams. Tables and figures hereinafter referenced are from the 2005 edition of the SMACNA HVAC Duct Construction Standards (Metal and Flexible).
2. Rectangular duct construction shall conform to Table 2-3. All transverse joints shall be flanged per Table 2-32, with corner closures or "Duct Mate" flanged connections with corner closures per Figure 2-17. Elbows shall be standard radius (Type RE 1) or square throat with vanes (Type RE 2) per Figure 4-2, with double thickness turning vanes per Figures 4-3 and 4-4. Offsets and transitions shall be per Figure 4-7. Supply, return, and exhaust branch connections shall be per Figure 4-5 or 4-6. Splitters shall not be used.
3. Lined ducts shall be fabricated such that the net inside dimensions equals the duct sizes shown on the Drawings.

### B. Sheet Metal Ductwork - Spiral

1. Round ducts shall be spiral, United McGill or equal. All transverse joints and longitudinal seams shall have Class "B" seals. All branches in round duct systems shall be made with factory fabricated reducing wye branches. Duct turns shall be made with standard, factory fabricated, three-piece elbows.

### C. Flexible Ductwork

1. Flexible ducts shall be Flexmaster "8M" or approved equal. Flexible ducts shall be used only where shown on the Drawings, and maximum length of any given flexible duct shall not exceed 5 ft. Galvanized sheet metal elbows shall be used for turns greater than 45° on flexible ducts 10" and larger. Connections to rectangular ducts shall be made with "spin-in" fittings with air scoops. The installation of flexible ducts shall conform to Figure 3-10, with the exceptions noted herein.

### D. Supports

1. Supports for horizontal ducts and plenums shall be fabricated per Figures 5-5 and 5-6 and Tables 5-1, 5-2, and 5-3. The maximum distance between hangers shall be eight feet for rectangular ducts and twelve feet for round ducts. Attachments to the structure shall be made with adequately sized lag bolts for straphangers and adequately sized machine bolts and side beam brackets for rod hangers. Supports for vertical ducts shall be band iron strap or angle bracket type per Figure 5-8 and 5-9.

### E. Specialties:

1. Duct Access Doors: Including those for removing filters, duct access doors shall be as detailed in Figure 7-2 with sash locks, piano hinges, and gaskets. Access doors shall have an unobstructed full swing.

## 2.3 DUCTWORK ACCESSORIES

- A. Flexible Duct Connections
  - 1. Duro-Dyne "Metal-Fab" with Duroion, Ventfabrics "Ventglass," or approved equal.
  - 2. Install at each point where a blower unit is connected to a duct. A minimum clearance of three inches between the duct and the source of vibration shall be maintained. Install per Figure 2-17.
- B. Screens
  - 1. Install removable bird screens at all outside intakes and exhaust air discharges. Screens shall be fabricated from ½" x 14 gauge mesh secured in full frames. Screens and frames shall be constructed of the same material as the duct, hood, or equipment to which attached.
- C. Joints
  - 1. Tape all joints airtight using Hardcast type "DT" pressureless tape and "HD-20" adhesive, per manufacturer's directions.
- D. Dampers
  - 1. Provide butterfly or multi-blade dampers where indicated on the Drawings or as required for balancing air quantities to values shown without generating excessive noise. Provide Duro-Dyne "KS-385," or approved equal, locking quadrants on each manual damper. Locate dampers in furred ceilings near access panels where possible.
    - a. Butterfly dampers shall be constructed as per Figure 7-4, Figure A, B, and C in the duct manual.
    - b. Multi-blade dampers shall conform to Figure 7-5.
    - c. Back-draft dampers shall be Air Balance "Air Dynamic" model DY-1002-V, or equal.

## 2.4 INSULATION

- A. Exterior of Ductwork:
  - 1. Unless specified to be lined, all sheet metal supply and return ducts in indirectly conditioned spaces shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-6 installed.
  - 2. Unless specified to be lined, all sheet metal supply and return ducts in unconditioned spaces shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-8 installed.
  - 3. All outside air ductwork between building outside air inlet and HVAC unit or heat/energy recovery ventilator shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-4 installed.
  - 4. Exhaust ductwork within 10 feet of termination point and between any heat/energy recovery ventilator and exhaust termination shall be insulated on the outside with Johns Manville "Microlite XG" flexible fiberglass blanket-type duct

wrap, with factory applied FSK aluminum foil facing, with a composite UL rating of 25/50, minimum R-4 installed.

B. Interior of Ductwork:

1. Duct lining shall be installed in supply and return ducts and plenums where noted on the Drawings. Lining shall be Johns Manville "PermacoteLinacoustic R" rigid fiberglass board for plenums and "PermacoteLinacoustic HP" fiberglass duct liner for ducts, 1" thick, unless otherwise noted, with fire resistant coating. Duct liner shall meet ASTM C 1071, with air surface coated with acrylic coating treated with EPA registered anti-microbial agent prove to resist microbial growth as determined by ASTM G 21 and G 22. Insulation with torn or broken coating shall be removed and replaced. Loose corners, edges, and butt joints will not be accepted.
2. All exposed exterior supply and return ductwork shall have minimum 2" interior insulation, as specified in this section.
3. Maximum velocity: 5,000 ft/min.
4. Fasteners: duct liner galvanized steel pins, welded or mechanically fastened.
5. Developed smoke density shall not exceed 50. Flame spread rating shall not exceed 25.

## 2.5 REGISTERS, GRILLES, AND DIFFUSERS

- A. All terminals shall be suicide-deterrent, maximum security, Titus SG-SD or approved equal. Finish shall be #26 White.

