

BID DOCUMENTS

including Specifications
for construction of:

The COUNTY OF MENDOCINO

Agriculture – Farm Advisor Building Entry Façade Repair Project

890 N. Bush Street
Ukiah, CA 95482



Prepared by:
FACILITIES & FLEET DIVISION
851 LOW GAP ROAD
UKIAH, CA 95482

BID# 030-24

Date of Issue:
October 8, 2024

SECTION 00 00 20

PROJECT DIRECTORY

PROJECT: Agriculture – Farm Advisor
Entry Façade Repair Project
890 North Bush Street
Ukiah, CA 95482

OWNER: County of Mendocino
501 Low Gap Road
Ukiah, CA 95482
(707) 234-6050

AGENT: County of Mendocino
Facilities and Fleet Division
851 Low Gap Road
Ukiah, CA 95482
(707) 234-6058
vierak@mendocinocounty.gov
Kirk Viera, Facility Project Specialist I

ARCHITECT: HMR Architect
2130 21st Street
Sacramento, CA 95818
(916) 736-2724
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END OF SECTION

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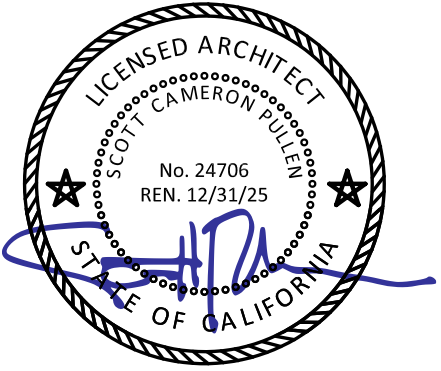
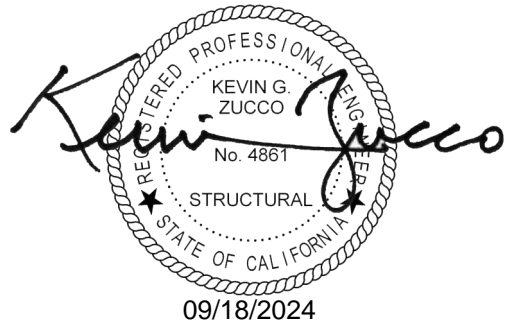
CERTIFICATIONS PAGE

PROJECT TITLE : MENDOCINO COUNTY AGRICULTURE – FARM
ADVISOR ENRTY FAÇADE REPAIR

LOCATION : 890 N. Bush Street, Ukiah, CA 95482
Mendocino County

: 09/20/2024

A/E CONSULTANT : HMR Architects, 2130 21st Street, Sacramento, CA 95818

	
<p>ARCHITECT</p>	<p>STRUCTURAL ENGINEER</p>

SECTION 00 02 00

NOTICE INVITING BIDS

Notice is hereby given that sealed bids will be received at the Mendocino County General Service Agency Office, 841 Low Gap Road, Ukiah, California 95482 until the hour of 2:00 p.m., as determined by the clock on the wall in the Facility and Fleet Office, **on Thursday October 31, 2024**, and then publicly opened and read aloud in the General Service Agency Conference Room, 841 Low Gap Road, Ukiah, California for the following project:

Agriculture – Farm Advisor Entry Façade Repair Project (BID 030-24)

Electronic Plans and Documents may be seen or downloaded from the Mendocino County Web Page for Open RFP, Quotes & Bids: <https://www.mendocinocounty.org/departments/general-services/central-services/open-rfp-quotes-bids>. Additionally plans and documents have been distributed to builder's exchange plan rooms throughout Northern California.

Bids shall be made on the form provided in this Manual and accompanied by a form of bid security as provided in Section 001000 Instructions to Bidders.

The successful Bidder will be required to furnish a Labor and Material Bond and a Performance Bond as required in Section 001000 Instructions to Bidders.

Bidders' attention is called to Instruction to Bidders and other related documents in this Manual for full directions and information as to bidding and other requirements.

MANDATORY PRE-BID CONFERENCE

A mandatory pre-bid conference and site inspection will be held on:

Wednesday October 16, 2024, at 10:00 AM at 890 North Bush Street, Ukiah, CA 95482

The County reserves the right to schedule additional mandatory pre-bid conferences to ensure adequate bid representation. Failure to attend at least one of the pre-bid conferences will disqualify a non-attending bidder from the bid.

PAYMENT OF PREVAILING WAGES

Pursuant to the provisions of the Labor Code of the State of California, the Department of Industrial Relations has made a determination of the rate of per diem wages to be paid on the prevailing rate of pay for regular, holiday and overtime work in the locality in which the public work is to be performed, for each craft, classification, or type of workman needed to execute the contract. All County of Mendocino projects greater than \$1,000 require that contractors adhere to Prevailing Wage requirements (California Labor Code, Sections 1770 through 1775). The rates can be found online here: <https://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>.

CONTRACTOR REGISTRATION

Per Labor Code Section 1771.1(a) A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract

Code or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to 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.

CERTIFIED PAYROLL RECORDS

Per Labor Code Section 1776 each contractor and subcontractor shall keep accurate payroll records. A certified copy of all payroll records for work performed under this contract shall be furnished upon request to a representative of the awarding body. Per SB 854 contractors and subcontractors are required to furnish certified payroll reports directly to the Department of Industrial Relations.

EMPLOYMENT OF APPRENTICES

Each contractor and subcontractor performing work in an apprenticeable craft or trade shall comply with Section 1777.5 relating to Apprentices on public works projects.

MENDOCINO COUNTY BUSINESS LICENSE

Pursuant to Mendocino County Code Chapter 6.04 – Business Licenses, at the time of contract award, the contractor shall supply a copy of their current County of Mendocino business license.

LAWS AND GOVERNANCES

In the performance of the work contemplated by this contract, the contractor shall conform to and abide by all labor requirements and provisions of State and Federal Laws and City and County Ordinances and Regulations which may in any manner affect those engaged or employed on the work project, including but not limited to the overtime provisions of the Labor Code section 1813 and 1815 of the State of California.

Federal Laws, including The Davis-Bacon Act and The Americans with Disabilities Act of 1990, are applicable to the project.

END OF SECTION

SECTION 00 10 00
INSTRUCTIONS TO BIDDERS

PART 1 – GENERAL

1.1 BIDS RECEIVED

- A. Sealed bids for the **Agriculture – Farm Advisor Entry Façade Repair Project (BID 030-24)** will be received at the Mendocino County General Service Agency Office, 841 Low Gap Road, Ukiah, California, until 2:00 p.m. as determined by the clock on the wall of the General Service Agency Office, on **Thursday October 31, 2024** and then publicly opened and read aloud in the General Service Agency Conference Room, 841 Low Gap Road, Ukiah, California.
- B. Late bids will not be accepted. It is Bidder's responsibility to assure that its bid is delivered and received at the location noted above on or before the date and hour set for the bid opening.

1.2 LICENSE REQUIREMENT

The license required for this Project is a California B Contractor General Building

1.3 BIDS AND BID SECURITY

Bids, to be considered, must be in accordance with the following instructions:

- A. Bids must be submitted on the bid form provided in this Manual, properly and completely filled out with numbers stated both in writing and in figures and with signatures of all persons signing in longhand/cursive.
- B. The completed form shall be without erasures or interlineation and shall not contain recapitulations of the work to be done.
- C. A Bidder's Bond, Certified Check or Cashier's Check made payable to the County of Mendocino for an amount equal to at least ten percent (10%) of the bid amount shall accompany each bid. The above-mentioned bid security shall be given as a guarantee that the Bidder shall execute the contract if it be awarded to it in conformity with the contract documents and shall provide the surety bond or bonds required, sign the contract and commence work as set forth in the contract documents. Such guaranty to be forfeited should the Bidder to whom the contract is awarded fail to enter into the contract.

- D. Responsive Bids shall include completed and executed copies of the following sections if included in the project Manual:
- a. 001200 Qualification Application
 - b. 003070 Non-Collusion Affidavit
 - c. 003100 Bid Form
 - d. 004300 Subcontractor Listing Form

1.4 SUBCONTRACTORS LISTED

- A. In accordance with California Public Contract Code Sections 4100 et seq., inclusive, each bidder shall provide a list of subcontractors (Section 00430), giving the name and location of place of business and contractor's license number of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent (0.5%) of the total contract price. In each instance, the nature and portion of the work to be subcontracted shall be described.
- B. Failure of Bidder to specify a subcontractor for any portion of the work in an amount in excess of one-half of one percent (0.5%) of the total contract price constitutes an agreement for Bidder to perform that portion of the work itself. After bids are opened, no subcontractor may be designated or substituted except as provided for in Sections 4107 et seq. of the Public Contract Code.
- C. All Bidders must supply with their Bids the required information on all subcontractors who will perform any portion of the work including labor, rendering of service or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one-half of one percent (0.5%) of total bid. Violation of this requirement may result in Bid being deemed non-responsive and not being considered.

1.5 AWARD OR REJECTION OF BIDS

The contract shall be awarded to the lowest responsible bidder complying with these instructions, provided the bid is deemed reasonable and in the best interest of the County of Mendocino. County reserves the right to reject any and all bids, and to waive any informality on bids received whenever the rejection or waiver is in the best interest of County. The competency and dependability of the bidders will be considered when making the award.

- A. Additive and Deductive Items: Method of Determining Lowest Bid. Pursuant to Public Contract Code section 20103.8, if this bid solicitation includes additive and/or deductive items, the checked [X] method shall be used to determine the lowest bid: [check one].

- [X] 1. The lowest bid shall be the lowest bid price on the base bid contract without consideration of the prices on allowance, additive or deductive items.

2. The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that were specifically identified in the bid solicitation or Bid Form as being used for the purpose of determining the lowest bid price.
3. The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items taken in order from a specifically identified list of those items that, when in the solicitation, and added to, or subtracted from, the base contract, are less than, or equal to, a funding amount publicly disclosed by the County before the first bid is opened.
4. The lowest bid shall be determined in a manner that prevents any information that would identify any of the bidders or the proposed Subcontractors or suppliers from being revealed to the public entity before the ranking of all bidders from lowest to highest has been determined.

If no method is checked, sub-paragraph 1. shall be used to determine the lowest bid.

- B. Notwithstanding the method used by the County to determine the lowest responsible bidder, the County retains the right to add to or deduct from the contract any of the additive or deductive items included in the bid solicitation.
- C. The award of the contract, if awarded, is expected to be made within thirty (30) days and in no event later than eighty (80) days after the bid opening. After award, County shall notify the successful Bidder in writing, and forward with the notification original contracts for Bidder's execution. Within eight (8) working days after such notification, the successful Bidder shall return the signed contracts to County, accompanied by all required Surety Bonds, insurance policies and endorsements.

1.6 TIME OF COMPLETION

Bidder agrees to commence work on or before a date to be specified in the written "Notice to Proceed" from County and to fully complete the project within sixty (60) calendar days from date of the written "Notice to Proceed".

1.7 ADDENDUM

Any addendum issued during the time of bidding and before bid opening shall be included in the bid. The addendum issued by County shall become part of the agreement. Questions to be considered for inclusion in an addendum must be in writing and in the hands of County not less than seven (7) days prior to bid opening date.

1.8 INTERPRETATION OF DRAWINGS AND DOCUMENTS

Should a Bidder find discrepancies in, or omissions from, the drawings or documents, or should it be in doubt as to their intent, it should at once notify County, which will then send responsive written instructions in the form of addenda to all Bidders. County will not

be responsible for any oral instructions. Any verbal conversations with County during the bidding period are not to be construed as instructions. Any changes in the Contract documents will be issued by written addendum only.

1.9 WITHDRAWAL OF BID

Bids may be withdrawn prior to, but not later than, the time of bid opening.

1.10 BONDS

The successful Bidder is required to furnish a Labor and Material Payment Bond and a Performance Bond each in the amount equal to one hundred percent (100%) of the contract price. Said Bonds shall be obtained from a surety company satisfactory to County.

1.11 SUBSTITUTIONS

Any substitution shall be made in accordance with instructions contained in Section 00700 – General Conditions included herein. Questions concerning substitutions will not be entertained during the bidding period.

1.12 SUBSTITUTION OF SECURITY

Pursuant to California Public Contract Code Section 22300, the Contractor may substitute securities for retention money withheld by the County to insure performance under the Contract. Said securities shall be in a form and of a type acceptable to the County.

1.13 LIQUIDATED DAMAGES

In case of failure on the part of Contractor to complete the work within the time stipulated plus any duly authorized extension of time granted in writing by County, Contractor shall pay to County the sum of \$250.00 per calendar day for each day's delay beyond the time prescribed as liquidated damages, but not as a penalty. The language in the paragraph of the General Conditions entitled "Time of Completion and Liquidated Damages" is incorporated herein.

1.14 BIDDER'S QUALIFICATIONS

- A. All Bidders, Contractors and Subcontractors bidding under joint venture agreements shall be duly licensed as provided for under Sections 7000 et seq. of the Business and Professions Code.
- B. A corporation which is awarded the Contract will be required to furnish certification attesting to its corporate existence, as well as evidence that the Officer signing the contract is duly authorized to do so.
- C. Bidders and their subcontractors may be required to furnish evidence satisfactory to County that they have sufficient means and have had experience in the class

of work called for to enable them to complete the contract in a satisfactory manner.

- D. No person, firm or corporation shall make or file or be interested in more than one bid for the same work, except insofar as alternate bids may be called for. No person, firm or corporation shall submit a collusive or sham bid or seek directly or indirectly to induce any other bidder to submit a collusive or sham bid or to refrain from submitting a bid or to seek in any way to control or fix the price of the bid or any portion of the bid price in order to secure an advantage against County or any other person interested in the proposed contract. However, a person, firm or corporation submitting a sub-proposal to a bidder or quoting prices on materials to a bidder is not hereby disqualified from submitting sub-proposals or quoting prices to other bidders.
- E. A licensed contractor shall not submit a bid to a public agency unless (1) its contractor's license number appears clearly on the bid, (2) the license expiration date is stated, and (3) the bid contains a statement that the representations made therein are made under penalty of perjury. Any bid not containing this information, or a bid containing information which is subsequently proven false, shall be considered non-responsive and shall be rejected by County.
- F. The work to be performed under this contract is of a very specialized nature. It is the desire of County to secure the best work attainable and to maintain a very critical and condensed schedule. Bidders considered for award will be limited to those firms who can show to the satisfaction of County that they have the facilities and experience necessary to perform the required construction in accordance with specifications proposed for this project. The terms under which bidders will be evaluated and the rules that will be applied are attached to this Manual as section 00120 Qualification Application.

1.15 EXAMINATION OF SITE AND DOCUMENTS

By submitting a bid, Bidder agrees and warrants that (1) it has examined the site and all documents, drawings and specifications; (2) it is satisfied that the same are adequate to produce the required results; and (3) its bid covers the cost of all items required in the agreement. The work to be performed includes all of the items mentioned in these specifications and/or as shown on the plans and other documents included as a part of the project.

1.16 ENVIRONMENTAL AND PLANNING CONDITIONS OF APPROVAL

Bidder agrees to perform its work in conformance with all environmental and planning conditions of approval applicable to the project. Bidders' attention is directed to specification section 008010 Supplementary General Conditions and the source documents for specific conditions of approval

1.17 AGREEMENT

Contract documents include the Agreement which the successful Bidder, as Contractor, will be required to execute.

1.18 PRE-CONSTRUCTION CONFERENCE

The successful bidder shall be available for a pre-construction conference with County at a mutually convenient time.

END OF SECTION

SECTION 00 12 00

QUALIFICATION APPLICATION

The information contained in this Application is confidential and is for the sole use of County in evaluating the qualifications of Bidder. Only the information below (“Contact Information”) is considered public information.

CONTACT INFORMATION

Firm Name (as it appears on license): _____

Check one: Corporation Partnership Sole Proprietor

Contact Person: _____

Address: _____

Phone: _____ Fax: _____

If the firm is a sole proprietor or partnership:

Owner(s) of Company: _____

Contractor’s License Number(s):

License No.	Classifications	Expiration	Qualifying Individual
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

DIR Registration Number: _____

Mendocino County Business License No: _____

PART I. ESSENTIAL REQUIREMENTS FOR QUALIFICATION

The Contractor will be immediately disqualified if the answer to any of questions 1 through 3 is “no”.

The Contractor will be immediately disqualified if the answer to any of questions 4 through 7 is “yes”¹.

1. Contractor possesses a valid and current California Contractor’s license for the project or projects for which it intends to submit a bid.
 Yes No
2. Contractor has a liability insurance policy with a policy limit of at least one million dollars (\$1,000,000) per occurrence and two million dollars (\$2,000,000) aggregate.
 Yes No
3. Contractor has a current workers’ compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code Section 3700 *et seq.*
 Yes No Contractor is exempt from this requirement because it has no employees
4. Has Contractor’s license been revoked at any time in the last five (5) years?
 Yes No
5. Has a surety firm completed a contract on Contractor’s behalf, or paid for completion because Contractor’s firm was default terminated by the project owner within the last five (5) years?
 Yes No
6. At the time of submitting this qualification form, is Contractor’s firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works contract, pursuant to either Labor Code Section 1777.1 or Labor Code Section 1777.7?
 Yes No

If the answer is “yes”, state the beginning and ending dates of the period of debarment:

7. At any time during the last five (5) years, has Contractor’s firm, or any of its owners or officers, been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?
 Yes No

¹ A contractor disqualified solely because of a “yes” answer given to questions 4,5, or 7 may appeal the disqualification and provide an explanation of the relevant circumstances during the appeal procedure.

PART II. ORGANIZATION, HISTORY, ORGANIZATIONAL PERFORMANCE,
 COMPLIANCE WITH CIVIL AND CRIMINAL LAWS

A. Current Organization and Structure of the Business

For firms that are corporations:

- 1a. Date incorporated: _____
- 1b. Under the laws of the State of: _____
- 1c. Provide all the following information for each person who is either (a) an officer of the corporation (president, vice president, secretary, treasurer), or (b) the owner of at least ten percent (10%) of the corporation's stock:

Name	Position	Years with Co.	% Ownership	Social Security #

For firms that are partnerships:

- 1a. Date of formation: _____
- 1b. Under the laws of the State of: _____
- 1c. Provide all of the following information for each partner who owns ten percent (10%) or more of the firm:

Name	Position	Years with Co.	% Ownership	Social Security #

For firms that are sole proprietorships:

- 1a. Date of commencement of business: _____
- 1b. Social security number of company owner: _____

B. History of the Business and Organizational Performance

- 2. Has there been any change in ownership of the firm at any time during the last three (3) years?

NOTE: A corporation whose shares are publicly traded is not required to answer this question.

Yes No

If “yes”, explain on a separate signed page.

3. Is the firm a subsidiary, parent, holding company, or affiliate of another construction firm?

NOTE: Include information about other firms if one firm owns fifty percent (50%) or more of another, or if an owner, partner, or officer of Contractor’s firm holds a similar position in another firm.

Yes No

If “yes”, explain on a separate signed page.

4. Are any corporate officers, partners, or owners connected to any other construction firms?

NOTE: Include information about other firms if an owner, partner, or officer of Contractor’s firm holds a similar position in another firm.

Yes No

If “yes”, explain on a separate signed page.

5. Financial Statements: Does the Contractor have reviewed or audited financial statements for each of the last three years?

Yes No

6. State Contractor’s firm’s gross revenues for each of the last three (3) years:

Year	Gross Revenue

7. How many years has Contractor’s organization been in business in California as a contractor under its present business name and license number? _____ years.

8. Is Contractor’s firm currently the debtor in a bankruptcy case?

Yes No

If “yes”, please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

Disputes

9. At any time in the last five (5) years, has Contractor’s firm been assessed and paid liquidated damages after completion of a project under a construction contract with either a public or private owner?

Yes No

If “yes”, explain on a separate signed page, identifying all such projects by owner, owner’s address, the date of completion of the project, amount of liquidated damages assessed, and all other information necessary to fully explain the assessment of liquidated damages.

10. In the last five (5) years, has Contractor’s firm, or any firm with which any of Contractor’s company’s owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?
NOTE: “Associated with” refers to another construction firm in which an owner, partner or officer of Contractor’s firm held a similar position.

Yes No

If “yes”, explain on a separate signed page. State whether the firm involved was the firm applying for qualification here or another firm. Identify by name of the company, the name of the person within Contractor’s firm who was associated with that company, the year of the event, the owner of the project, the project, and the basis for the action.

11. In the last five (5) years, has Contractor’s firm been denied an award of a public works contract based on a finding by a public agency that Contractor’s company was not a responsible bidder?

Yes No

If “yes”, explain on a separate signed page. Identify the year of the event, the owner, the project, and the basis for the finding by the public agency.

NOTE: The following two questions refer only to disputes between Contractor’s firm and the owner of a project. Contractor need not include information about disputes between its firm and a supplier, another contractor, or subcontractor. Contractor need not include information about “pass-through” disputes in which the actual dispute is between a subcontractor and a project owner. Also, Contractor may omit reference to all disputes about amounts less than \$50,000.

12. In the last five (5) years, has any claim *against* Contractor’s firm concerning the firm’s work on a construction project been *filed in court or arbitration*?

Yes No

If “yes”, on separate signed sheets of paper identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed, and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

13. In the last five (5) years, has Contractor's firm made any claim against a project owner concerning work on a project or payment for a contract and *filed that claim in court or arbitration*?

Yes No

If "yes", on separate signed sheets of paper identify the claim by providing the project name, date of the claim, name of the entity (or entities) against whom the claim was filed, a brief description of the nature of the claim, the court in which the case was filed, and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

Criminal Matters and Related Civil Suits

14. Has Contractor's firm or any of its owners, officers or partners ever been found liable in a civil suit or found guilty in a criminal action for making any false claim or material misrepresentation to any public agency or entity?

Yes No

If "yes", explain on a separate signed page, including who was involved, the name of the public agency, the date of the investigation and the grounds for the finding.

15. Has Contractor's firm or any of its owners, officers or partners ever been convicted of a crime involving federal, state, or local law related to construction?

Yes No

If "yes", explain on a separate signed page, including who was involved, the name of the public agency, the date of the conviction and the grounds for the conviction.

16. Has Contractor's firm or any of its owners, officers or partners ever been convicted of a federal or state crime of fraud, theft, or any other act of dishonesty?

Yes No

If "yes", identify on a separate signed page the person(s) convicted, the court (the county if a state court, the district or location if a federal court), the year, and the criminal conduct.

Bonding

17. If Issued a Notice of Award, can the contractor secure payment and performance bonds within ten (10) calendar days?

Yes No

Name of Bonding Company:

Name, Address, Telephone# for Surety Agent:

C. Compliance with Occupational Safety and Health Laws and with Other Labor Legislation Safety

18. Has Cal-OSHA cited and assessed penalties against Contractor's firm for any "serious", "willful", or "repeat" violations of its safety or health regulations in the last five (5) years?

NOTE: If Contractor has filed an appeal of a citation, and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, Contractor need not include information about it.

Yes No

If "yes", attach a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was/were issued, and the amount of the penalty paid (if any). If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

19. Has the Federal Occupational Safety and Health Administration cited and assessed penalties against Contractor's firm in the last five (5) years?

NOTE: If Contractor has filed an appeal of a citation and the Appeals Board has not yet ruled on the appeal, or if there is a court appeal pending, Contractor need not include information about the citation.

Yes No

If "yes", attach a separate signed page describing each citation.

20. Has the EPA or any Air Quality Management District or any Regional Water Quality Control Board cited and assessed penalties against either Contractor's firm or the owner of a project contracted to Contractor in the last five (5) years?

NOTE: If Contractor has filed an appeal of a citation and the Appeals Board has not yet ruled on the appeal, or if there is a court appeal pending, Contractor need not include information about the citation.

Yes No

If "yes", attach a separate signed page describing each citation.

21. How often does Contractor require documented safety meetings to be held for construction employees and field supervisors during the course of a project?

22. List Contractor's Experience Modification Rate (EMR) (California's Workers' Compensation insurance) for each of the past three (3) premium years:
NOTE: An Experience Modification Rate is issued to Contractor annually by its workers' compensation insurance carrier.

Current year: _____

Previous year: _____

Year previous to previous year: _____

If Contractor's EMR for any of these three (3) years is or was 1.20 or higher, Contractor may, at its discretion, attach a letter of explanation.

Prevailing Wage and Apprenticeship Compliance Record

23. Provide the name, address and telephone number of the apprenticeship program (approved by the California Apprenticeship Council) from whom Contractor intends to request the dispatch of apprentices to Contractor for use on any public work project for which it is awarded a contract by the County of Mendocino:

**SECTION 00 30 60
ANTITRUST CLAIM ASSIGNMENT**

Pursuant to California Labor Code Section 7103.5, the following certification is hereby set forth and made a part of these specifications:

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

SECTION 00 30 70
NON-COLLUSION AFFIDAVIT

In accordance with California Public Contract Code Section 7106, the following affidavit must be completed by the Bidder:

Non-Collusion Affidavit to be executed by Bidder
and submitted with bid

State of California
County of Mendocino

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

Signature

SECTION 00 31 00

BID FORM

Agricultural – Farm Advisor Entry Façade Repair Project

FOR MENDOCINO COUNTY

TO: Honorable Board of Supervisors

It is understood that this bid is based upon completion of the work within the time of completion requirements contained in the Instructions to Bidders.

It is agreed that this bid may not be withdrawn for a period of eighty (80) days from the opening hereof.

The undersigned has carefully checked all its figures and understands that the County will not be responsible for any error or omissions on the part of the undersigned in making up this bid.

The undersigned, having become completely familiar with all conditions affecting the cost of the work at the place where the work is to be done, and with the drawings, specifications and other contract documents prepared and issued thereof and now on file at the General Services Agency Office, hereby proposes and agrees to perform everything required to be performed, and to provide and furnish any and all required labor, materials, equipment, transportation and services necessary to erect and complete in the best workmanlike manner, all as shown and specified.

The following bid amounts are as defined and clarified in the Bids Required portion of these specifications:

BASE BID:

_____ Dollars (\$_____)

Allowance No.1 Dry-Rot Removal and Unforeseen Conditions Allowance

Ten Thousand Dollars _____ Dollars (\$ 10,000.00)

TOTAL BID:

_____ Dollars (\$_____)

Name of Organization _____

SALES TAX

All bids shall include required California State Sales Tax, cost of all bonds and insurance as required and all other items of expense incidental to the contract. The County of Mendocino is exempt from Federal Excise Tax.

A licensed Contractor shall not submit a bid to a public agency unless its Contractor's License number appears clearly on the bid, the license expiration date is stated, and the bid contains a statement that the representations made therein are made under penalty of perjury. Any bid not containing this information, or a bid containing information which is subsequently proven false, shall be considered nonresponsive and shall be rejected by the public agency.

Name of Organization _____

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

Address _____

Name of State where incorporated _____

CONTRACTORS LICENSE NO. _____ EXPIRATION DATE _____

Contractor has registered with the State of California's DIR (Department of Industrial Relations) website.

DIR Registration #: _____

Contractor is currently licensed to do business in the County of Mendocino.
Mendocino County Business License

#: _____

ADDENDA: CONTRACTOR TO ACKNOWLEDGE RECEIPT

I have received the following Addenda pertaining to this project and they have been included as part of my bid.

Numbers: _____

The undersigned hereby certifies under penalty of perjury that this bid is genuine and not collusive, that all the information is correct and that he/she has carefully checked all of the above figures and understands that the County will not be responsible for any errors or omissions on the part of the undersigned on making up this bid.

Signature _____

SECTION 00 43 00

SUBCONTRACTORS LISTING FORM

AGRICULTURAL – FARM ADVISOR ENTRY FAÇADE REPAIR PROJECT

In accordance with the provisions of Section 4100 *et seq.* of the Public Contract Code of the State of California, each bidder shall list below the name, license number, Department of Industrial Relations (DIR) Registration Number, and location of place of business of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent (0.5%) of the total contract price. In each such instance, the nature and portion of the work to be subcontracted shall be described.

PORTION OF WORK	SUBCONTRACTOR'S NAME	<u>CONTRACT LIC.</u> DIR REG #	LOCATION
-----------------	----------------------	-----------------------------------	----------

Name of Bidder _____

SECTION 00 50 00

AGREEMENT FOR LUMP SUM BID

THIS AGREEMENT made effective on the date it becomes fully executed by all parties, between the County of Mendocino, hereinafter called COUNTY, and _____, hereinafter called CONTRACTOR.

COUNTY and CONTRACTOR, for the consideration described below named, agree as follows:

FIRST: CONTRACTOR shall furnish all labor, materials, equipment, mechanical workmanship, transportation, and services for the installation and completion of the **Agricultural – Farm Advisor Entry Façade Repair Project**, in accordance with the contract documents, including the Addenda thereto, all as adopted by COUNTY.

SECOND: The work under this contract described below shall be completed within sixty (60) calendar days from the date of the "Notice to Proceed".

THIRD: The Contract consists of the following documents, all of which are fully a part hereof as if herein set out in full, whether or not hereto attached:

1. Invitation to Bid
2. Instructions to Bidders
3. Bidding Documents
4. Agreement
5. General Conditions
6. Unforeseen Physical Conditions
7. Summary of Work
8. Temporary Facilities and Building Services
9. Project Plans and Drawings
10. Procedural and Technical Specifications
11. Addendum to the Bid

FOURTH: COUNTY shall pay to CONTRACTOR, if CONTRACTOR is successful bidder, as full consideration for the faithful performance of the Contract the sum of:

This sum constitutes the base bid and the following allowances:

Allowance: Dry Rot and Unforeseen Conditions Allowance

Payment shall be made each month to CONTRACTOR in accordance with and subject to the provisions embodied in the Documents made a part of this Contract.

IN WITNESS WHEREOF

DEPARTMENT FISCAL REVIEW:

DEPARTMENT HEAD DATE

Budgeted: Yes No

Budget Unit: 1710

Line Item: _____

Grant: Yes No

Grant No.:

CONTRACTOR/COMPANY NAME

By: _____

Date: _____

NAME AND ADDRESS OF CONTRACTOR:

COUNTY OF MENDOCINO

By: _____
MAUREEN MULHEREN, Chair
BOARD OF SUPERVISORS

Date: _____

ATTEST:

DARCIE ANTLE, Clerk of said Board

By: _____
Deputy

I hereby certify that according to the provisions of Government Code section 25103; delivery of this document has been made.

DARCIE ANTLE, Clerk of said Board

By: _____
Deputy

INSURANCE REVIEW:

By: _____
Risk Management

Date: _____

COUNTY COUNSEL REVIEW:

APPROVED AS TO FORM:

By: _____
COUNTY COUNSEL

Date: _____

EXECUTIVE OFFICE/FISCAL REVIEW:

By: _____
Deputy CEO or Designee

Date: _____

Signatory Authority: \$0-25,000 Department; \$25,001- 50,000 Purchasing Agent; \$50,001+ Board of Supervisors

Exception to Bid Process Required/Completed _____

Mendocino County Business License: Valid

Exempt Pursuant to MCC Section: _____

MENDOCINO COUNTY

2024-10-08

Agreement for Lump Sum Bid

SECTION 00 50 00

PAGE 2 OF 2

**SECTION 00 50 10
WORKERS' COMPENSATION CERTIFICATION**

Pursuant to California Labor Code Section 1861, by submitting a bid, the Contractor hereby certifies the following:

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

SECTION 00 51 00

CONTRACTOR GUARANTEE

Agricultural – Farm Advisor Façade Entry Repair Project

Contractor hereby guarantees that the labor and material furnished for this project is in accordance with the drawings, specifications, and applicable building codes. Contractor agrees to repair or replace any or all of the work, together with any other adjacent work which may be displaced in so doing, that may prove to be defective in its workmanship or material within a period of ONE (1) YEAR from date of acceptance of the above-named project by County without any expense whatsoever to County, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of Contractor's failure to comply with the above-mentioned conditions within fifteen (15) calendar days after being notified in writing by County, Contractor authorizes County to proceed to have said defects repaired and made good at Contractor's expense. Contractor shall honor and pay the costs and charges therefore upon demand.

SIGNED _____

COUNTERSIGNED _____

CONTRACTOR _____

DATED _____

DATE OF BUILDING ACCEPTANCE _____

SECTION 00 70 00
GENERAL CONDITIONS

1. DEFINITIONS

Whenever in the Specifications and other Contract Documents the following abbreviations and terms are used, the intent and meaning shall be interpreted as follows:

- A. "Owner" - Board of Supervisors, County of Mendocino, or its authorized agents or assignees.
- B. "Agent" - The Agent acting for the County, which shall be either the County General Services Agency Director or his/her designee, or the County Executive Officer or his/her designee.
- C. "Contractor" - The person or persons, partnership, corporation, or combination thereof, private or municipal, who have entered into a contract with the County, as party or parties of the second part or his/her or their legal representatives.
- D. "Specifications" - The directions, provisions and requirements contained in these Specifications as supplemented by the Supplementary Conditions. Whenever the term "These Specifications" is used in this book, it means the provisions as set forth in this book.
- E. "Paragraph" - The particular section of subdivision herein designated by a number.
- F. "Laboratory" - The designated laboratory authorized by the County to test materials and work involved in the Contract.
- G. In the case of conflict between the Standard Specification and these Specifications, these Specifications shall take precedence over and be used in lieu of such conflicting portions:

A.W.S.	American Welding Society
A.S.T.M.	American Society for Testing Materials
A.S.A.	American Standard Association
N.B.F.U.	National Board of Fire Underwriters
N.B.S.	National Bureau of Standards
A.S.M.E.	American Society of Mechanical Engineers
A.R.I.	American Refrigeration Institute
N.E.M.A.	National Electrical Manufacturers Association
U.L.	Underwriter's Laboratories
E.T.L.	Electrical Testing Laboratories
A.C.I.	American Concrete Institute
F.A.	Federal Specifications
A.I.S.C.	American Institute of Steel Construction

- H. The County and the Contractor are those named as such in the Agreement. They are treated throughout the Contract Documents as if each were of the singular number and the masculine gender.
- I. When the words "Approved", "Satisfactory", or "Equal", "As Directed", etc. are used, approval by the County is understood.
- J. All Federal, State laws and local laws shall govern the construction of the Contract, and all rules, ordinances and requirements of authorized officials shall be complied with.
- K. It is understood that any reference to the Specifications or designation of the American Society for Testing Materials, Federal Specifications or other standard, code, or order, refers to the most recent or latest amended specification or designation.

2. EXAMINATION OF PLANS AND SPECIFICATIONS

The Bidder shall examine carefully the site of the work contemplated and the proposal, plans, specifications, and Contract forms thereof. It will be assumed that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and material to be furnished, and as to the requirements of these Specifications.

3. DRAWINGS AND SPECIFICATIONS

- A. Figured dimensions on the drawings shall govern but work not dimensioned shall be as directed. Work indicated but not particularly detailed or specified shall be equal to similar parts that are detailed or specified, or as directed. Full-size detailed shall take precedence over scale drawings as to shape and details of construction. It is intended that scale drawings, full-size details and specifications should agree, but should any discrepancy or apparent error occur in plans and specifications, or should any work of others affect this work, the Contractor shall notify the County at once; if the Contractor proceeds with the work affected without instruction from the County he shall make good any resultant damage or defect.
- B. All misunderstandings of drawings or specifications shall be clarified by the County, whose decision shall be final.
- C. Any work called for by the drawings and not mentioned in the Specifications, or vice versa, is to be furnished as though fully set forth by both. Where not specifically stated otherwise, all work and materials necessary for each unit of construction, including special construction for any specific brand or shape of material called for even though only briefly mentioned or indicated, shall be furnished and installed fully and completely as a part of the Contract.

- D. Lists, rules and regulations referred to are recognized printed standard and shall be considered as one and a part of these Specifications within the limits specified.
- E. "General Conditions" apply with equal force to all of the work, including extra work authorized.
- F. For convenience, the Technical Specifications are arranged in Divisions and further divided into various sections. It is to be understood, this separation is for convenience of all parties involved and is not to be considered as the limits of the work required of any separate trade. The terms and conditions of such limitations are wholly between the County and the Contractors during bidding and construction phases, i.e., all work shown, as well as for the proper completion of the project as a whole, shall be coordinated by the Contractor and his Subcontractors during bidding and construction and shall be provided in this Contract.

4. CONDUCT OF WORK

- A. The County reserves the right to do other work in connection with the project by contract or otherwise. Contractor shall at all times conduct his work so as to impose no hardship on the County or others engaged in the work. Contractor shall adjust, correct, and coordinate his work with the work of others so that no discrepancies shall result in the whole work.
- B. The Contractor shall provide at his own cost and risk all labor, material, water, power tools, machinery, scaffolding, and framework for the execution of the work. Equipment shall be adequate and as approved.

The Contractor shall obtain all necessary measurements from the work and shall check dimensions, levels, and construction and layout and supervise the construction, for correctness of all of which he shall be responsible.
- C. Where work of one trade joins or is on other work, there shall be no discrepancy when same is completed. In engaging work with other materials, marring or damaging same shall not be permitted. Should improper work of any trade be covered by another which results in damage or defects, the whole work affected shall be made good without expense to the County.
- D. The Contractor must anticipate relation of all parts of the work and at the proper time furnish and set anchorage, blocking or bonding as required. Anchorage and blocking necessary for each trade shall be a part of same, except were stated otherwise.
- E. Assistance required by the County in obtaining measurements or information on the work shall be furnished accurately and fully without cost to the County.

5. OWNERSHIP OF DRAWINGS

All plans and specifications shall remain the property of the County and shall be returned to the office of the County Facilities and Fleet Division Manager or shall be accounted for by the Contractor before the final certificate will be issued.

6. PUBLIC AND COUNTY CONVENIENCE AND SAFETY

The Contractor shall furnish, erect, and maintain such fences, barriers, lights and signs as are necessary to give adequate warning to the public at all times and of any dangerous conditions until final acceptance of the work by the County.

7. ACCIDENT PREVENTION

- A. It shall be the Contractor's responsibility to keep himself fully informed of all existing and future safety regulations, Codes, OSHA requirements, and other laws and regulations governing the work which may in any manner affect anyone in and around the project or engaged or employed in the work, or materials, equipment, etc. used in the work or which in any way affect the conduct of the work.
- B. The Contractor shall appoint a Safety Officer for the project and submit his name to the County.
- C. The Contractor shall supply the County with a Material Safety Data Sheet (MSDS) on each hazardous substance to be used by the Contractor on the project.
- D. The Contractor and his Safety Officer shall be solely responsible for insuring compliance with those Codes, regulations, OSHA requirements, and for discovering and correcting any code violations or unsafe conditions.
- E. Reports of all lost-time accidents shall be promptly submitted to the Owner, giving all pertinent information.

8. RESPONSIBILITY FOR DAMAGE

The County shall not be answerable or accountable in any manner for: (1) any loss or damage that may happen to the work or any part thereof, for any loss or damage to any of the materials or other things used or employed in performing the work; (2) injury to or death of any person or persons, either workers or the public; (3) damage to property from any cause which might have been prevented by the Contractor or his workers or anyone employed by him. The Contractor shall be responsible for any liability imposed by law for injuries to or death of any person including, but not limited to, workers and the public or damage to property resulting from defects or obstructions or from any cause whatsoever during the progress of the work or at any time before its completion and final acceptance. The Contractor shall indemnify, save harmless and defend the County of Mendocino, its elected or appointed officers, agents, employees or volunteers connected with the work,

from all claims or actions for injuries or death of any person, or damage to property, resulting from the Contractor's performance of the Contract. With respect to third party claims against the Contractor, the Contractor waives any and all rights to any type of express or implied indemnity against the County of Mendocino, its elected or appointed officers, agents, employees or volunteers.

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

9. LAWS TO BE OBSERVED

The Contractor shall keep himself fully informed of all existing and future State, Federal and local laws, codes and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies and tribunals having any jurisdiction or authority over the same and shall be solely responsible for insuring compliance with those laws, codes and regulations.