## 2.6 COMBINATION FIRE/SMOKE DAMPERS

- A. All fire/smoke dampers shall be Ruskin FSD60 series combination fire smoke dampers or approved equal. Rated for 1-1/2 hour fire resistance in accordance with UL555, Leakage Class I Smoke Damper in accordance with UL555S.
- B. Frame: 5 inches x minimum 16 gage (127 x minimum 1.6 mm) roll formed, galvanized steel hat-shaped channel, reinforced at corners.
- C. Blades: True airfoil-shaped, single piece, double skin. Material: Minimum 14 gage (2.0 mm) equivalent thickness, galvanized steel.
- D. Blade Seals: Inflatable silicone fiberglass material to maintain smoke leakage rating to a minimum of 450°F (232°C) and galvanized steel for flame seal to 1,900°F (1,038°C). Mechanically attached to blade edge (glue-on or grip type seals are not acceptable).
- E. Jamb Seals: Stainless steel, flexible metal compression type.
- F. Axles: Minimum ½ inch (13) diameter plated steel, hex-shaped, mechanically attached to blade.
- G. Provide TS 150EZ Fire Stat, UL classified dual temperature device that allows the damper to be re-opened after initial closure from heat.
- H. Where a total coverage fire alarm system is not provided in the building, provide factory duct smoke detector kit, Ruskin DSDf, with "single-point" electrical connections.
- I. Minimum 20 gauge factory sleeve.

- J. Factory mounting angles with pre-punched screw holes.

### **PART 3 – EXECUTION**

#### **3.1 INSTALLATION, GENERAL**

- A. Provide all necessary cutting in connection with the work of the Section. No cutting shall be done without the approval of the Architect. Comply with requirements specified in Cutting and Patching Section.
- B. No structural members shall be drilled, bored, or notched in a manner that will impair their structural capacity.
- C. All penetrations of concrete or masonry shall be made with core drills.

#### **3.2 DUCTWORK**

- A. All ductwork shall be installed within spaces provided where possible. Ducts shall be installed true to line and grade, fully secured to structural framing with specified hangers and supports, insulated, and vibration isolated, where required.
- B. Each section of supply air ductwork shall be cleaned at the shop, dust and oil free, using a degreasing agent and detergent and sealed airtight at both ends with visqueen and tape. Supply ducts shall be additionally cleaned with a disinfecting solution. Ends of all supply and internally insulated exhaust ducts shall be kept sealed until the time they are jointed. When duct sections are jointed, wipe down all interior surfaces with a clean tack cloth. If tack cloth shows any dust, then re-clean duct as described above. The intent is that no foreign matter be allowed to enter the ductwork at any time after factory cleaning and during construction.

#### **3.3 INSULATION**

- A. Exterior Ductwork:
  - 1. The insulation shall be cut longer than the perimeter of the duct to provide 2" staple lap and minimum compression at the corners. All joints shall be lapped 2' and stapled with outward clinching staples 2" on center. The insulation shall be mechanically fastened to the underside of all ducts 24" wide or more using cup-head pins, weld pins, or stick pins with speed clips 18" on center. All joints and penetrations of the vapor barrier jacket shall be sealed with a minimum 3" wide matching pressure sensitive tape. Pressure-sensitive tape shall be firmly rubbed in place immediately after application using a "squeegee" type tool.
  - 2. When a vapor seal is required, two coats of vapor retarder mastic reinforced with one layer of 4" wide, open weave glass fabric may be used in lieu of pressure-sensitive tape. Mastic shall be brushed onto joint and glass fabric until the fabric is filled. Mastics shall be applied in accordance with application instructions on the container.
- B. Interior Duct Liner
  - 1. Apply to the inside face of ducts, coated side facing air stream, fasten using fire retardant adhesive meeting ASTM C 9169, and secure with mechanical liner fasteners at 24" maximum o.c., both directions. Pin length should be such as to limit compression of liner.

2. Exposed edges must be factory or field coated. For systems operating at 4000 fpm or higher, a metal nosing must be installed on all liner leading edges. Insulation with torn or broken coatings shall be removed or replaced. Loose corners, edges, and butt joints will not be accepted.

### 3.4 TEST, INSPECTIONS

- A. Make all necessary control adjustments and balancing of air and water flows. Operate the entire system for a period of time not less than three (3) working days for the purpose of proving satisfactory performance. During this period, instruct such persons as the Owner and/or Architect may designate in the proper operation of the systems. Should further adjustment prove necessary, operating tests shall be repeated until a satisfactory test is obtained.
- B. This Contractor shall not allow or cause any work of this Section to be covered or enclosed until it has been inspected, tested, and approved by the Architect and the authorities having jurisdiction over the work. Should any of this work be enclosed or covered up before such inspection, testing, and approval, this Contractor shall uncover the work, have the necessary inspections, tests, and approvals made and, at no expense to the Owner, make all repairs necessary to restore both his work and that of other contractors which may have been damaged to be in conformity with the Contract Documents.

### 3.5 FIRE / SMOKE DAMPERS

- A. Inspect areas to receive dampers. Notify the Engineer of conditions that would adversely affect the installation or subsequent utilization of the dampers. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Install dampers at locations indicated on the drawings and in accordance with the manufacturer's UL approved installation instructions. Install dampers square and free from racking with blades running horizontally. Do not compress or stretch damper frame into duct or opening. Handle damper using sleeve or frame. Do not lift damper using blades, actuator, or jackshaft.
- C. Install bracing for multiple section assemblies to support assembly weight and to hold against system pressure. Install bracing as needed.

### 3.6 CLEANUP

- A. Upon completion of the work of this Section, remove all material, debris, and equipment associated with or used in the performance of this work.

END OF SECTION