A partial, though not necessarily complete listing of laws to be observed by the Contractor is as follows:

- A. Federal Americans with Disabilities Act of 1990.
- B. Federal Labor Standards Act.
- C. The Anti Kick-Back regulations found in 29 CFR Part 3.
- D. All contract clauses required by 29 CFR 5.5 (a) and (c), 20 U.S.C. 1232b; 40 U.S.C. 276a, 276c, 327-332; 29 CFR Parts, (926).
- E. Nondiscrimination clause and Certification of Non-Segregated Facilities prescribed by Executive Order No. 11246, September 24, 1965, as amended by Executive Order 11375.
- F. Executive Order No. 11288 of July 7, 1966 (31 FR 9261) "Prevention, Control and Abatement of Water Pollution".
- G. Executive Order 11988, relating to evaluation of flood hazards.
- H. Compliance with all Federal, State and local requirements for handicapped access, fire safety and seismic resistance.

10. BONDS REQUIRED

The successful bidder shall furnish bonds as required in the document entitled "Instructions to Bidders" which is part of these Contract documents.

11. INSURANCE

The Contractor, at his expense, shall secure and maintain at all times during the entire period of performance under this Contract, insurance as set forth below with insurance companies acceptable to the County of Mendocino.

The Contractor shall provide to the County of Mendocino certificates of insurance with endorsements properly executed by an officer or authorized agent of the issuing insurance company evidencing coverage and provisions as stated below:

A. **INSURED**

Name the County of Mendocino, its elected or appointed officials, employees, agents and volunteers as additional insured with regard to damages and defense of claims arising from: (a) activities performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, (c) Premises owned, leased or used by the Named Insured, or (d) Ownership, operation, maintenance, use, loading or unloading of any vehicle owned, leased, hired or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the County of Mendocino, its elected or appointed officials, employees, agents and volunteers.

B. **SEVERABILITY OF INTEREST**

Provide that the inclusion of more than one named insured shall not operate to impair the rights of one insured against another insured, and the coverages afforded shall apply as though separate policies had been issued to each insured.

C. **CONTRIBUTION NOT REQUIRED**

Provide that as respects: (a) work performed by the Named Insured on behalf of the County of Mendocino; or (b) products sold by the Named Insured to the County of Mendocino; or (c) premises leased by the Named Insured from the County of Mendocino; or (d) ownership, operation, maintenance, use, loading or unloading of any vehicle owned, leased, hired or borrowed by the Named Insured, the insurance afforded by this policy shall be primary insurance as respects the County of Mendocino, its elected or appointed officials, employees, agents and volunteers; or stand in an unbroken chain of coverage excess of the Named Insured's scheduled underlying primary coverage. In either event, any other insurance maintained by the County of Mendocino, its elected or appointed officials, employees, agents and volunteers shall be excess of this insurance and shall not contribute with it.

D. COVERAGE BELOW MINIMUM REQUIRED NOTICE

Provide that the limits of insurance afforded by this policy shall not fall below the minimum requirements of the County of Mendocino without notice to the County of Mendocino by certified mail return receipt requested. Such notice shall be addressed to: County of Mendocino, 501 Low Gap Road, Ukiah, Calif. 95482, Attn: Risk Management.

E. CANCELLATION NOTICE

Provide that the insurance afforded by this policy shall not be suspended, voided, canceled, non-renewed or reduced in coverage or in limits except after thirty (30) day's prior written notice, delivered in person or by First Class U.S. Mail, has been given to the County of Mendocino. Such notice shall be addressed to: County of Mendocino, 841 Low Gap Road, Ukiah, Calif. 95482, Attn: Risk Management.

Contractor shall furnish to the County of Mendocino certificate(s) of insurance evidencing Workers Compensation Insurance coverage to cover its employees. The Contractor shall require all subcontractors similarly to provide Workers Compensation Insurance as required by the Labor Code of the State of California for all of the Contractor's and subcontractors' employees.

The Contractor shall not commence work, nor shall he allow his employees or subcontractors or anyone to commence work until all insurance required and provisions contained herein have been submitted to and accepted by the County of Mendocino. Failure to submit proof of insurance as required herein may result in awarding said Contract to another bidder. Failure to comply with the insurance requirements set forth herein shall constitute a material breach of contract and, at County of Mendocino's option, shall subject this Contract to termination.

Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve the Contractor for liability in excess of such coverage, nor shall it preclude the County of Mendocino from taking such other action as is available to it under any other provisions of this Contract or otherwise in law.

SCOPE OF LIABILITY COVERAGES

Contractor shall furnish to the County of Mendocino certificates of insurance evidencing at the minimum the following:

1. Public Liability-Bodily Injury (not auto) \$500,000 each person; \$1,000,000 each accident,
and
Public Liability-Property Damage (not auto) \$500,000 each occurrence;
\$1,000,000 aggregate.

---or---

Combined Single Limit Bodily Injury Liability and Property Damage Liability (not

auto) \$1,000,000 each occurrence.

2. Vehicle-Bodily Injury \$500,000 each person, \$1,000,000 each occurrence,
and
Vehicle-Property Damage \$1,000,000 each occurrence.
---or---
Combined Single Limit Vehicle Bodily Injury and Property Damage Liability
\$1,000,000 each occurrence.

12. WORKERS COMPENSATION CERTIFICATION

Contractor certifies as follows:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract". (Labor Code Section 1861)

13. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until the formal acceptance of the work by the County, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof or to materials or thing employed in doing the work or stored on the site by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, replace, and make good all injuries or damages to any portion of the work occasioned by any of the above caused before final acceptance and shall bear the expense thereof, except such injuries or damages occasioned by acts of the Federal Government or the public enemy. The Contractor's responsibility also extends to adjoining property as related to the construction operation.

14. RESPONSIBILITY OF COUNTY

The County shall not be held responsible for the care or protection of any material or parts of the work prior to final acceptance, except as expressly provided in these Specifications.

15. COOPERATION BETWEEN CONTRACTORS

Where two or more contractors are employed on related or adjacent work, each shall conduct his operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to work, to person or property, or for loss caused by failure to furnish the work within the time specified for completion.

Should the Contractor, through acts of neglect on the part of any Contractor, suffer loss or damage to the Work, the Contractor agrees to settle with such other Contractor by agreement. If such other Contractor should file claim against the County on account of alleged damages to be sustained, the County shall notify the Contractor who shall, at his expense, indemnify and save harmless the County against any such claim.

16. SUBCONTRACTING AND ASSIGNMENT

The Contractor shall give his personal attention to the fulfillment of the Contract and shall keep the work under his control. Should the Contractor subcontract any part of his Contract, the Contractor shall be fully responsible to the County for the acts and omissions of his subcontractor and of the persons either directly or indirectly employed by the subcontractor as he is for the acts and omissions of persons directly employed by himself.

No subcontractor will be recognized as such, and all persons engaged in the work on construction shall be considered as employees of the Contractor.

17. PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges and fees, and file all notices necessary and incidental to the due and lawful prosecution of the work.

18. PATENTS

The Contractor shall assume all responsibilities arising from the use of patented materials, equipment, devices or processes used on or incorporated in the work.

19. LIENS

Liens shall be enforced as provided by California State Law pertaining to Public Works.

20. CHANGES IN THE WORK

A. The County may order changes in the work, in which event the Contract sum shall be adjusted by one or more, or a combination of, the following methods:

1. Unit bid prices previously approved or as may be agreed upon.
2. An agreed lump sum substantiated by Contractor, itemizing labor, material, equipment, overhead, profit, bond, etc.
3. By ordering Contractor to proceed with work and keep correct account with vouchers the actual cost of:
 - a. Labor, including foreman.
 - b. Materials entering permanently into the work.

- c. The ownership or rental cost of construction plant and equipment during the time of use on the extra work.
 - d. Power and consumable supplies for the operation of power equipment.
 - e. Insurance.
 - f. Social Security and old age and employment contribution.
- B. To the cost under (2) and (3), there may be added a fixed fee to be agreed upon but not to exceed fifteen percent (15%) for the estimated cost of the work. The fee shall be compensation to cover the cost of administrative overhead, and profit.
- C. On changes which involve a credit to the County, no allowances for overhead need be figured.
- D. All such change orders and adjustments shall be in writing. Claims by Contractor for extra cost shall be made in writing before executing the work involved.
- E. All change orders shall be reviewed and approved by the County.

21. COUNTY'S RIGHT TO TERMINATE CONTRACT

If the Contractor should refuse or neglect to properly perform or prosecute the work or if he should substantially violate any provision of the Contract, then the County may, without prejudice to any other right or remedy upon seven (7) days written notice to the Contractor, terminate the services of the Contractor and take possession of the premises, and all materials, tools, and equipment thereon and complete the work. The expense thereof shall be deducted from the balance otherwise due the Contractor. If such expense should exceed such unpaid balance, then the Contractor shall pay the difference to the County.

22. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work is stopped for a period of thirty (30) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the work under a contract with the Contractor, or if the work should be stopped for a period of thirty (30) days by the Contractor because no certificate for payment has issued as provided in Paragraph 25 or because the County has not made payment thereon as provided in Paragraph 25, then the Contractor may, upon seven (7) additional days' written notice to the County, terminate the Contract and recover from the County payment for all work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and damages.

23. TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. In case all the work called for under the Contract is not completed before or upon the expiration of the time limit as set forth in these specifications, damage will be sustained by the County, and it is impracticable to determine the actual damage which the County will sustain in the event of and by reason of such delay. It is therefore agreed that the Contractor will pay to the County the sum of money per calendar day for each day's delay beyond the time prescribed as required in the document entitled "Instructions to Bidders", which is a part of these Contract Documents. The Contractor agrees to pay such liquidated damages as herein provided, and in case the same are not paid, agrees that the County may deduct the amount thereof from any money due or that may become due the Contractor under the Contract.
- B. In case the work called for under the Contract is not finished and completed in all parts and requirements within the time specified, the County shall have the right to extend the time for completion or not, as may best serve the interest of the County. If the County decides to extend the time limit for the completion of the Contract, the County shall further have the right to charge the Contractor, his heirs, assigns or sureties, and to deduct from the final payment for the work, all or any part, as it may deem proper, of the actual cost of County, including inspections, superintendence, and other overhead expenses directly chargeable to the Contract, and which accrue during the period of such extension. The cost of final inspections shall not be included in such charges.
- C. The Contractor shall not be assessed with liquidated damages nor the cost of County's services and inspection during any delay in the completion of the work caused by acts of God or the public enemy, acts of the County, fire, flood, earthquake, epidemics, quarantine restrictions, strikes, freight embargoes, shortages of materials, labor, fixtures or equipment (provided the Contractor furnishes satisfactory and acceptable proof that he has made diligent attempts to obtain same) and unusually severe weather or delays of subcontractors due to such causes, provided the Contractor shall within ten (10) days from the beginning of such delay notify the County in writing of the delay. County's findings of fact thereon shall be final and conclusive.
- D. The County agrees that changes in work ordered pursuant to Paragraph 20 and extensions of completion time made necessary by reasons thereof, shall in no way release any guarantee given by the Contractor or the Contract let hereunder, nor shall such changes in the work relieve or release the sureties on bonds executed pursuant to these specifications. Sureties shall be deemed to have expressly agreed to any change in the work and to any extension of time made by reason thereof.

24. ACCEPTANCE

- A. The Contract will be accepted as completed only when the whole and entire Contract shall have been completed satisfactorily to the County. In judging the work, no allowance for deviations from the original plans and specifications will be made unless already approved in writing at proper times and in a manner as called for herein.

- B. Should it become necessary to occupy a portion of the work before the Contract is fully completed, such occupancy shall not constitute acceptance.

25. PARTIAL PAYMENTS

Prior to submitting and as a condition of approval of the first progress payment application, the Contractor shall submit a schedule of values acceptable to the County providing a breakdown of the contract value by trade division such that the County can accurately assess the percentage completion of the project.

On the twenty-fifth (25th) day of each month, the Contractor shall submit to the County an application for payment, on a form acceptable to the County, showing an itemized statement for work that has been performed on a percent complete basis based on the previously approved schedule of values. The County within thirty (30) days of receipt of application that meets the County's approval shall issue to the Contractor a certificate for ninety percent (95%) of the amount the County finds due for work that has been performed.

Contractor shall submit certified copy of payroll showing payment of Davis-Bacon Act wages with each request for payment submitted.

26. FINAL PAYMENT

Upon completion of the Contract, the County will cause to be made a final estimate of the amount of work done, and the value of such work. After approval by the County representative, the County shall pay the remainder due on the contract (with the exception of retainage) after deducting there from, all previous payments. All amounts retained (retainage) under the provisions of the Contract shall be due and payable 30 days from the date of acceptance in writing of the completion of Contract and / or Notice of Completion issued by the County representative. All prior partial estimates and payments shall be subject to correction in the final estimate and payments. Payment and the final estimate is due within thirty-five (35) days from the recorded date of the Notice of Completion, provided all as-built drawings, equipment manuals, instructions to the owner and guarantees have been received and accepted by the County.

27. PAYMENT WITHHELD

The County may withhold or, on account of subsequently discovered evidence, may nullify the whole or part of any certificates to such extent as may be necessary to protect the County from (1) defective work not remedied, (2) asserted claims against Contractor, (3) failure of the Contractor to make payments properly to employees or for material or labor, (4) any reasonable doubt that the Contract work can be completed for the balance then unpaid, or (5) damage to another contractor.

28. FAULTY WORK AND MATERIALS

The Contractor shall promptly remove from the premises all materials condemned by the County as failing to conform to the Contract, whether incorporated in the work or not. The Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the County. The Contractor shall bear the expense of making good all work of other contractors destroyed or damaged by such removal.

If the Contractor does not remove such condemned work and materials within reasonable time, fixed by written notice, the County may remove them and may store the materials at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten (10) days thereafter, the County may upon ten (10) days written notice, sell such materials at auction or at private sales and shall account for the net proceeds thereof after deducting all costs and expenses that should have been borne by the Contractor.

29. TEMPORARY SUSPENSION OF WORK

The County shall have the authority to suspend the work wholly or in part, for such period as it may deem necessary, due to unsuitable weather or to such other conditions as are considered unfavorable for the suitable progression of the work, or for such time as it may deem necessary due to the failure of the Contractor to carry out orders given by County, or to perform any provision of the Contract. The Contractor shall immediately obey such order of the County and shall not resume work until ordered in writing by the County.

30. SAMPLES

When requested, the Contractor shall submit for the County's review samples of the various materials, together with the finish thereof, as specified for and intended for use in the work. Samples of bulk materials shall be selected by the lab. All materials and workmanship shall in all respects be equal to the samples so submitted and reviewed. Samples shall be sent or delivered to the County, samples and delivery charges paid by Contractor. Samples will be returned to the Contractor if requested, shipping or delivery charges collect.

31. CLEANING AND REMOVAL OF DEBRIS

The Contractor shall, as directed by the County during the progress of the work or as indicated elsewhere in these documents, remove and properly dispose of dirt and debris and shall keep the premises reasonably clean. Upon completion of the work, the Contractor shall remove all of his equipment and unused materials provided for the work and shall put the building and appurtenances in a neat and clean condition and shall do all cleaning and washing required by the specifications.

32. OBSTRUCTIONS

The Contractor may be required to work around public utility facilities and other improvements which are to remain in place within the construction area. The Contractor

shall be held liable to the owners of such facilities and improvements for any damage or interference with service resulting from the Contractor's operation.

The exact location of underground facilities and improvements within the construction area, whether shown on the drawings or not, shall be ascertained by the Contractor before using equipment that may damage such facilities or interfere with their service.

33. SUPERINTENDENT IN CHARGE

The Contractor shall keep on the work at all times and until the acceptance certificate is issued a competent superintendent or foreman for the purpose of receiving and executing without delay any orders from County in keeping with the terms of the Contract. This foreman shall have charge of the plans and specifications kept on the job. He shall be instructed to familiarize himself closely with all provisions of the plans and specifications and to follow the same accurately.

34. STORAGE OF MATERIALS AND EQUIPMENT

Materials and equipment shall not be stockpiled or placed outside of the site property lines unless written permission is obtained by the appropriate owner or political subdivision having jurisdiction over the adjacent property, roads, streets, etc.

35. GENERAL GUARANTY

Neither the final payment nor any partial payment, nor partial or entire use of the premises by occupancy by the County shall constitute an acceptance of the work not completed in accordance with the Contract. Final Payment or partial payment or partial or entire use of the premises by occupancy shall not relieve the Contractor of liability with respect to any warranties or responsibilities for faulty materials or workmanship. The Contractor shall remedy any defect in the work and pay for any damage to other work resulting therefrom which shall appear within a period of one (1) year from the date of final acceptance of the work, unless a longer period is specified elsewhere in these specifications. The County shall notify the Contractor of observed defects with reasonable promptness.

36. MATERIALS SUBMITTALS AND SUBSTITUTIONS

Materials and substitutions shall be governed by the relevant sections elsewhere in these documents. If not specified, the following shall govern.

- A. Specific reference to materials, appliances, fixtures and equipment by trade name is intended to be used as standard, but this implies no right on the part of the Contractor to use other materials, fixtures, appliances, equipment, until reviewed by the County.
- B. The County alone shall determine what will be considered as equal, but the burden of proof as to quality, utility and function, etc. shall be upon the Contractor.

If the Contractor desires to substitute any item, he shall in writing state the cost of such item and the original item named in the specifications if requested and shall submit a substitution warranty in the format shown in the specifications.

- C. As soon as practicable and within twenty (20) days after official award of Contract and before any fixtures, materials or equipment are purchased, the Contractor shall submit to the County a complete list of materials, fixtures and equipment giving the manufacturers' names, catalog numbers, etc., and, when requested, the original and substitute item of each article which he proposes to install as a substitution.
- D. Requests for substitution will not be considered after the above period of time unless the item specified is not obtainable or, in the opinion of the County, such substitution would serve the County's interest.

37. CONSTRUCTION, MATERIAL AND LABOR COST SCHEDULES

- A. The successful Contractor shall submit the following schedules to the County within ten (10) days after commencing the work:
 - 1. A construction schedule indicating the start and finish of each phase of the work.
 - 2. A detailed statement of the cost of material and labor included in the original estimate for each phase of the work so arranged that the value of the work as it progresses may be readily determined.

38. CONFERENCES

At any time during the progress of the work, the County may request the Contractor to attend a conference of any or all of the Contractors engaged on the work, and any notice of such conference shall be duly observed and complied with by the Contractor.

39. INSPECTION AND PAYMENTS - NOT ACCEPTABLE

The fact that the work and materials have been inspected by the County of Mendocino and payments on account have been made does not relieve the Contractor from the responsibility of replacing and making good any defective work or materials that may be discovered within one (1) year from the date of the completion of the work by the Contractor and its acceptance by the County. [Five (5) years for roof.]

40. RETURN OF DRAWINGS AND SPECIFICATIONS

All plans and specifications shall be returned to the Office of the County Director of General Services or shall be accounted for by the Contractor before the final certificate will be issued.

41. ARRANGEMENT OF SPECIFICATION SECTION

- A. For convenience, these specifications are arranged in several sections, but such separation shall not be considered as limiting any work required to a particular trade. The Contractor shall in cooperation with other contractors establish responsibility for any work required by the plans and specifications which may be improperly arranged or not included in the appropriate section.
- B. In areas where one trade meets another for joining, the Contractor is responsible to be certain that all work shown is included in his bid.

42. QUALITY OF MATERIALS AND LABOR

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 not meeting these standards shall be removed. The County may refuse to issue any certificate of payment until all defective materials or work have been removed, and other material of proper quality substituted therefor.

43. INCOMPETENT WORKERS

If at any time any foreman or worker who shall be employed by the Contractor shall be declared by the County to be incompetent or unfaithful in executing the work, the Contractor, on receiving written notice, shall forthwith initiate appropriate action to dismiss such person from the work.

44. COUNTY TO DECIDE

All matters of color, texture, design, interpretation of plans and specifications shall be referred by the Contractor to County, whose decision thereon shall be final.

45. CODES

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 California Electric Code; the California Building Code; California Mechanical Code; the California Fire and Plumbing Codes; OSHA and other applicable State and local codes and laws. Nothing in these plans or specifications is to be construed to permit work not conforming to these Codes.

46. PAYMENT OF FEDERAL, STATE OR LOCAL TAXES

Any Federal, State or Local tax payable on articles furnished by the Contractor under the Contract shall be included in the Contract price and paid by the Contractor.

47. LIMITATIONS OF HOURS OF WORK

Eight (8) hours labor constitutes a legal day's work. The Contractor shall forfeit as a penalty \$25.00 for each worker employed in the execution of the Contract by the Contractor for each calendar day which such worker is required or permitted to work more than eight (8) hours in one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of the California Labor Code, and in particular Sections 1810 and 1816. Work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one (1) week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1 & 1/2) times the basic rate of pay, as provided in Section 1815.]

48. PAYMENT OF NOT LESS THAN THE GENERAL PREVAILING RATE OF PER DIEM WAGES

- A. The Contractor shall pay his workers on all work included in this Contract not less than the general prevailing rate of per diem wages for legal holiday and overtime work in said locality. Such per diem wages shall not be less than the stipulated rates contained in a schedule thereof which has been ascertained and determined by the State Director of Industrial Relations to be the general prevailing rate of per diem wages for each craft or type of worker needed to execute this Contract.
- B. The Contractor shall comply with Labor Code Section 1775. In accordance with Section 1775, the Contractor shall forfeit as a penalty twenty-five dollars (\$25.00) for each calendar day or portion thereof, for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed for any work done under the Contract in violation of the provisions of the Labor Code in particular Labor Code Sections 1770 and 1780. In addition to said penalty, and pursuant to Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

49. LABOR CODE CLARIFICATION

It is to be understood that references to the California Labor Code shall mean the current Code or as may be amended during the period of the Contract.

50. NOTIFICATION OF READINESS FOR REQUIRED TESTS AND INSPECTIONS

The Contractor shall be responsible to notify all inspectors, testing agencies, and County representatives a minimum of seventy-two (72) hours before required tests and/or inspections.

51. RESPONSIBILITY FOR PROJECT SAFETY AND CONSTRUCTION TECHNIQUES

the portion or portions of the structure, improvement or equipment which will be deemed so occupied or used.

54. COMPLIANCE WITH HANDICAPPED ACCESS LAWS

- A. It is the County's intent for all features on these plans and specifications to conform to applicable regulations for the accommodations of physically handicapped persons in buildings and facilities used by the public, whether or not said plans and specifications so conform.
- B. It shall be the responsibility of the manufacturers, suppliers and distributors to insure that all manufactured and fabricated products, devices and items they supply for this project conform to applicable regulations of Title 24 of the California Code of Regulations.
- C. When shop drawings and/or manufacturers product literature, and other matters subject to handicapped regulations are submitted to County, the following shall be provided:
 - 1. Statement that the item shown complies with the handicapped regulations of Title 24 of the California Code of Regulations.
 - 2. Show all required dimensions, heights, clearances, and locations that must be followed when items are installed on project.

55. CONTRACT AMBIGUITY

This Contract shall be deemed to have been prepared jointly by the parties signing the Contract and if any inconsistencies or ambiguities exist, they shall not be interpreted or construed against any of the parties as the drafter.

56. FAIR EMPLOYMENT PRACTICES/NONDISCRIMINATION

The Contractor shall comply with Federal and State Fair Employment Practices provisions.

The Contractor, in connection with performance of work under this agreement, agrees to comply with the rules and regulations which deal with or relate to nondiscrimination set forth as follows:

- 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 race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex or age, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition,

marital status, age, or sex. Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination.

- B. The Contractor shall comply with the provisions of the California Fair Employment and Housing Act (Gov. Code, sections 12900 *et seq.*), the regulations promulgated thereunder (2 Cal. Code of Regulations sections 7285.0 *et seq.*), and Government Code Sections 11135 - 11139.5).
- C. The Contractor shall permit access by representatives of the Department of Fair Employment and Housing and the County upon reasonable notice at any time during the normal business hours, but in no case less than 24 hours notice, to view such of its books, records, accounts, other sources of information and its facilities as said Department or County shall require to ascertain compliance with this clause.
- D. The Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.
- E. The Contractor shall include the above nondiscrimination and compliance provisions in above subparagraphs A and B in all subcontracts to perform work under the Contract.

END OF SECTION

SECTION 00 81 10

UNFORESEEN PHYSICAL CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY

This Section includes special requirements for unforeseen hidden conditions, differing site conditions and underground facilities as required for California Public Works Contracts.

1.2 UNFORESEEN SITE CONDITIONS

A. Pursuant to Section 7104 of the California Public Contract Code, if any of the following conditions, hereinafter called hidden conditions, are encountered at the site, then Contractor shall promptly, before such conditions are disturbed and in no event later than three (3) days after discovery, notify County in writing using the "Hidden Conditions Report" attached to this Document:

1. Material that Contractor believes may be hazardous waste material, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or a Class III disposal site in accordance with provisions of existing law.
2. Subsurface or latent physical conditions at the site or in the building differing materially from those represented in the Contract Documents.
3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents or conditions that could be observed by examination of the site and the Reference Documents.

B. Conditions that are not unforeseen, hidden, unknown or differing site and building conditions include but are not limited to, the following.

- Documents.
1. All that is indicated in or reasonably interpreted from the Contract Documents.
 2. All that is indicated in or reasonably interpreted from the Reference Documents specified in Section 01010, "Summary of Work".
 3. All that could be seen on site and that could be observed.
 4. Conditions that are materially similar or characteristically the same.

5. Conditions where the location of the building component is in the proximity were indicated in or reasonably interpreted from the Contract Documents or Reference Documents.
- C. County will promptly investigate the conditions reported which appear to be unforeseen conditions.
1. If County determines that the reported conditions are inherent in work of the character provided for in the Contract Documents or observed by examination of the site and Reference Documents, or that the condition is not hidden, unforeseen or materially different, Contractor shall execute the Work at no additional cost to County.
 2. If County determines that the conditions are hidden or differing conditions and that they will materially cause a decrease or increase in Contractor's cost of any portion of the work, a Contract Modification will be issued for compensation of such portion of the work as provided in the General Conditions.
 3. If County determines that the conditions are hidden or differing conditions and that they will materially affect the performance time, Contractor, upon submitting a written request, will be granted an extension of time subject to the provisions of the General Conditions.
 - a. Time extensions or contract costs will not be granted for delays that could be or could have been avoided by Contractor redirecting his forces and equipment to perform other work on the Contract.
- D. Should Contractor disagree with County's determination, Contractor shall submit a Request for Change (RFC) to County that the condition is not indicated in or reasonably interpreted from the Contract Documents, and that the condition is not similar in character to the material that could have been observed by examination of the site and Reference Drawings, but that the condition is materially different and the condition is unforeseen and unknown.
1. Contractor shall submit proof with written explanation, drawings, photographs, material and labor cost breakdowns, and other relevant data to show the condition.
 2. County will review Contractor's submission and make a determination. Contractor shall not file for claim or RFC before County makes the determination.
 3. In the event of continued disagreement, Contractor shall not be excused from any scheduled completion date provided for by the Contract but shall proceed with all work to be performed under the Contract.

4. Contractor shall retain any and all rights provided either by the Contract or by law which pertain to the resolution of RFC and protests between the contracting parties.

1.3 REMOVAL, RELOCATION, OR PROTECTION OF EXISTING UTILITIES

- A. In accordance with the provisions of Section 4215 of the California Government Code, County will assume the responsibility for the removal, relocation, or protection of existing main or trunk-line utilities located on the site of the Contract work, if such utilities are not identified in the Contract Documents.
- B. Contractor shall immediately notify County and the public utility in writing of such utility facilities it discovers while performing the work which are not identified in the Contract Documents.
 1. Contractor shall negotiate with the owner of the utility, who shall have the sole discretion to perform repairs or relocation work or permit Contractor to do such repairs or relocation work at a reasonable price.
- C. Contractor shall not be assessed liquidated damages for delay in Substantial Completion if the delay was caused by such existing utilities in direct conflict with the work and not shown on the Drawings.
- D. Contractor will be compensated under the provisions of Article 7 for extra work involving existing utilities not shown on the Drawings or included in the Specifications but in direct physical conflict with Contractor's operations.
 1. This extra work shall include the following costs:
 - a. Locating, supporting, working around, and protecting or repairing damage not due to the failure of Contractor to exercise reasonable care.
 - b. Removing and relocating, as directed by County, existing main or trunk line utility facilities located on site but not indicated on the Drawings and Specifications with reasonable accuracy.
 - c. Equipment on the project necessarily idled during such work.

- E. Contractor shall not be entitled to any adjustment in the Contract Sum or Time if the existence of such condition:
1. Could have been reasonably discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Contract Documents to be conducted by or for Contractor prior to commencing such work, or
 2. Could have been inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the work site.

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

END OF SECTION

SECTION 00 85 10

DRAWINGS INDEX

Title: **Agricultural – Farm Advisor Entry Façade Repair Project**

Issue Date: October 8, 2024

A0.0	COVER
AS1.0	Reference Site Plan
AD1.0	Demolition Floor Plan & Elevation
A1.0	Overall Floor plan
A2.0	Enlarged Floor Plan
A3.0	Exterior Elevations
A4.0	Building Sections
A5.0	Details
S0.1	Structural Notes and Plans

END OF SECTION

SECTION 01 01 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A. The General Conditions and Division 1 - General Requirements apply to the Work of all Sections.
- B. Contractor is hereby specifically directed to notify and apprise all subcontractors and other parties engaged in the Work as to the Contents of the General Conditions, Division 1 - General Requirements, and Division 2 – 32.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work shall be performed at a Project site located in Mendocino County at 890 N. Bush St. Ukiah, CA 95482
- B. The Work of this Contract comprises the removal of dry rot and reconstruction of the main entry supports per the project plans and specifications.

Scope of Work shall include but not be limited to:

1. Provide all labor, materials, and equipment for the demolition of existing stucco and rotted framing and railings; replacement of structural support columns and beams including foundation and connections to the remaining structure; and replacement of framing, furring, backing, architectural column covers, stucco and railings and related work.
2. The work shall be performed as depicted in the drawings, as described in the project manual or as necessary for a complete and proper installation. The extent of the work as indicated on the Drawings and as described in the Specifications shall include all that may be reasonably inferred to be required for proper execution or installation of work. Present to the County, at the close of project, signed copies of all required permits indicating successful completion of all permit requirements.
3. Should the General Conditions or Contract Documents contradict themselves, Contractor shall provide the more stringent or higher quality or quantity unless otherwise approved by County.

4. The Drawings shall be recognized as diagrammatic in nature and not completely descriptive of all requirements for construction. Whatever work may be specified, and not drawn, or drawn and not specified, is to be executed as fully as if described in both these ways; and should any workmanship or material be necessary which is not either directly or indirectly noted in these specifications, or shown on the Drawings, but is nevertheless necessary for the purpose of properly carrying out the obvious intention thereof, Contractor is to understand the same to be implied, and is to provide for the same in its bid, as fully as if it were particularly described or delineated.

1.3 TYPE OF CONTRACT

- A. Contractor shall construct the Work under a single fixed-price Contract.
 1. Where the term "Contractor" is used in the Specification, the General Contractor is referred to.
 2. Where the terms "Plumbing Contractor," "Electrical Contractor," etc., are used, it has been for convenience only and in no way affects the overall responsibility of the General Contractor.

1.4 PRECEDENCE OF DOCUMENTS

- A. In the case of discrepancy or ambiguity in the Contract Documents the following order of precedence shall prevail:
 1. Modifications in inverse chronological order and in alphanumeric order.
 2. Signed Agreement and terms and conditions referenced in the Signed Agreement.
 3. Supplemental Conditions.
 4. General Conditions.
 5. Specifications.
 6. Drawings.
 7. Written numbers and figures, unless obviously incorrect.
 8. Figured dimensions over scaled dimensions.
 9. Large format drawings over small-scale drawings.

- B. Any conflict between a bill or list of materials shown in the Contract Documents and the actual quantities required to complete the Work required, then the actual quantity shall take precedence.

1.5 USE OF PREMISES

- A. General: Comply with requirements in General Conditions and Section 01500.
- B. Area available for Contractor's use for work and storage, if any, is limited to the area designated by the County.
- C. Work to be performed is within a temporarily closed county-owned public park. Contractor shall ensure that no members of the public are within the park prior to commencing each day and throughout the day.
- D. Fire Department Access: Contractor's use of premises shall not limit required Fire Department access.

1.6 EXAMINATION

- A. General: As stipulated in Document 00100, Contractor is responsible for inspection of the existing site conditions and bidding documents prior to bidding and shall include in their bid any modifications of the Contract Documents required as a result of Contractor's inspection.
- B. Persons performing work shall examine conditions that affect their work and shall report in writing to Contractor, with a copy to County, conditions detrimental to work.
 - 1. Failure to examine and report makes the person responsible, at no increase in the Contract Sum, for corrections necessary for the proper installation of their work.
 - 2. Commencement of Work constitutes acceptance of existing condition.
- C. Field Verification: Contractor shall verify all existing conditions in the field prior to commencing the Work.

1.7 PERMITS FOR WORK

The Contractor is responsible for fulfilling all permit requirements for the completion of the work.

1.8 LISTING OF RELATED WORK

Listings of related work or sections in the various Sections are not necessarily complete listings. They are provided for information and convenience only and are intended to highlight related or similar work which is specified in other Sections. Related work listings and omissions from such listings are not intended to control Contractor in dividing the work among subcontractors or in establishing the extent of the work to be performed by any trade.

1.9 REQUEST FOR INFORMATION (RFI)

- A. Requirement: It is Contractor's responsibility to review Contract Documents a minimum of Fifteen (15) days in advance of the work to be executed, and to request information so that County will have sufficient time to respond to Requests for Information prior to the start of actual construction of that part of the Work to which the RFI relates. Contractor shall be responsible for all delays, disruptions and other related impacts as a result of untimely RFI's submitted to County.
- B. Contractor shall coordinate all requests for information to prevent duplication. Requests for information that are duplicative, uncoordinated with each other, or do not allow for a reasonable time for response will be returned to Contractor.
 - 1. Contractor shall promptly notify County in writing of any discrepancies and shall not proceed with the Work until such discrepancies have been resolved.
 - 2. Failure to notify County shall not relieve Contractor of its responsibility for resulting damage and/or defect, and for the cost of any corrective work that may be required due to Contractor's failure to notify.
- C. Contractor shall prioritize RFI's and request a response based on its most current and accepted CPM schedule.
- D. Form:
 - 1. When an interpretation or clarification of the Contract Documents is required from County, Contractor shall make the request on a copy of the RFI form included in the end of this section.
 - 2. Contractor shall fill in all applicable information on the form.

3. Contractor shall limit the subject to one design discipline to expedite reply and attach supplementary information where necessary.
4. County will reply or give summary of reply on the same form and include supplementary information where necessary.
5. The completed form shall be the written record of each RFI.
6. Contractor shall not use any other RFI form on this Project.

E. Uses:

1. The RFI form shall be used for interpretation or clarification of the Contract Documents only.
2. Contractor shall not use the RFI form for the following: County will not reply and will reject the RFI:
 - a. Product or material substitution.
 - b. Questions relating to construction means, methods, techniques, sequences, procedures or safety precautions. (These are Contractor's responsibilities exclusively.)
 - c. Questions relating to construction schedule, coordination between trades, or division of work among subcontractors. (These are also Contractor's responsibilities exclusively.)
 - d. Questions on contract administration procedural matters, unless they require interpretation or clarification of the Contract Documents.
 - e. Dimensions or quantities which are shown on the Contract Documents, or which can be measured from the building, or calculated from the information contained in the Contract Documents.
 - f. Confirmation of interpretations or clarifications previously provided by County.

F. Reply:

1. County will endeavor to reply to all RFI's promptly as work schedule of the consultants allows; generally, no later than fifteen (15) days from the day received.

2. When an RFI involves a complex subject, extensive research or development, or substantial input from other governmental agency, County will inform Contractor and request additional time to prepare the reply. Contractor shall cooperate and agree to a reasonable time extension.
3. The reply shall be a clarification or an interpretation of the Contract Documents; the reply is not an authorization of change in the Contract Sum or Time.
4. Such written interpretation or clarification will be binding on Contractor and County. If County or Contractor believes that a written interpretation or clarification justifies an adjustment in the Contract Sum or Time, then County or Contractor may make a written request for change therefor as provided in the General Conditions, Article 1.07.

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

END OF SECTION

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements to permit evaluation of existing conditions before defining the required scope for each allowance item and final direction that will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Force account allowances.
- C. Related Requirements:
 - 1. Section 00310 "Bid Form"
 - 2. Section 00700 "General Conditions" for Changes in the Work
 - 3. Section 00811 "Unforeseen Physical Conditions" for definition of hidden conditions.

1.3 SURVEY AND ASSESSMENT

- A. Base bid includes all labor, materials, and equipment for demolition, dry rot removal, remove and replace railing, and remove and replace post columns and beam indicated on plans and required to complete the work. Prior to and during dry rot removal, the Contractor shall coordinate observation of the condition of remaining structural members not proposed to be removed with the Architect and the County.
- B. In consultation with the Contractor and the Architect, the County will determine the extent of additional dry rot removal to be completed and provide direction to the

contractor. Should additional dry rot removal be required, the County will provide the Contractor with a Request for Proposal. The Contractor shall promptly provide a Lump Sum or Unit Cost Proposal in accordance with Section 00700 General Conditions, Chapter 20 – Changes in the Work.

- C. In the event that a proposal is not authorized by the County, the County may direct the contractor to proceed with the authorized work by Force Account in accordance with Section 00700 – General Conditions, Chapter 20.
- D. In the event other unforeseen conditions are encountered, the Contractor shall promptly notify the County and Architect and proceed according to paragraph 1.3B. above.

1.4 ACTION SUBMITTALS

- A. Submit proposals for the work noted above.
- B. Upon completion of identified repairs, submit revised Schedule of Values noting allowance amounts used.

1.5 INFORMATIONAL SUBMITTALS

- A. Submit timecards, invoices or delivery slips to show actual labor time and quantities of materials delivered to the site for use in completing allowance work authorized under force account.
- B. Coordinate and process submittals for allowance work items in same manner as for other portions of the Work.

1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work.

1.7 ALLOWANCE ITEMS

- A. Provide for each allowance item on the schedule of Values.
- B. Use the allowances only as directed by the County for labor, materials, and equipment remove dry rot or provide work to resolve unforeseen conditions, by unit cost, lump sum price or force account authorized in writing by the owner.
- C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between the authorized cost of all repairs completed and the allowance amount.
 - 1. If requested, include cost of lump sum proposals for the work performed.
 - 2. Submit substantiation of any force account work related to allowance work authorized in advance by the owner.

- B. Submit Contract Change Order to refund the balance of the Allowance to the County or claims for increased costs for work performed on authorized work items that exceed the allowance amount included in the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing conditions at the time work is to be performed to verify that the conditions are suitable for the work under the allowances. Immediately report all unsatisfactory conditions to the County.

3.2 PREPARATION

- A. Submit and secure approval of all labor, materials, and equipment to additional dry rot removal costs prior to beginning work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No.1: Additional Dry Rot Removal or Unforeseen Conditions: Include the sum of \$10,000 for labor, materials, and equipment to remove dry rot or to resolve unforeseen conditions encountered during the project.
 - 1. This allowance includes labor, material, equipment costs and Contractor overhead and profit documented for either lump sum or force account work to complete authorized additional dry rot removal, or to address other unforeseen conditions.

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 – GENERAL

1.01 SCOPE

- A. Prior to Bidding, items will be considered for substitution of specific items specified within specification divisions 02 through 33, with the exception of items identified as a “County Standard”.
- B. No substitution for any product or material shall be considered for, “As Equal Status” unless submitted to the Owner and the Architect, in a written format 10 days prior to the project bidding. The Architect will give written response to a product being considered as an equal and acceptable for inclusion in the Bid. The Architect shall be the final authority of a product or material being considered “as equal”.
- C. Work Included: Work substituted for Work specified in divisions 02 through 33 shall meet the requirements of this section, and if approved shall be submitted in the Bid Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Section 01 33 00 SUBMITTAL REQUIREMENTS

1.03 SPECIFIED WORK:

- A. Contractor's Options:
 - 1. Product specified only by reference standards: Select any product meeting standards.
 - 2. Product specified by naming several products and/or manufacturers: Select any product and/or manufacturer named.
 - 3. Product specified by naming several products and/or manufacturers and reference standards: Select any product meeting standards. Product and/or manufacturer names indicate products and/or manufacturers which meet standards.
 - 4. Product specified by naming only product: Select product specified.
 - 5. Product specified by naming one or more products and stating "or pre-approved equal to": Select any product named or submit request for substitution for a specific product not specifically named in accordance with section 1.04 herein entitled Substitution Request.

1.04 SUBSTITUTION REQUEST:

- A. Cost to Contractor or Bidder for review of Substitution Request:

1. Each review of a Substitution Request by the Architect will be billed to the submitter (Contractor or Bidder) at the rate of \$80.00 per hour, two hours minimum for each review, whether approved or rejected.
 2. The Architect may waive the review cost if in the Architect's sole opinion, the submittal was complete and the time involved in the review was not substantial, and it was in the best interest of the Owner.
 3. All Substitution Requests shall be made in "first generation" electronic PDF format providing clean, legible, and searchable manufacturers product literature and typed request form (see below).
 4. Manufacturer's literature which is not clearly identified as a request for an Equal or Substitution, will not be considered or accepted as a valid request for an Equal or Substitution, nor does it constitute an approval.
- B. Content of Request:
1. Complete the attached Substitution Request Form substantiating compliance of proposed substitution with Contract Documents.
 2. For products, attach to the Substitution Request Form:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature including product description, performance and test data and reference standards.
 - c. Samples.
 - d. Data/sample of specified item must accompany substitute data/sample
 3. For construction methods, attach to the Substitution Request Form:
 - a. Detailed description of proposed methods.
 - b. Drawings illustrating methods.
 4. Attach to the Substitution Request Form an itemized comparison of proposed substitution with product or method specified.
- C. In making request for substitution, Contractor attests that:
1. The proposed product or method has been personally investigated and determined to be equal or superior in all respects to that specified.
 2. The same guarantee or warranty will be provided for substitution as for product or method specified.
 3. The Contractor will coordinate installation of accepted substitution into Work, making such changes as may be required for Work to be complete in all respects.
 4. The Contractor waives all claims for additional costs related to substitution which subsequently become apparent.
- D. Submit first generation electronic PDF format of substitution request for approval.

1.05 ACCEPTANCE OF SUBSTITUTIONS:

- A. Procedures:

1. The Contract is based on materials, equipment, and methods described in the Contract Documents.
2. Architect will consider proposals submitted in accordance with Section 1.04 herein entitled Substitution Request.
3. Substitutions will be considered when submitted a minimum of 14 days prior to bid opening.
4. Owner and Architect is solely responsible for judging the acceptance of substitutions.
5. Substitute materials, equipment, or methods shall not be used unless such substitution has been specifically approved for this Work by the Architect.
6. Substitutions will not be considered if:
 - a. They are indicated or implied on product submittals without formal request submitted in accordance with section 1.04 above.
 - b. Acceptance will require substantial revision of Contract Documents.
 - c. They are submitted following the bid opening, unless the specified item has been verified to be discontinued or is otherwise unavailable, or the Owner desires a cost savings for the product or system.
 - d. Originally specified item data/sample is not included with data/sample of requested substitute.

PART 2 – PRODUCTS

2.01 SUBSTITUTION REQUEST SUBMITTAL

- A. See the form attached to the end of this section.
- B. The Contractor's submission shall include, but is not limited to, Samples, Manufacturer's Data, Shop Drawings, or other such items, which are not clearly identified as a request for an Equal or Substitution.
- C. Contractor shall provide a comparison chart identifying the differences, similarities, and cost implications between the specified product, material, or method and the proposed.

PART 3 – EXECUTION

3.01 GENERAL

- A. The attached two page form will be reproduced by the Contractor or any of the subcontractors for any and all proposed substitutions. No other forms will be accepted.
- B. The attached form shall be filled in electronically or typed and provided as a cover letter with each request for review of substitution or equal.

- C. All documentation provided for review of substitution or equal shall be submitted in "first generation" electronic PDF format providing clean, legible, and searchable manufacturers product literature.
- D. Product literature shall include all relevant data needed to evaluate the requested substitution.

SUBSTITUTION REQUEST FORM
PRIOR TO SUBMITTING BID

TO: Mendocino County (Owner); Bid Number _____

PROJECT: _____

CONTRACTOR MAKING REQUEST: _____

We hereby submit for your consideration the following product instead of the specified item for the above project:

PRODUCT OR MATERIAL: _____

SPECIFICATION SECTION or DETAIL: _____

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION:

Attached data includes product description, specifications, drawings, photographs, performance, and test data adequate for evaluation of the request; of both the specified product and the proposed substitution product, with applicable portions of the data clearly identified in a side by side comparison chart.

Attached data also includes a description of changes to the Contract Documents which the proposed substitution will require for its proper installation.

Bidder shall address the following items on a separate sheet attached to the Substitution Request Form as needed.

1. Will Substitution affect dimensions indicated on Drawings? (Yes) (No)

If yes, how?

2. Will Substitution affect Electrical, Mechanical, Structural Frame, Architectural, etc?
3. Is weight greater/lesser than specified item?
4. What affect will substitution have on other trades?
5. Comparison between proposed and specified item (similarities/differences)?
6. Manufacturer's guarantee/warrantee for proposed substitution.
7. Provide UL, WHI, (or other) listing / Rating of proposed assembly.
8. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings.
2. The undersigned will compensate the Architect at a rate of \$80.00 per hour for changes required to the building design, including engineering design, detailing, and construction costs caused by the requested substitution. The Architect is herein defined as any of those firms or individuals listed by reference on the Drawings, including all Consultants identified herein.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. Attach all cost data with explanations if different from Specified or Drawing item. Include in that explanation a discussion on quality of proposed substitution and cost differential.
6. The undersigned will pay for any subsequent changes in incorporating the proposed substitution that were not apparent at the time of approval into the Work, including compensation to the Architect as described in item 2 above.

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

Submitted By:

Signature _____

For Use by Design Consultant

Firm _____

Accepted _____

Accepted as Noted _____

Address _____

Not Accepted _____

Received Too Late _____

Date _____

By _____

Telephone _____

Date _____

Remarks: _____

**MENDOCINO COUNTY
ENTRY FAÇADE REPAIR
890 N. BUSH STREET
UKIAH, CA 95482**

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.01 DESCRIPTION

- A. To ensure that specified products are furnished and installed in accordance with Drawings and Specifications, transmittal procedures have been established for submittals for review by the Owner.
- B. Make all following submittals in strict accord with provisions of this Section and with requirements of the General Conditions of the Contract for Construction.
 - 1. Progress Schedule and Reports; including the Schedule of Values
 - 2. Product Certification
 - 3. Shop Drawings
 - 4. Descriptive Data/Material Lists
 - 5. Samples
 - 6. Substitutions
 - 7. Construction Waste Estimate
 - 8. Certification of Recycled Content
 - 9. Photography
 - 10. Alteration Project Procedures

1.02 RELATED REQUIREMENTS

- A. Section 00 70 00 General Conditions
- B. Section 01 74 19: Construction Waste Management; submittal of Construction Waste Estimate
- C. Section 01 77 00: Closeout Procedures; Submittal of operating and maintenance manuals, record documents, guaranties/warranties, Construction Waste Management Report, Owner Agency Buy Recycled Campaign Procurement Summary, and other closeout documentation
- D. Test Reports: Pertinent Specification Sections
- E. Individual Submittals Required: Pertinent Specification Sections

1.03 DEFINITIONS:

- A. Shop Drawings and Product Data are as indicated in the General Conditions and include, but are not limited to, fabrication, erection, layout and setting drawings, formwork and falsework drawings, manufacturers' standard drawings, descriptive literature, catalogues, brochures, performance and test data, wiring and control diagrams. In addition, there are other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment, or

systems and all positions conform to the requirement of the Contract Documents, including, without limitation, the Drawings.

- B. "Manufactured" applies to standard units usually mass-produced; "fabricated" means specifically assembled or made out of selected materials to meet design requirements. Shop Drawings shall establish the actual detail of manufactured or fabricated items, indicated proper relation to adjoining work and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
- C. Manufacturer's Instructions: Where any item of Work is required by the Contract Documents to be furnished, installed, or performed, at a minimum, in accordance with a specified product manufacturer's instructions, the Contractor shall procure and distribute copies of these to the Owner, the Architect, and all other concerned parties and shall furnish, install, or perform the work, at a minimum, in accordance with those instructions.

PART 2 – PRODUCTS

2.01 GENERAL REQUIREMENTS:

- A. All information provided as part of any submittal shall consist of first-generation electronic files in Portable Document Format (.pdf) on CD, DVD, or flash drive, name and location of project, name of Contractor, work order and contract numbers, and cross references to contract documents. Contractor shall obtain original product data from manufacturers wherever possible. Submittals will be delivered, reviewed, and distributed electronically in .pdf file format.
 - 1. Product samples and physical color samples shall be delivered to Owner in person in hard copy format described in the pertinent specification section.
- B. Number each submittal with a unique consecutive number. Any resubmittal required for a specific submittal number shall maintain the original submittal number appended with an alpha character.
- C. Each submittal shall begin with a cover page filled out with the correct information and provide the contractor's review and incorporation stamp and signature. See sample cover page below.
 - 1. Each resubmittal shall have a new cover page included as the first page with the resubmittal number updated.
- D. Time for completion of Work shall not be extended on account of Contractor's failure to promptly submit Shop Drawings, Product Data, and/or Samples.
- E. Reference numbers on Shop Drawings shall have Architectural and/or Engineering Contract Drawings reference numbers for details, sections, and "cuts" shown on Shop Drawings. These reference numbers shall be in addition to any numbering system that Contractor chooses to use or has adopted as standard.

2.02 PROGRESS SCHEDULE

- A. Prepare and submit Progress Schedule of operations as required by Section 00 70 00.
- B. Relate Progress Schedule to entire Project. Indicate dates for submission of required submittals.
- C. Submit Schedule of Values with Progress Schedule. Refer to General Conditions of the Contract for Construction, Contractor's Progress Schedule, and to Section 00 70 00, Progress Schedules and Reports, for additional cost breakdown requirements.

2.03 PRODUCT CERTIFICATIONS

- A. Where specifically indicated by pertinent Specification Sections, submit proper certification by recognized producer or association. Certifications shall attest to product's compliance with requirements of Contract Documents.

2.04 SHOP DRAWINGS

- A. If Shop Drawings show variations from Contract requirements because of standard shop practice or other reason, make specific mention of such variations in letter of transmittal, as well as on drawings, in order that (if acceptable) suitable action may be taken for proper adjustment of Contract. Unless specific changes have been noted and accepted, no deviations from Contract Documents will be permitted.
- B. Before commencing installation of any Work, the Contractor shall submit and receive approval of all drawings, descriptive data, and material list(s) as required to accomplish Work.
- C. Review of Shop Drawings is regarded as a service to assist Contractor and in all cases original Contract Documents shall take precedence as outlined under General Conditions.
- D. No claim for extra time or payment shall be based on work shown on Shop Drawings unless the claim is (1) noted on Contractor's transmittal letter accompanying Shop Drawings and (2) Contractor has complied with all applicable provisions of the General Conditions, including, without limitation, provisions regarding changes and payment, and all required written approvals.
- E. Owner and/or Architect shall not review Shop Drawings for quantities of materials or number of items to be supplied.
- F. Owner's and/or Architect's review of Shop Drawing will be general. Owner's and/or Architect's review does not relieve Contractor of responsibility for accuracy, proper fitting, quality of Work, furnishing of materials, or Work required by Contract Documents and not indicated on Shop Drawings. Shop Drawings

reviewed by Owner and/or Architect is not to be construed as approving departures from Contract Documents.

- G. Review of Shop Drawings and Schedules does not relieve Contractor from responsibility for any aspect of those Drawings or Schedules that is a violation of local, County, State, or Federal laws, rules, ordinances, or rules and regulations of commissions, boards, or other authorities or utilities having jurisdiction.
- H. Before submitting Shop Drawings for review, Contractor shall check Shop Drawings of its subcontractors for accuracy and confirm that all Work contiguous with and having bearing on other work shown on Shop Drawings is accurately drawn and in conformance with Contract Documents.
 - 1. Prior to submitting shop drawings for review, contractor shall provide any and all "field verification" dimensions or conditions onto submittal for Owner and/or Architect to fully evaluate shop drawings.
- I. Submitted drawings and details must bear stamp of approval of Contractor:
 - 1. Stamp and signature shall clearly certify that Contractor has checked Shop Drawings for compliance with Drawings.
 - 2. If Contractor submits a Shop Drawing without an executed stamp of approval, or whenever it is evident (despite stamp) that Drawings have not been checked the Owner and/or Architect will not consider them and will return them to the Contractor for revision and resubmission. In that event, it will be deemed that Contractor has not complied with this provision and Contractor shall bear risk of all delays to same extent as if it had not submitted any Shop Drawings or details.
- J. Submission of Shop Drawings (in either original submission or when resubmitted with correction) constitutes evidence that Contractor has checked all information thereon and that it accepts and is willing to perform Work as shown.
- K. Contractor shall pay for cost of any changes in construction due to improper checking and coordination. Contractor shall be responsible for all additional costs, including coordination. Contractor shall be responsible for costs incurred by itself, the Owner, the Architect, the Project Inspector, the Construction Manager, any other Subcontractor or contractor, etc., due to improperly checked and/or coordination of submittals.
- L. Contractor shall prepare composite drawings and installation layouts when required to solve tight field conditions.
 - 1. Shop Drawings shall consist of dimensioned plans and elevations and must give complete information, particularly as to size and location of sleeves, inserts, attachments, openings, conduits, ducts, boxes, structural interferences, etc.
 - 2. Contractor shall coordinate these composite Shop Drawings and installation layouts in the field between itself and its Subcontractor(s) for proper relationship to the Work, the work of other trades, and the field conditions. The Contractor shall check and approve all submittal(s) before submitting them for final review.

2.05 PRODUCT DATA/MATERIAL LISTS

- A. Submittals shall include manufacturer's specifications, physical dimensions, and ratings of all materials and/or equipment. Where printed literature describes items in addition to that item being submitted, submitted item shall be clearly marked on sheet and superfluous information shall be crossed out. If highlighting is used, Contractor shall mark all copies:
1. Modify drawings to delete information which is not applicable to Project.
 2. Supplement standard information to provide additional information applicable to Project.
- B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data:
1. All files shall consist of first generation searchable electronic .pdf files. Each file shall be bookmarked with specific pertinent information flagged and noted. Files will not be accepted for review if they contain scanned, "screen printed", or information that is not visually clear and searchable.
 2. Clearly mark each product to identify pertinent materials, products, or models.
 3. Show dimensions and clearances required.
 4. Show performance characteristics and capacities.
 5. Show wiring diagrams and controls.
 6. Include calculations when applicable.
 7. Remove pages for the .pdf file for products that do not pertain to this project.
- C. Material Safety Data Sheets (MSDS): Include for materials which require manufacturer's warnings and application instructions listed on MSDS provided by the product manufacturer.
- D. Equipment submittals shall be complete and include space requirements, weight, electrical and mechanical requirements, performance data, and supplemental information that may be requested.

2.06 SAMPLES

- A. Contractor shall submit for approval Samples as required and within the time frame in the Contract Documents. Physical examples shall illustrate materials, workmanship, and be used to establish standards by which completed work is judged. Materials such as concrete, mortar, etc., which require on-site testing will be obtained from Project Site.
- B. Contractor shall submit four (4) samples except where greater or lesser quantities are specifically required by Contract Documents including, without limitation, the Specifications. Where size of samples is not specified, office samples should be of sufficient size and quantity to clearly illustrate:
1. Functional characteristics of product or material, with integrally related parts and attachment devices.
 2. After review, samples may be used in construction of Project.
 3. Samples must show full range of texture, color, and pattern.

- C. Field Samples and Mockups:
 - 1. Erect at Project site at location acceptable to Owner, unless otherwise approved.
 - 2. Construct each sample or mockup complete, including work of all trades required in finished work.

- D. Contractor shall provide cover page filled out and numbered sequentially with other submittals to show name of Project, name of Contractor submitting, Contract number and segment of Work where representative Sample will be used, all applicable Specifications Sections and documents, Contract Drawing Number and detail, and ASTM or FS reference, if applicable.

2.07 SUBSTITUTIONS

- A. Refer to specification section 01 25 00 Substitution Procedures

2.08 REVIEW AND RESUBMISSION REQUIREMENTS:

- A. The Owner will arrange for review of Sample(s), Shop Drawing(s), Product Data, and other submittal(s) by appropriate reviewer and return to Contractor as provided below within fifteen (15) days after receipt or within fifteen (15) days after receipt of all related information necessary for such review, whichever is later.

- B. An electronic file of product or materials data will be returned to Contractor with the review status.

- C. Samples to be incorporated into the Work will be returned to Contractor, together with a written notice designating the Sample with the appropriate review status and indicating errors discovered on review, if any. Other Samples will not be returned, but the same notice will be given with respect thereto, and that notice shall be considered a return of the Sample.

- D. Contractor shall revise and resubmit any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) as required by the reviewer. Such resubmittals will be reviewed and returned in the same manner as original Sample(s), Shop Drawing(s), Product Data, and other submittal(s), within fifteen (15) days after receipt thereof or within fifteen (15) days after receipt of all related information necessary for such review.

- E. Contractor may proceed with any of the Work covered by Sample(s), Shop Drawing(s), Product Data, and other submittal(s) upon its return if designated as No Exception Taken (NET), or Make Corrections Noted (MCN), provided the Contractor proceeds in accordance with the Owner and/or the Architect's notes and comments.

- F. Contractor shall not begin any of the work covered by a Sample(s), Shop Drawing(s), Product Data, and other submittal(s), designated as Revise and

Resubmit or Rejected, until a revision or correction thereof has been reviewed and returned to Contractor marked NET or MCN.

- G. Sample(s), Shop Drawing(s), Product Data, and other submittal(s) designated as revise and resubmit or rejected require resubmittal and shall be revised or corrected and resubmitted to the Owner no later than ten (10) days or a shorter period as required to comply with the approved Construction Schedule, after its return to Contractor.
- H. Neither the review nor the lack of review of any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) shall waive any of the requirements of the Contract Documents, or relieve Contractor of any obligation thereunder.
- I. Owner's and/or Architect's review of Shop Drawings does not relieve the Contractor of responsibility for any errors that may exist. Contractor is responsible for the dimensions and design of adequate connections and details and for satisfactory construction of all the Work.

PART 3 – EXECUTION

3.01 SUBMISSION REQUIREMENTS

- A. Schedule submissions at least three weeks before dates reviewed submittals will be needed and within the time periods specified in 3.01-C. The Owner will review submittals within 15 days unless the Owner notifies the Contractor in writing that a review of a specific submittal will take longer. Should the Owner review a submittal sooner, the Contractor shall not assume that a new timeline has been established.
- B. The Contractor is herein made aware that deferred approval submittals, including but not limited to submittals requiring design review by the Owner, Architect, or Architect's consultants and/or Authorities Having Jurisdiction (AHJ) , such as the Building Department will have longer review periods. The Contractor shall contact these agencies at the onset of the start of construction to determine the length of time for review, back-checks, and approval and appropriately include this time in their Progress Schedule to avoid delays.
- C. Except as otherwise specified for substitutions in section 01 25 00 Substitution Procedures, make submission of all submittals within the following number of days after the Start Date of the Work.
 - 1. Items needed in initial stages of Work or requiring long lead-time for ordering: 5 calendar days.
 - 2. All other items: 15 calendar days.
- D. No portion of work requiring submittals shall be commenced until submittal has been accepted by Owner. All such portions of work shall be in accordance with accepted submittals.

END OF SECTION

MENDOCINO COUNTY
ENTRY FAÇADE REPAIR
PROJECT SUBMITTAL

To: HMR Architects
916-736-2724

Attn: Project Manager
E-Mail:

From: General Contractor
() -

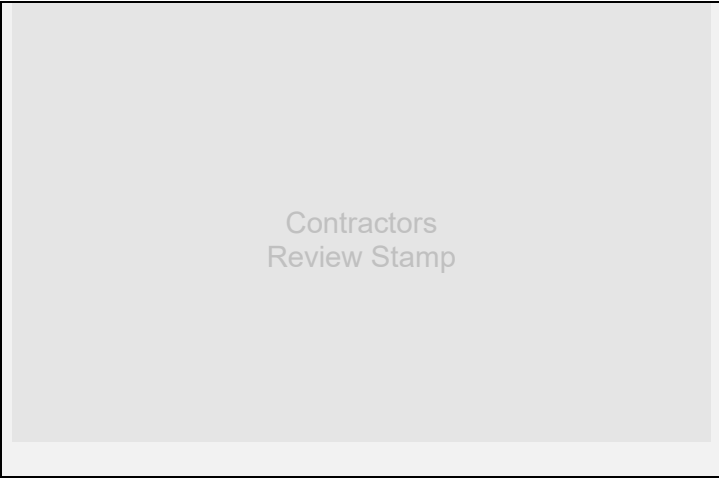
Attn: Project Manager
E-Mail:

Subcontractor: _____

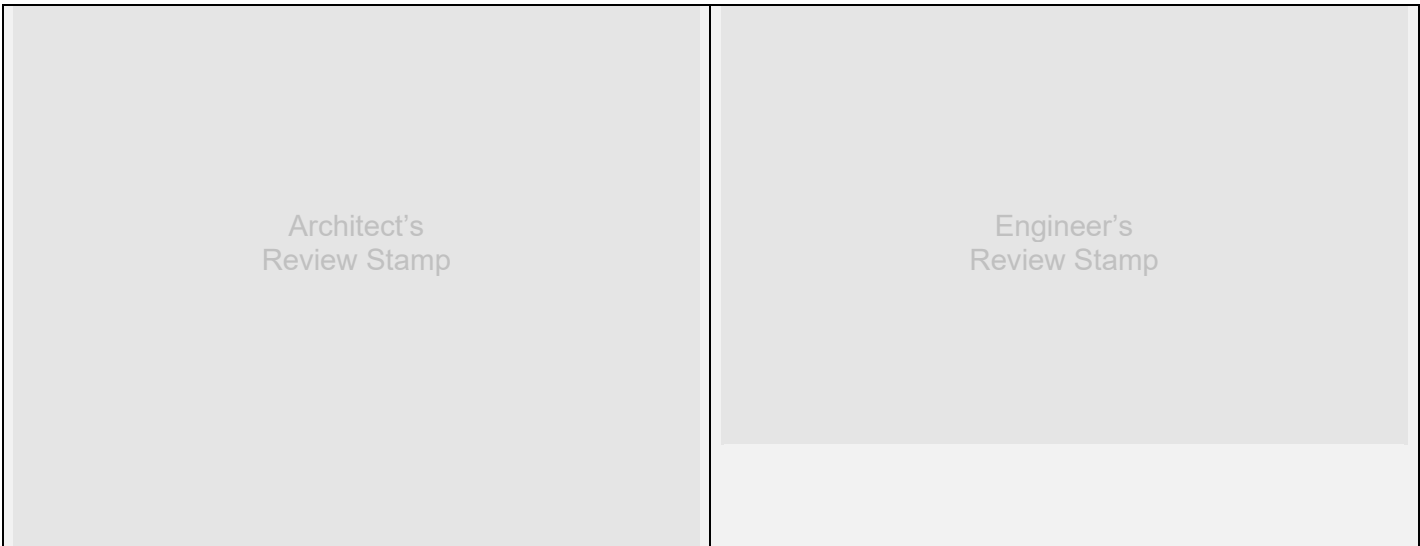
Submittal No.: _____

Specification Section: _____

Subject: _____



Comments: _____



SECTION 01 50 00

TEMPORARY FACILITIES & BUILDING SERVICES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:
 - 1. Temporary utilities such as water, electricity, lighting and telephone.
 - 2. Temporary building services such as electricity, gas, heating and cooling or telephone and data when interruption in services is required to complete the work.
 - 3. Sanitary facilities.
 - 4. Enclosures and temporary protection such as fencing, tarpaulins, barricades and canopies.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Project Plans, General Conditions, Supplementary conditions, and Sections in Division 1 of these Specifications.

1.2 JOB SAFETY

- A. Comply with all applicable laws and regulations pertaining to job safety, and be solely responsible for construction means, methods, techniques, sequences procedures and safety precautions and programs in connection with the Work. Owner or Architect will not be responsible for Contractor's failure to employ proper safety procedures.
- B. All work, including the temporary construction, shall be in full accord with the latest orders, rules and regulations of the State of California Division of Industrial Safety and the California Occupational Safety and Health Act (CAL-OSHA).
- C. The Contractor shall at all times so conduct his work as to cause the least possible obstruction and inconvenience and insure the protection of persons and property in the vicinity of the Work.

PART 2 - PRODUCTS

2.1 MISCELLANEOUS FACILITIES

- A. Construction Aids: Hoists, ramps and ladders, enclosures, pumps, barriers, fences, barricades necessary to adequately move materials and equipment and to protect workmen and public.
- B. All temporary construction and protection to comply with requirements of state and local authorities.
- C. Sanitary Facilities
 - 1. Provide and pay for temporary sanitary facilities in quantity required for use by all personnel
 - 2. Shall be maintained in a sanitary condition at all times.
 - 3. Facility shall remain locked when Contractor is off-site.

PART 3 – EXECUTION

3.1 EXISTING BUILDING SERVICES

- A. Utilities: Coordinate the temporary shut off of any utilities including water, electricity, gas, and sanitary sewer with the County. No utility will be made unavailable to buildings for more than 4 hours without written approval from County.
- B. Provide minimum 48 hours written notice to the County prior to any activities that may result in loss of water, fire water, sewer, gas, electrical or data connectivity. Coordinate all change over activities closely with County.
- C. Power will be supplied by the county. The Contractor will coordinate with the county agent to access power. The Contractor will not disrupt the occupants during construction. No public access through front entry during construction.
- D. The Contractor will provide temporary fencing for staging and materials. The contractor will provide portable restrooms that will be kept inside fencing area.
- E. The Contractor is responsible for protection of front entry door and windows during demolition and construction.
- F. The Contractor is responsible for temporary shoring of the entry structure prior to any demolition work. Existing shoring shall remain in place until replaced or accepted by the Contractor. Shoring becomes property of the Contractor and will be removed and properly disposed of by the Contractor.

G. Work in County public facility:

1. Provide a minimum 14-day notice before beginning work at the facility.
2. Provide clear delineation and appropriate barriers and signage to protect the public and county employees for the entirety of the project.
3. Do not leave materials, tools equipment or debris unattended in any areas that are accessible to the public or county employees.
4. Remove all equipment, temporary facilities, debris and thoroughly clean all affected surfaces before removing barriers.

3.2 SECURITY

A. Contractor shall be responsible for securing the project Site and work areas within the temporary fencing:

1. Secure and maintain access points to the Work
2. Secure equipment, and temporary facilities until time of acceptance.
3. Security and protection may be by any legal method, or methods, acceptable to County.

3.3 MAINTENANCE AND REMOVAL

A. Maintain tree protection, erosion and sediment control measures, temporary facilities and controls as long as needed for safe and proper completion of the Work. Contractor shall be responsible for ensuring the effectiveness of erosion and sediment control devices, repairing, or replacing as necessary for the duration of the project.

B. Remove such temporary facilities and controls as rapidly as progress of the Work will permit or as directed by the County.

END OF SECTION

SECTION 01 71 00

CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.

1.2 QUALITY ASSURANCE

- A. Conduct daily inspection, and more often, if necessary, to verify that requirements for cleanliness are being met.
- B. In addition to the standards described in this Section, conduct cleaning and disposal operations to comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

- A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.
- B. Provide covered containers for deposit of waste materials, debris and rubbish.
- C. Locate containers for deposit of waste materials, debris and rubbish within the fenced construction site or as directed by owner.

2.2 COMPATIBILITY

- A. Use only those cleaning materials which will not create hazards to health or property, and which will not damage surfaces.

- B. Use only the cleaning materials, methods and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 PROGRESS CLEANING

- A. General:
 - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
 - 2. Do not allow accumulation of scraps, debris, waste material, and other items not required for construction of this Work.
 - 3. At least twice each month, and more often, if necessary, completely remove all scrap, debris, and waste material from the job site.
 - 4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
 - 1. Daily, and more often, if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
 - 2. Weekly, and more often, if necessary, inspect all materials stored on the site. Restack, tidy, or otherwise service arrangements to meet the requirements of subparagraph 3.1-A-1 above.
 - 3. Maintain the site in a neat and orderly condition at all times.
- C. Structures:
 - 1. Weekly, and more often, if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
 - 2. Weekly, and more often, if necessary, sweep interior places clean.
 - a. "Clean," for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a hand-held broom.
 - 3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of succeeding material, using equipment and materials required to achieve the necessary cleanliness.
 - 4. Following the installation of finished floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.

- a. "Clean," for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of the Architect, may be injurious to the finish floor material.

3.2 DUST CONTROL

- A. Establish and enforce strict cleaning and dust control procedures before, during and after installation of health care equipment, as approved by Owner and Architect. This requirement is critical to successful completion of the Work.
- B. Clean interior spaces prior to the start of finish painting and continue cleaning on as-needed basis until painting is finished. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly coated surfaces.

3.3 FINAL CLEANING

- A. "Clean," for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
- B. Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.
- C. Site:
 1. Unless otherwise specifically directed by the Architect, broom clean paved areas on the site and public paved areas adjacent to the site affected by the work.
 2. Completely remove resultant debris.
- D. Structures:
 1. Exterior surfaces affected by the work:
 - a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
 - b. Remove all traces of splashed materials from adjacent surfaces.
 - c. If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
 - d. In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.
 2. Interior surfaces affected by the work:
 - a. Visually inspect interior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.

- b. Remove all traces of splashed material from adjacent surfaces.
- c. Remove paint droppings, spots, stains, and dirt from finished surfaces.

E. Ventilating Systems:

- 1. Clean permanent filters and replace disposable filters if units were operated during construction.
- 2. Clean ducts, blowers and coils if units were operated without filters during construction.

F. Schedule final cleaning as approved by the Architect to enable the Owner to accept a completely clean Work

G. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight exposed surfaces in all construction areas, to verify that the entire Work is clean.

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering.
 - 3. Installation.
 - 4. Cutting and patching.
 - 5. Coordination of Owner's portion of the Work.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as

intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

- a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Plumbing piping systems.
 - f. Mechanical systems piping and ducts.
 - g. Control systems.
 - h. Communication systems.
 - i. Fire-detection and -alarm systems.
 - j. Conveying systems.
 - k. Electrical wiring systems.
 - l. Operating systems of special construction.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
- a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Equipment supports.
 - d. Piping, ductwork, vessels, and equipment.
 - e. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect through Construction Manager in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect and Construction Manager promptly.

- B. Engage a land surveyor experienced in laying out the Work, using the following accepted surveying practices:
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect and Construction Manager when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

3.5 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties' involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

3.6 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished

area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

- a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 COORDINATION OF OWNER'S PORTION OF THE WORK

- A. Site Access: Provide access to Project site for Owner's construction personnel and Owner's separate contractors.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel and Owner's separate contractors.
 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.8 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 01400 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01730

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions.
- B. Special Conditions; and

1.02 SECTION INCLUDES:

- A. Administrative and procedural requirements for the following:
 - (1) Salvaging non-hazardous construction waste.
 - (2) Recycling non-hazardous construction waste.
 - (3) Disposing of non-hazardous construction waste.

1.03 DEFINITIONS:

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS:

- A. General: Develop waste management plan that results in end-of Project rates for salvage/recycling of fifty percent (50%) by weight (or by volume, but not a combination) of total waste generated by the Work.

1.05 SUBMITTALS:

- A. Waste Management Plan: Submit waste management plan within 30 days of date established for commencement of the Work.
- B. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- C. Submittal procedures and quantities are specified in Document 01 33 23.

1.06 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Waste Management Conference: Conduct conference at Project site to comply with requirements. Review methods and procedures related to waste management including, but not limited to, the following:
 - (1) Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - (2) Review requirements for documenting quantities of each type of waste and its disposition.
 - (3) Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - (4) Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - (5) Review waste management requirements for each trade.

1.07 WASTE MANAGEMENT PLAN:

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

- B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION:

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - (1) Distribute waste management plan to everyone concerned within 3 days of submittal return.
 - (2) Distribute waste management plan to entities when they first begin work on site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - (1) Designate and label specific areas of Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

3.02 RECYCLING CONSTRUCTION WASTE:

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to the Contractor.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 - (1) Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project Site. Include list of acceptable and unacceptable materials at each container and bin.
 - (a) Inspect containers and bins for contamination and remove contaminated materials if found.

- (2) Stockpile processed materials on site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- (3) Stockpile materials away from construction area. Do not store within drip line of remaining trees.
- (4) Store components off the ground and protect from the weather.
- (5) Remove recyclable waste off Owner property and transport to recycling receiver or processor.

D. Packaging:

- (1) Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
- (2) Polystyrene Packaging: Separate and bag material.
- (3) Pallets: As much as possible, require deliveries using pallets to remove pallets from Project Site. For pallets that remain on Site, break down pallets into component wood pieces and comply with requirements for recycling wood.
- (4) Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

E. Site-Clearing Wastes: Chip brush, branches, and trees on site.

F. Wood Materials:

- (1) Clean Cut-Offs of Lumber: Grind or chip into small pieces.
- (2) Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

- (1) Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.03 DISPOSAL OF WASTE:

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project Site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.**

- (1) Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on site.
 - (2) Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner property and legally dispose of them.

END OF SECTION

SECTION 02 41 19

SELECTIVE BUILDING DEMOLITION

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Furnish all materials, labor, equipment, and services necessary and incidental to the completion of building demolition work as shown on the drawings and as described within this specification manual.
- B. Demolition requirements are shown or implied throughout the construction documents. Provide all demolition work necessary to complete the Work shown in these construction documents, whether or not specific demolition requirements are indicated. Review all documents for a full and complete understanding of demolition, salvage/reuse, relocation, and/or modification of systems or components.
- C. Demolition for this project shall include, but is not limited to:
 - 1. Abatement work as defined in the County provided documents.
 - 2. Concrete drilling and demolition of poured-in-place concrete in areas shown.
 - 3. Demolition of cement plaster and wood framing for access to all areas of work.
 - 4. Shoring of existing building structure as required during demolition and installation of new work.
 - 5. Demolition of adjacent existing finishes as required to provide viewing by owner and the design team of adjacent conditions to evaluate the possible extent of additional dry rot to be removed.
- D. The County has completed a limited asbestos and lead survey that is available to contractors for their use. Hazardous materials will be removed by Owner under a separate contract.
 - 1. There is a minimum of 1 report (s) relate to this property for reference. This report is referenced as:
 - a. Terracon – Limited Asbestos and Lead Survey Report, dated April 18, 2024
 - 2. Except as noted, it is not expected that hazardous materials will be encountered in the Work.
 - 3. If additional suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.

1.02 REQUIREMENTS

- A. Prior to starting demolition, comply with requirements listed in related Division 01 Sections. Comply with Environmental Protection Agency (EPA) and County Waste Management regulations and disposal regulations.

1.03 RELATED WORK

- A. Section 01 26 00 Contract Modification Procedures
- B. Section 01 50 00 Temporary Facilities and Controls
- C. Section 01 56 00 Temporary Barriers and Enclosures

- E. Section 01 74 19 Construction Waste Management and Disposal

1.04 SUBMITTALS

- A. Contractor shall be responsible for maintaining forms and records of all waste material removed from the site. Coordinate documentation requirements with the local Authorities Having Jurisdiction (AHJ), waste hauling companies, and disposal sites. Contractor shall copy the Owner on all forms submitted to the AHJ's.
- B. Proposed Protection Measures: Submit report, including drawings, that indicate the measures proposed for protecting individuals and property, for dust and/or noise control. Indicate proposed locations and construction of barriers. Drawings shall be submitted to the AHJ for review of traffic flow for vehicles and pedestrians.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 UTILITIES

- A. In accordance with the General Conditions, locate, identify, disconnect, and cap off utility services to be demolished. Safe off utilities, including irrigation, to equipment and areas requiring temporary removal and reinstallation. Coordinate utility work with the service provider.
- B. Maintain and protect existing utilities to remain in service before proceeding with demolition, providing bypass connections to other parts of the building.

3.02 SHORING AND BRACING

- A. Shoring is currently in place by Owner. Contractor may utilize this existing shoring but is responsible for any modifications or additional shoring, bracing, or structural support to preserve building stability and prevent movement, settlement, or collapse during scope of work. Once work is completed, contractor shall remove all shoring, bracing, or structural support and same shall become the property of the contractor to be removed from the site.

3.03 DEMOLITION

- A. Conduct demolition in accordance with the General Conditions (without disrupting the Owner's or other contractor's use of the building). Coordinate demolition work with requirement of abatement information and testing.
- B. Conduct demolition operations and remove debris to prevent injury to people and damage to adjacent buildings and site improvements.
- C. Perform Work in such a manner as to prevent damage to existing facilities to remain or to be salvaged. Hazardous Work shall not be left standing or hanging, but shall be knocked or pulled down to avoid damage or injury to employees or the public.

3.04 PROTECTION

- A. In accordance with industry standards, protect building structure or interior from weather and water leakage and damage.

- B. Protect remaining walls, ceilings, floors, and exposed finishes. Erect and maintain dustproof partitions. Cover and protect remaining furniture, furnishings, and equipment.

3.05 CUTTING AND PATCHING

- A. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Sawcutting shall start and stop in tight corners without overrun.
- B. Promptly patch and repair holes and damaged surfaces of building caused by demolition. Restore ex-posed finishes of patched areas and extend finish restoration into remaining adjoining construction.
- C. Contractor shall provide concrete inspections to locate existing reinforcing elements prior to cutting or drilling.

3.06 SALVAGE

- A. No salvage is intended for this project. Contractor is responsible for all disposal of all materials removed from this project site.

3.07 DISPOSAL

- A. In accordance with Section 01 74 19 Construction Waste Management and Disposal.
- B. Unless otherwise indicated, demolished materials become Contractor's property.
- C. Promptly remove demolished materials from the property and legally dispose of them. Do not burn demolished materials.

3.08 HAZARDOUS MATERIALS

- A. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), lead, or other hazardous substances that have not been rendered harmless, Contractor shall immediately stop work in the area affected and report the condition to the Owner's Representative in writing. The work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos, PCB, lead, or other hazardous substances and has not been rendered harmless. The work in the affected area shall be resumed in the absence of asbestos, PCB, lead, or other hazardous substances, or when such materials have been rendered harmless.
- B. Disclose any hazardous substance or condition exposed during the work to the Owner's Representative for decision or remedy.

END OF SECTION

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: All labor, materials and equipment and all operations required to complete all formwork as indicated on the drawings; to produce shapes and configurations as shown, as required; and as specified herein, including:
1. Forms, shores, bracing, removal and other operations as necessary for all cast-in-place concrete and masonry placed.
 2. Setting and securing anchor bolts and other metal items embedded in concrete into formwork, using materials and layouts furnished and delivered to jobsite as specified under other sections.
- B. Related Sections:
1. Pertinent Sections of Division 03 specifying concrete construction.
 2. Pertinent Sections of other Divisions specifying work to be embedded in concrete or work penetrating concrete foundations and formwork.

1.2 REFERENCES

- A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC): Chapter 19 Concrete.
- B. American Concrete Institute (ACI) PRC-347 "Guide to Formwork for Concrete".
- C. American Plywood Association (APA) "Concrete Forming Guide".
- D. West Coast Lumberman Inspection Bureau (WCLIB) "Standard Grading Rules for West Coast Lumber".
- E. ACI MNL-066 "ACI Detailing Manual".
- F. ACI SPEC-301 "Specifications for Concrete Construction".
- G. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice".

1.3 DESIGN REQUIREMENTS

- A. Design, engineer, and construct formwork, shoring and bracing to conform to design and code requirements, resist imposed loads; resultant concrete to conform to required shape, line and dimension.

1.4 SUBMITTALS

- A. Limitation of review: Structural Engineer's review will be required only where specifically requested for general architectural applications and features only. Contractor is responsible for structural stability, load-resisting characteristics and sufficiency of form work design.

1.5 QUALITY ASSURANCE

- A. General: All form materials shall be new at start of work. Produce high quality concrete construction. Minimize defects due to joints, deflection of forms, roughness of forms, nonconforming materials, concrete or workmanship.
- B. Reuse of Forms: Plywood forms may be reused, if thoroughly cleaned of all dirt, mortar, and foreign materials, and undamaged at edges and contact face. Reuse shall be subject to permission from the Architect without exception, and issued in writing. Reuse of any panel which will produce a blemish on exposed concrete, will not be permitted.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Form Materials:
 - 1. Non-Exposed Surface Formwork Facing: Forms for concrete which is not exposed to view, may be of plywood as specified for exposed surfaces, or square edge 1x nominal Douglas Fir, Construction Grade, S4S.
 - 2. Exposed Surface Formwork Facing:
 - a. Forms for all exterior and interior concrete flat surfaces unless otherwise specified as board formed shall be new Douglas Fir Plywood (APA) ply, 5/8-inch, B-B Plyform, Class 1, Exterior Type, oiled and edged and edge-sealed conforming to U.S. Product Standard PS 1 in large sheet sizes to achieve joint patterns shown.
 - b. All exposed concrete edges shall be chamfered 3/4" minimum or as noted on the drawings.
 - 3. Exposed Surface Formwork - Special Pattern Form Liner:
 - a. Forms for all exterior and interior concrete flat surfaces indicated shall be as designated by Architect.
- B. Earth Forms: Allowed, subject to soil standing in excavations without ravel or caving.
- C. Form Release Agent: Spray-on compound, not affecting color, bond or subsequent treatment of concrete surfaces. Maximum VOC content shall comply with local requirements and California Green Building Code.
- D. Accessories: Types recommended by manufacturers or referenced standards to suit conditions indicated;
 - 1. Anchors, spacers, void in-fill materials: sized to resist imposed loads.
 - 2. Form Ties: Prefabricated rod, flat band, or wire snap ties with 1" break-back or threaded internal disconnecting type with external holding devices of adequate bearing area. Ties shall permit tightening and spreading of forms and leave no metal closer than 1" to surface.
- E. Corner Chamfers and Rustications: Filleted, wood strip or foam type; sizes and shapes as detailed, or 3/4 x 3/4 inch size minimum if not detailed; maximum possible lengths.
- F. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Inspect the substrate and the conditions under which concrete formwork is to be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of substrates and conditions.
- B. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.2 EARTH FORMS

- A. If natural soil or compacted fill can be accurately cut and maintained, foundations and grade beams may be poured against earth without forming. Provide positive protection of trench top corners.
- B. Maintain earth forms free of water and foreign materials.

3.3 ERECTION – FORMWORK

- A. General: Construct formwork in accordance with calculations, and recommendations of ACI PRC-347. Construct forms to the sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb work in finished structure. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Use selected materials to obtain required finishes.
 - 1. Construct cambers specified in concrete members and slabs in the formwork.
 - 2. Schedule the work and notify other trades in ample time so that provisions for their work in the formwork can be made without delaying progress of the project. Install all sleeves, pipes, etc. for building services systems, or other work. Secure information about and provide for all openings, offsets, recessed nailing blocks, channel chases, anchors, ties, inserts, etc. in the formwork before concrete placement.
 - 3. Deflection: Formwork and concrete with excessive deflection after concrete placement will be rejected. Excessive deflection is that which will produce visible and noticeable waves in the finished concrete.
 - 4. Measure formwork for elevated structural slabs, columns, wall elevations points of maximum camber and submit in writing to the Architect/Engineer prior to placing concrete.
- B. Formwork Construction: Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI SPEC-301. Uniform, substantial and sufficiently tight to prevent leakage of concrete paste, readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials. Tie, brace, shore, and support to insure stability against pressures from any source, without failure of any component part and without excessive deflection. Solidly butt joints and provide backup material at joints as required to prevent leakage and fins.
- C. Provide all openings, offsets, inserts, anchorages, blocking, and other features of the work as shown or required. See INSERTS, EMBEDDED PARTS, AND OPENINGS for detailed requirements.
- D. Warped, checked, or scuffed forms will be rejected.
- E. Maintain membranes, reinforcing and other work free of damage; protect with plywood

runway boards or other positive, durable means.

- F. Align joints and make watertight. Keep form joints to a minimum.
- G. Provide fillet and chamfer strips on external corners of exposed locations and as indicated to form patterns in finished work. Extend patterns around corners and into alcoves, on backs of columns and similar locations not otherwise shown.
 - 1. Produce beveled, smooth, solid, unbroken lines, except as otherwise indicated to conform to patterns.
 - 2. Form corners and chamfers with 3/4 inch x 3/4 inch strips, unless otherwise indicated, accurately formed and surfaced to produce uniformly straight lines and tight edge joints. Extend terminal edges to required limit and miter chamfer at changes in direction.
- H. Unexposed corners may be formed either square or chamfered.
- I. Ties and Spreaders: Arrange in a pattern acceptable to the Architect when exposed. Snap-ties may be used except at joints between pours where threaded internal disconnecting type shall be used.
- J. Coordinate this section with other sections of work that require attachment of components to formwork.
- K. Reglets and Rebates: Accurately locate, size, and form all reglets and rebates required to receive work of other trades, including flashing, frames, and equipment.

3.4 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not allow excess form coating material to accumulate in the forms or to come into contact with reinforcement or surfaces which will be bonded to fresh concrete.
- D. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork will be rejected.
- E. Leave no residue or stain on the face of the concrete, nor affect bonding of subsequent finishes or work specified in other sections.

3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in passing through concrete work.
 - 1. Provide openings in concrete formwork to accommodate work of other sections including those under separate contracts (if any). Size and location of openings, recesses and chases shall be in accordance with the section requiring such items. Accurately place and securely support items to be built into forms.
- B. Construction Joints: Construct and locate generally as indicated on Drawings and only at locations approved by Structural Engineer, so as not to impair the strength of the structure. Form keys in all cold joints shown or required.

- C. Locate and set in place items that will be cast directly into concrete.
- D. Rough Hardware and Miscellaneous Metal: Set inserts, sleeves, bolts, anchors, angles, and other items to be embedded in concrete. Set embedded bolts and sleeves for equipment to template and approved shop drawings prepared by trades supplying equipment.
- E. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
- F. Wood Inserts and Nailers: Provide approved preservative-treated lumber. Set all required nailing blocks, grounds, and other inserts as required to produce results shown. Wood plugs shall not be used.
- G. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- H. Piping: Do not embed piping in structural concrete unless locations specifically approved by Structural Engineer.
- I. Conduit: Place conduit below slabs-on-grade and only as specifically detailed on structural drawings. Minimum clear distance between conduits shall be 3 diameters. Location shall be subject to Engineer's written approval and shall not impair the strength of the structure.
- J. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
 - 1. Provide openings for the introduction of vibrators at intervals necessary for proper placement.
 - 2. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.
- K. Install Form Liner inserts in accordance with manufacturer's recommendations, to produce patterns and textures indicated.
- L. Install waterstops in accordance with manufacturer's recommendations to provide continuous waterproof barrier.

3.6 FORM CLEANING

- A. Clean forms as erection proceeds, remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
 - 1. Remove all dirt, chips, sawdust, rubbish, water and foreign materials detrimental to concrete.
 - 2. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

3.7 FOOTINGS

- A. Verify elevations and provide final excavation required for footings prior to placing of concrete.

3.8 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI SPEC-301.

3.9 FIELD QUALITY CONTROL

- A. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.
- B. Do not reuse wood formwork more than 2 times for concrete surfaces to be exposed to view. Do not patch formwork.
- C. Clean and repair surfaces to be re-used in the work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork.
- D. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets.

3.10 FORM REMOVAL

- A. Do not loosen or remove forms before minimum curing period has elapsed without employment of appropriate alternate curing methods, approved by the Architect in writing.
- B. Remove forms without damage to the concrete using means to ensure complete safety of the structure and without damage to exposed beams, columns, wall edges, chamfers and inserts. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Do not remove forms until the concrete has hardened sufficiently to permit safe removal and the concrete has attained sufficient strength to safely support imposed loads. The minimum elapsed time for removal of forms after concrete has been placed shall be as follows:
 - 1. Columns and Walls: 7 days, provided members are not subjected to overhead loads.
 - 2. Footings: 7 days minimum. If backfilled immediately, side forms may be removed 24 hours after concrete is placed.
- D. Durations listed above are minimums and are subject to extension at the sole judgment of the Architect/Engineer.
- E. Reshoring: Reshore members where and if required by Formwork Design Engineer.
- F. Do not subject concrete to superimposed loads (structure or construction) until it has attained full specified design strength, nor for a period of at least 14 days after placing.
- G. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.

3.11 CLEANING

- A. Remove excess material and debris associated with this work from the job site.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Reinforcing steel work for all concrete work as indicated on the drawings and specified herein.
 - 2. Coordinate this work with other work affected by these operations, such as forms, electrical work, mechanical work, structural steel, masonry and concrete.

- B. Related Sections:
 - 1. Pertinent Sections of Division 01 specifying Quality Control and Testing Laboratory services.
 - 2. Pertinent Sections of Divisions 03 specifying concrete construction.
 - 3. Pertinent Sections of Divisions 04 specifying masonry construction.
 - 4. Pertinent Sections of other Divisions specifying work to be embedded in concrete or work penetrating concrete work.

1.2 REFERENCE STANDARDS

- A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC) Chapter 19 Concrete.
- B. American Concrete Institute (ACI) SPEC-301 “Specifications for Concrete Construction”.
- C. ACI CODE-318 “Building Code Requirements for Structural Concrete and Commentary”.
- D. ACI MNL-066 “ACI Detailing Manual”.
- E. ASTM International (ASTM) A1064 “Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete”.
- F. ASTM A615 “Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement”.
- G. ASTM A706 “Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement”.
- H. American Welding Society (AWS) D1.4 – “Structural Welding Code - Steel Reinforcing Bars”.
- I. Concrete Reinforcing Steel Institute (CRSI) - “Manual of Standard Practice”.
- J. CRSI - “Placing Reinforcing Bars”.

1.3 QUALITY ASSURANCE

- A. Perform work of this Section in accordance with the CRSI “Manual of Standard Practice”, CRSI “Placing Reinforcing Bars”, ACI SPEC-301, and ACI CODE-318.

- B. Requirements of Regulatory Agencies, refer to pertinent Sections of Division 01 and CBC.
- C. Certification and Identification of Materials and Uses: Provide Owner's Testing Agency with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection and all material identification/test information listed below.
 - 1. Provide manufacturer's Mill Test Reports for all materials. Include chemical and physical properties of the material for each heat number manufactured. Tag all fabricated materials with heat number.
 - 2. Provide letter certifying all materials supplied are from heat numbers covered by supplied mill certificates. Include in letter the physical location of each grade of reinforcing and/or heat number in the project (i.e. foundations, walls, etc.).
 - 3. Unidentified Material Tests: Where identification of materials by heat number to mill tests cannot be made, Owner's Testing Agency shall test unidentified materials as described below.
- D. Testing and Inspection: Tests and Inspections required by Independent Testing Agency are specified below in Articles SOURCE QUALITY CONTROL and FIELD QUALITY CONTROL. Duties and limitations of Independent Testing Agency, test costs and test reports in conformance with pertinent Sections of Division 01.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent requirements of Division 01.
- B. Deliver reinforcement to project site in bundles marked with durable tags indicating heat number, mill, bar size and length, proposed location in the structure and other information corresponding with markings shown on placement diagrams.
- C. Handle and store materials above ground to prevent damage, contamination or accumulation of dirt or rust.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Reinforcing Steel: Deformed billet steel bars, ASTM A706 Grade 60 or ASTM A615 Grade 60.
 - 1. Welded reinforcement shall be ASTM A706, or A615 meeting carbon requirements of AWS D1.4. Welding shall conform with AWS D1.4.
 - 2. All reinforcement to be unfinished.
 - 3. ASTM A615 reinforcement at special structural concrete walls, concrete coupling beams, and special concrete moment frames shall have maximum yield stress of 78,000 psi and the tensile strength shall be greater than 125% of the actual yield strength. Test ASTM A615 reinforcement for conformance to these criteria prior to fabrication and/or installation.
- B. Tie Wire: No. 16 AWG or heavier, black annealed.
- C. Concrete Blocks: On-grade conditions only, as required to support reinforcing bars in position.

- D. Reinforcing Supports: Plastic or galvanized steel chairs, bolsters, bar supports, or spacers sized and shaped for adequate support of reinforcement and construction loads imposed during concrete placement, meeting ACI and CRSI standards.
 - 1. For use over formwork: Galvanized wire bar type supports complying with CRSI recommendations. Provide plastic tips where exposed to view or weather after removal of formwork. Do not use wood, brick, or other unacceptable materials.

2.2 FABRICATION

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4), unless specifically shown otherwise. Details not specifically shown or indicated shall conform to SP-066 and specified codes and standards.
 - 1. Accurately shop-fabricate to shapes, bends, sizes, gauges and lengths indicated or otherwise required.
 - 2. Bend bars once only. Discard bars improperly bent due to fabricating or other errors and provide new material; do not re-bend or straighten unless specifically indicated. Rebending of reinforcement in the field is not allowed.
 - 3. Do not bend reinforcement in a manner that will injure or weaken the material or the embedding concrete.
 - 4. Do not heat reinforcement for bending. Heat-bent materials will be rejected.
- B. Unacceptable materials: Reinforcement with any of the following defects will not be permitted in the work.
 - 1. Bar lengths, depths and bends exceeding specified fabrication tolerances.
 - 2. Bends or kinks not indicated on Drawings or final shop drawings.
 - 3. Bars with reduced cross-section due to rusting or other cause.
- C. Tag reinforcement with durable identification to facilitate sorting and placing.

2.3 SOURCE QUALITY CONTROL

- A. The Testing Agency, as specified in the Article QUALITY ASSURANCE, will perform the following:
 - 1. Material Testing:
 - a. Identified Steel: When samples are taken from bundled steel identified by heat number, matched with accompanying mill analyses as delivered from the mill, supplemental testing of reinforcing steel is not required.
 - b. Unidentified Steel: When identification of materials by heat number matched to accompanying mill analyses cannot be made, perform one tensile test and one bend test per each two and one-half tons or fraction thereof for each required size of reinforcing steel. Tests of unidentified steel shall be performed by the Owner's Testing Agency and costs for these tests shall be paid by the Contractor by deductive change order.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Inspect the conditions under which concrete reinforcement is to be placed. Do not proceed with the work until unsatisfactory conditions have been corrected.
- B. Coordinate with work of other sections to avoid conflicts or interference. Bring conflicts between reinforcement and other elements to Architect's attention. Resolve conflicts before concrete is placed.

- C. Notify Architect, Structural Engineer, and Authority Having Jurisdiction for review of steel placement not less than 48 hours before placing concrete.

3.2 PLACEMENT

- A. General: Comply with the specified codes and standards, and Concrete Reinforcing Steel Institute recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
- B. Clean bars free of substances which are detrimental to bonding. Maintain reinforcement clean until embedded in concrete.
- C. Place reinforcement to obtain the minimum coverages for concrete protection. Do not deviate from required position. Maintain required distance, spacing and clearance between bars, forms, and ground.
- D. Location and Support: Provide metal chairs, runners, bolsters, spacers and hangers, as required.
- E. Provide additional steel reinforcement as necessary or as directed, to act as spreaders or separators to maintain proper positioning.
- F. Tying and Attachment: Securely tie at all intersections and supports with wire. Prevent dislocation or movement during placement of concrete. Direct twisted ends of wire ties away from exposed concrete surfaces.
- G. Separate reinforcing from pipes or conduits with approved non-metallic separators. Do not use wood or steel form stakes or reinforcement used as stakes as support for reinforcement.
- H. Accommodate placement of formed openings required by other sections.
- I. Obstructions:
 - 1. Where obstructions, block-outs, or penetrations (conduits, raceways, ductwork) prevent continuous placement of reinforcement as indicated, provide additional reinforcing as detailed and as directed by the Structural Engineer to supplement the indicated reinforcement around the obstruction.
 - 2. Place additional trim bars, ties, stirrups, or other elements as detailed and as directed at all opening, sleeves, pipes or other penetrations through structural elements.
- J. Welded Wire Reinforcement: Reinforce slabs with 6"x 6"-W1.4 x W1.4 welded wire reinforcement reinforcing, unless otherwise noted on drawings.
 - 1. Provide flat sheets only, no rolls. Straighten, cut to required size, and lay out flat in place.
 - 2. Securely wire-tie reinforcement to other reinforcement at frequent intervals.
 - 3. Extend reinforcement over supporting beams and walls, and to within 1 inch of edge of slabs, construction joints, and expansion joints.
 - 4. Support reinforcement in mid-depth of slab.
 - 5. Lift reinforcement at intervals as slab concrete is placed, ensure proper embedment.

3.3 REINFORCING SPACING AND COVERAGE

- A. Spacing: Do not space bars closer than four (4) diameters of the largest of two adjacent bars, except at bar laps, which shall be placed such that a minimum of 2 bar diameters is clear between bars.
- B. Where reinforcing in members is placed in two layers, the distance between layers shall not be less than four bar diameters of the largest bar and the bars in the upper layers shall be placed directly above those in the bottom layer, unless otherwise detailed or dimensioned.
- C. Coverage of bars (including stirrups and columns ties) shall be as follows, unless otherwise shown:
 - 1. Concrete cast against earth or grade: 3 inches.
 - 2. Concrete exposed to weather or formed and exposed to earth:
 - a. #5 & smaller: 1-1/2 inches.
 - b. #6 & larger: 2 inches.
 - 3. Concrete not exposed to earth or weather:
 - a. #5 & smaller: 1 inch.
 - b. #6 & larger: 1-1/2 inches.

3.4 DOWELS, SPLICES, OFFSETS AND BENDS

- A. Provide standard reinforcement splices at splices, corners, and intersections by lapping ends, placing bars in contact, and tightly tying with wire at each end. Comply with details shown on structural drawings and requirements of ACI CODE-318.
- B. Provide minimum 1-1/2 inch clearance between sets of splices. Stagger splices in horizontal bars so that adjacent splices will be 4 feet apart.
- C. Laps of welded wire reinforcement shall be at least two times the spacing of the members in the direction lapped but not less than twelve inches.
- D. Splices of reinforcement shall not be made at points of maximum stress. Provide splice lengths as noted on the structural drawings, with sufficient lap to transfer the stress between bars by bond and shear.
- E. Spacing:
 - 1. Space bars minimum distance specified and all lapped bars 2 bar diameters (minimum) clear of the next bar.
 - 2. Stagger splices of adjacent bars where possible and where required to maintain bar clearance.
 - 3. Beam or slab top bars shall be spliced mid-span of column support and bottom bars spliced at column supports.
 - 4. Request Architect/Engineer review prior to placement for all splices not shown on the drawings.
- F. Reinforcement Couplers: Install at all locations indicated. Install couplers in accordance with manufacturer's recommendations.

3.5 MISPLACED REINFORCEMENT

- A. Notify Architect/Engineer immediately if reinforcing bars are known to be misplaced after concrete has been placed.

- B. Perform no correction or cutting without specific direction. Do not bend or kink misplaced bars.
- C. Correct misplaced reinforcing only as directed in writing by the Architect/Engineer. Bear all costs of redesign, new, or additional reinforcing required because of misplaced bars at Contractor's expense.

3.6 FIELD QUALITY CONTROL

- A. The Testing Agency as specified in the Article QUALITY ASSURANCE, will inspect the work for conformance to contract documents before concrete placement.
 - 1. Inspection: Provide inspection and verification of installed reinforcement. Confirm that the surface of the rebar is free of form release oil or other coatings.
 - 2. Inspect all preheat and welding activities for steel reinforcement, when these occur.
 - 3. Exception: Shallow foundations & non-structural slabs-on-grade supporting buildings of no greater than three stories and either of concrete design strength 2500psi (or greater) or supporting light-frame construction do not require special inspection. Non-structural patios, driveways, and sidewalks do not require special inspection.

3.7 CLEANING

- A. Remove excess material and debris associated with this work from the job site.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Provide all labor, materials, equipment and services to complete all concrete work required, including, but not limited to, the following:
1. Foundations, slabs-on-ground, and walls.
 2. Installation of all bolts, inserts, sleeves, connections, etc. in the concrete.
 3. Joint devices associated with concrete work.
 4. Miscellaneous concrete elements, including, but not limited to: equipment pads, light pole bases, flagpole bases, thrust blocks, and manholes.
 5. Concrete curing.
 6. Coordination with other sections:
 - a. Make all preparations and do all work necessary to receive or adjoin other work. Install all bolts and anchors, including those furnished by other sections, into formwork and provide all required blocking.
 - b. Install all accessories embedded in the concrete and provide all holes, blockouts and similar provisions necessary for the work of other sections. Provide all patching or cutting made necessary by failure or delay in complying with this requirement at the Contractor's expense.
 - c. Coordinate with other sections for the accurate location of embedded accessories.
- B. Related Sections:
1. Pertinent Sections of Division 01 specifying Quality Control and Testing Laboratory services.
 2. Pertinent Sections of Division 03 specifying concrete construction.
 3. Pertinent Sections of other Divisions specifying work to be embedded in concrete or work penetrating concrete.
 4. Pertinent sections of other Divisions specifying floor finishes and sealants applied to concrete substrates.

1.2 REFERENCES

- A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC) Chapter 19 Concrete.
- B. American Concrete Institute (ACI) PRC-211.1 "Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete"
- C. ACI PRC-213 "Guide for Structural Lightweight-Aggregate Concrete".
- D. ACI SPEC-301 "Specifications for Concrete Construction".
- E. ACI PRC-302.1 "Guide for Concrete Floor and Slab Construction".
- F. ACI PRC-304 "Guide for Measuring, Mixing, Transporting, and Placing Concrete".
- G. ACI SPEC-305.1 "Specification for Hot Weather Concreting".

- H. ACI SPEC-306.1 "Standard Specification for Cold Weather Concreting".
- I. ACI SPEC-308.1 "Specification for Curing Concrete".
- J. ACI CODE-318 "Building Code Requirements for Structural Concrete and Commentary".

1.3 SUBMITTALS

- A. Submit in accordance with pertinent sections of Division 01 specifying submittal procedures. The General Contractor shall review and approve shop drawings prior to submittal to the Architect/Engineer. Submittals that do not meet these requirements will be returned for correction without review. Submit for review prior to fabrication.
- B. Limitation of Review: Structural Engineer's review will be for general conformance with design intent as indicated in the Contract Documents and does not relieve Contractor of full responsibility for conformance with the Contract Documents.
- C. Product Data: Submit manufacturers' data on manufactured products and other concrete related materials such as bond breakers, cure/sealer, admixtures, etc. Demonstrate compliance with specified characteristics. Provide samples of items upon request.
- D. Mix Designs: Submit Mix Designs for each structural concrete type required for work per requirements of articles CONCRETE MIXES and QUALITY ASSURANCE. Resubmit revised designs for review if original designs are adjusted or changed for any reason. Non-Structural mixes need not be submitted for review by Structural Engineer.
- E. Shop Drawings: Proposed location of construction and cold joints. Proposed location of all slab construction/dowel joints, control joints, and blockouts.
- F. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction for concrete accessories.
- G. Batch Plant Ticket: Include with delivery of each load of concrete. Provide ticket to the Testing Agency and the Architect/Engineer as separate submittals. Concrete delivered to the site without such ticket shall be rejected and returned to the plant. Each ticket shall include all information specified in Article SOURCE QUALITY CONTROL below.
- H. Engineering Analysis: Prepared by a California-licensed Civil or Structural Engineer, justifying construction-imposed loads on slabs, beams, and walls which exceed those allowed by CBC for the specified use.
 - 1. 2000 lbs maximum allowable construction load without analysis.
 - 2. 10,000 lbs maximum allowable construction load with analysis.
- I. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.4 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- B. Concrete construction verification and inspection to conform to CBC 1705.3.

- C. Common Sourcing: Provide each of the following materials from consistent sources for entire project.
 - 1. Cement.
 - 2. Fly ash.
 - 3. Aggregate.
 - 4. Slag Cement.
- D. Follow requirements of ACI SPEC-305.1 when concreting during hot weather. Follow requirements of ACI SPEC-306.1 when concreting during cold weather.
- E. Services by the Independent Testing Agency (includes "Special" Inspections) as specified in this Section and as follows:
 - 1. Perform tests and inspections specified below in articles SOURCE QUALITY CONTROL and FIELD QUALITY CONTROL. Duties and limitations of Independent Testing Agency, test costs and reports to be in conformance with pertinent Sections of Division 01.
- F. Contractor shall bear the entire cost of remediation, removal, and/or replacement of concrete determined defective or non-conforming, including Architect/Engineer fees for redesign.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Materials specified by brand name shall be delivered in unbroken packages bearing manufacturer's label and shall be brand specified or an approved equal.
- B. Delivery, Handling and Storage of other materials shall conform to the applicable sections of the current editions of the various reference standards listed in this Section.
- C. Protect materials from weather or other damage. Sort to prevent inclusion of foreign materials.
- D. Specific Requirements:
 - 1. Cement: Protect against dampness, contamination, and warehouse set. Store in weather tight enclosures.
 - 2. Aggregates: Prevent excessive segregation, or contamination with other materials or other sizes of aggregates. Use only one supply source for each aggregate stock pile.
 - 3. Admixtures:
 - a. Store to prevent contamination, evaporation, or damage.
 - b. Protect liquid admixtures from freezing and extreme temperature ranges.
 - c. Agitate emulsions prior to use.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather (Freezing or near-freezing temperatures) per ACI SPEC-306.1:
 - 1. Heat concrete materials before mixing, as necessary to deposit concrete at a temperature of at least 50°F but not more than 90°F.
 - 2. Do not place concrete during freezing, near-freezing weather, snow, rain or sleet unless protection from moisture and/or cold is provided.
 - 3. Protect from freezing and maintain at a temperature of at least 50°F for not less than seven days after placing. Take special precautions to protect transit-mixed concrete.

4. No salts, chemical protection or admixture are permitted without written approval of Architect/Engineer.
 5. Contractor shall maintain an air temperature log for the first 7 days after placement with entry intervals not to exceed 8 hours.
- B. Hot Weather per ACI SPEC-305.1:
1. Cool concrete materials before mixing, or add ice in lieu of mix water as necessary to deposit concrete at a temperature below 85°F.
 2. Do not place concrete in hot/windy weather without Architect/ Engineer review of procedures.
 3. Provide sunshades and/or wind breakers to protect concrete during finishing and immediate curing operations. Do not place slab concrete at air temperature exceeding 90°F.
 4. Provide modified mix designs, adding retarders to improve initial set times and applying evaporation reducers during hot/windy weather for review by Independent Testing Agency prior to use.

1.7 SCHEDULING AND SEQUENCING

- A. Organize the work and employ shop and field crew(s) of sufficient size to minimize inspections by the Testing Agency.
- B. Provide schedule and sequence information to Testing Agency in writing upon request. Update information as work progresses.

PART 2 – PRODUCTS

2.1 FORMWORK

- A. Comply with requirements of Section 03 10 00.

2.2 REINFORCEMENT

- A. Comply with requirements of Section 03 20 00.

2.3 MATERIALS

- A. General Requirements: All materials shall be new and best of their class or kind. All materials found defective, unsuitable, or not as specified, will be condemned and promptly removed from the premises.
- B. Cementitious Materials:
 1. Portland Cement: ASTM C150, Type II, low alkali conforming to CBC 1903.1.
 2. Fly Ash (Pozzolan): ASTM C618, Class F.
 3. Slag Cement: ASTM C989, Grade 100 or 120.
- C. Concrete Aggregates:
 1. Coarse and Fine Aggregates: ASTM C33; Stone aggregate and sand. Specific source aggregate and/or sand or shrinkage characteristics as required for class of concrete specified.
 2. Lightweight aggregate: ASTM C330 and C332.
 3. Source shall remain constant throughout the duration of the job. The exact portions of the fine aggregates and coarse aggregates to be used in the mix shall

- be determined by the mix design.
4. Recycled concrete products: Returned plastic concrete may not be used in a mix. Recycled Concrete Aggregate (RCA) is not permitted. Reclaimed coarse aggregate is permitted and shall comply with ASTM C33. Reclaimed fine aggregate is not permitted.
- D. Water: ASTM C1602. Potable, clean, from domestic source.
- E. Admixtures: All admixtures shall be used in strict accordance with the manufacturer's recommendations. Admixtures containing calcium chlorides or other accelerators shall not be used without the approval of the Architect/Engineer and the Owner's Testing Laboratory.
1. Normal or Mid Range Water Reducing Admixtures: ASTM C494 Type A, "MasterPozzolith" series or "MasterPolyheed" series by Master Builders Solutions, "WRDA" series by W.R. Grace, or equal.
 2. Water Reducing Admixture and Retarder: ASTM C494 Type B or D, "MasterSet R" series or "MasterSet DELVO" series by Master Builders Solutions, "Plastiflow-R" by Nox-crete, or equal.
 3. High Range Water-Reducing Admixtures: ASTM C494 Type F, "MasterRheoBuild 1000" or "MasterGlenium" series by Master Builders Solutions or equal.
 4. Air Entraining Admixtures: ASTM C260, "MasterAir" series by Master Builders Solutions or equal.
 5. Viscosity Modifiers: ASTM C494 Type S, "MasterMatrix VMA" series by Master Builders Solutions or equal..

2.4 ACCESSORIES

- A. Bonding Agent: ASTM C881, Type II Grade 2 Class B or C. Do not allow epoxy to set before placing fresh concrete.
1. "MasterEmaco ADH 326" by Master Builders Solutions;
 2. "Rezi-Weld 1000" by W.R. Meadows.
- B. Chemical Hardener: Fluorosilicate solution designed for densification of cured concrete slabs. "MasterKure HD 300 WB" by Master Builders Solutions, "LIQUI-HARD" W.R. Meadows Co, or equal.
- C. Moisture-Retaining Cover: ASTM C171, type 1, one of the following;
1. Regular Curing Paper, Type I, reinforced waterproof: Fortifiber Corporation "Orange Label Sisalkraft", "Pabcotite" paper, or equal.
 2. Polyethylene Film: ASTM D 2103, 4 mil thick, clear or white color.
 3. White-burlap-polyethylene sheet, weighing not less than 10 oz/per linear yd.
- D. Liquid Curing Compound: ASTM C 309, Type 1, Class B, clear or translucent, 25% minimum solids, water base acrylic cure/sealer which will not discolor concrete and compatible with bonding of finishes specified in related sections. W.R. Meadows Co. "Vocomp 25" or equal. Maximum VOC content shall comply with local requirements and California Green Building Code.
- E. Evaporation Reducer: "MasterKure ER 50", by Master Builders Solutions.

2.5 JOINT DEVICES AND MATERIALS

- A. Waterstops: Resilient type, meeting Corps of Engineers CRD-C 572. Consult manufacturer for appropriate product for specific use. Submit for review. Install per manufacturers recommendation. Provide W. R. Meadows "Seal Tight" PVC waterstop, Sika "Greenstreak" PVC waterstop, or approved equal.
- B. Expansion Joint Filler: ASTM D1751, Nonextruding, resilient asphalt impregnated fiberboard or felt, 3/8 inch thick and 4 inches deep; tongue and groove profile.
 - 1. Products: "Serviced Products", W.R. Meadows, Inc., "National Expansion Joint Company", "Celotex Corporation", or equal.
- C. Joint Filler: ASTM D944, Compressible asphalt mastic with felt facers, 1/4 inch thick and 4 inches deep.
- D. Sealant and Primer: As specified in Section 07 9000.
- E. Slab Joint Sealant: Compatible with floor finishes specified in related sections.

2.6 CONCRETE MIXES

- A. General requirements for mix design and submittal of structural class concrete:
 - 1. Provide Contractor submittals to Architect/Engineer not less than 15 days before placing concrete.
 - 2. Contractor shall review mix designs and proposed placing requirements prior to submittal for compatibility to ensure that the concrete as designed can be placed in accordance with the drawings and specifications.
 - 3. Changes or revisions require re-submittal: All variations to approved mix designs, including changing type and/or quantity of admixtures shall be resubmitted to the Architect/Engineer for review prior to use.
 - 4. Mix design(s) for all structural classes of concrete to be prepared by qualified person experienced in mix design. Allow for time necessary to do trial batch testing when required.
 - 5. Preparer to provide backup data and certify in writing that mix design meets:
 - a. Requirements of the specifications for concrete durability and quality;
 - b. Requirements of the California Building Code and ACI CODE-318, including break histories, trial batching test results, and/or a mix designed by a California Registered Civil Engineer per ACI CODE-318 and bearing the Engineer's seal & signature.
 - 6. Clearly note on mix designs with specified maximum W/CM if design permits addition of water on site, or clearly identify in the mix design that no water is to be added on site.
 - 7. Deviations: Clearly indicate proposed deviations, and provide written explanation explaining how the deviating mix design(s) will provide equivalent or better concrete product(s) than those specified.
 - 8. Include adjustments to reviewed mix designs to account for weather conditions and similar factors.
- B. Proportioning - General: The following provisions apply to all mix designs:
 - 1. Proportion concrete mixes to produce concrete of required average strength (as defined by ACI CODE-318). Select slump, aggregate sizes, shrinkage, and consistency that will allow thorough compaction without excessive puddling,

- spading, or vibration, and without permitting the materials to segregate, or allow free water to collect on the surface.
2. Select aggregate size and type to produce dense, uniform concrete with low to moderate shrinkage, free from rock pockets, honeycomb and other irregularities.
 3. Mix designs may include water reducing and retarding admixtures to meet or exceed minimum set times (time required to place and finish) and to minimize Water-Cementitious Materials (W/CM). Minimum and maximum criteria presented in this section are guidelines and do not represent a specific mix design.
 4. Cement Content: Minimum cement content indicates minimum sacks of cementitious material. Increasing cement content to increase early strengths or to achieve specified W/CM while maintaining water content is discouraged in order to minimize effects of shrinkage.
 - a. Substitution of fly ash for Portland cement on an equivalent weight basis up to 25% replacement is permitted, except at high early strength concrete. Replacement in excess of 25% is not permitted unless part of a specified mix design that has been submitted for review.
 - b. Substitution of slag cement for Portland cement on an equivalent weight basis up to 45% replacement is permitted, except at high early strength concrete. Replacement in excess of 45% is not permitted unless part of a specified mix design that has been submitted for review.
 - c. Such substitution requests may be denied by the Engineer.
 5. Water Content: Mix designs with a specified maximum W/CM may be designed with a lower WCR than specified in order to allow addition of water at the site.
 6. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301 and this section.
 - a. For trial mixtures method, employ independent testing agency acceptable to Architect/Engineer for preparing and reporting proposed mix designs.
 7. Placement Options: Mix designs may, at the Contractor's option, be designed for either pump or conventional placement with aggregate size, slumps, etc. to be maintained as specified in this section.
- C. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations and this section.

D. Mix Design Minimum Requirements:

Concrete Class	Coarse Aggregate Size (Inches) & Fine Aggregate ³	Maximum W/CM or Maximum Nominal Slump & Tolerance (Inches) ^{1,2}	Minimum 28-Day Design Strength	Minimum Cement Sacks/per yd ⁴
NON-STRUCTURAL				
1) Lean Concrete (use only where specified)	---	---	---	3.0
STRUCTURAL				
2) Foundation (including continuous footings, pad footings, grade beams, stem walls)	1" x #4	W/CM = .53	3,000	5.0

1. The tolerance is the maximum deviation allowable without rejection. The mix design shall be based on the nominal value specified and is without water reducing mixtures. Slump to be measured at the end of the hose.
2. The maximum W/CM is limited at time of placement as noted. No water is to be added on site such that the specified W/CM or maximum slump is exceeded without approval of the testing laboratory and the Architect/Engineer. Workability is to be achieved utilizing an acceptable mid range to high range water reducing admixture.
3. Gradation of aggregate is per ACI CODE-318 and ASTM C33.
4. Minimum cement content includes all cementitious materials.

2.7 MIXING CONCRETE

- A. Batch final proportions in accordance with approved mix designs. All adjustments to approved proportions, for whatever reason, shall be reviewed by the Architect/Engineer prior to use.
- B. Batch and mix concrete in accordance with ASTM C94, at an established plant. Site mixed concrete will be rejected.
- C. Provide batch and transit equipment adequate for the work. Operate as necessary to provide concrete complying with specified requirements.
- D. Place mixed concrete in forms within 1-1/2 hours from the time of introduction of cement and water into mixer or 300 revolutions of the drum whichever comes first. Use of, re-mixing, and/or tempering mixed concrete older than 1 hour will not be permitted.
- E. Do not add water at the site to concrete mixes with a maximum specified W/CM unless the water content at batch time provides for a W/CM less than specified and this provision, including the quantity of water which may be added at the site, is specifically noted on the mix design and certification by the mix preparer. See ASTM C94 for additional requirements.

2.8 SOURCE QUALITY CONTROL

- A. Services by independent Testing Agency:
 1. Batch Plant Certificates: Obtain the weighmaster's Batch Plant Certificate at

arrival of truck at the site. If no batch plant certificate is provided, recommend to the General Contractor that the truckload of concrete be rejected. So note in daily log, along with the location of the load of concrete in the structure if the load is not rejected.

- a. Laboratory's inspector shall obtain for each transit mixer Batch Plant Certificates to verify mix design quantities and condition upon delivery to the site.
- b. Certificates to include: Date, time, ingredient quantities, water added at plant and on job, total mixer revolutions at time of placement, and time of departure.
- c. Concrete with specified water cement ratio: Add no water on site unless mix design and batch records each show additional water may be added. See ASTM C94 for additional requirements.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.
- B. Verify work of other sections is complete and tested as required before proceeding.

3.2 PREPARATION

- A. Observation, Inspection and Testing:
 1. Architect/Engineer: Notify not less than 2 working days before each concrete placement, for observation and review of reinforcing, forms, and other work prior to placement of concrete.
 2. Testing Agency: Notify not less than 24 hours before each placement for inspection and testing.
- B. Placement Records: Contractor shall maintain records of time, temperature and date of concrete placement including mix design and location in the structure. Retain records until completion of the contract. Make available for review by Testing Agency and Architect/Engineer.
- C. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.
- D. Verify location, position and inclusion of all embedded and concealed items.
- E. Verify installation of vapor retarder under interior slabs on ground, as specified in related section, is complete.
- F. Cleaning and Preparation:
 1. Remove loose dirt, mud, standing water, and foreign matter from excavations and cavities.
 2. Close cleanout and inspection ports securely.
 3. Thoroughly clean reinforcement and other embedded items free from loose rust and foreign matter. Maintain reinforcing securely in place. Do not place concrete on hot reinforcing.
 4. At cold joints, remove laitance from previously placed concrete surface.
 5. Dampen form materials and substrates on which concrete is to be placed at least

- 1 hour in advance of placing concrete; repeat wetting as necessary to keep surfaces damp. Do not saturate. Do not place concrete on saturated material.
- a. Thoroughly wet wood forms (except coated plywood), bottom and sides of trenches, adjacent concrete or masonry and reinforcement.
- b. Concrete slabs on base rock, dampen rock.
- c. Concrete slabs on vapor retarder, do not wet vapor retarder.

- 6. Verify that metal forms are clean and free of rust before applying release agent.
- 7. Thoroughly clean metal decking. Do not place concrete on wet deck surface.
- 8. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

- G. Drill holes in existing concrete at locations where new concrete is doweled to existing work. Insert steel dowels and prepare connections as detailed.
- H. Do not overcut at existing concrete work to remain. Contractor is responsible for repair/replacement of overcut concrete to the Owner's satisfaction.

3.3 CONCRETE PLACEMENT

- A. Transporting:
 - 1. Provide clean, well-maintained equipment of sufficient quantity and capacity to execute the work and produce concrete of quality specified.
 - 2. Handle and transport concrete from mixer to final deposit location as rapidly as practicable. Prevent separation or loss of ingredients.

- B. Perform concrete placement by methods which will not puncture, damage or disturb vapor retarder membrane. Repair all damage to vapor retarder membrane before covering.

- C. Placement - General: Placement, once started, shall be carried on as a continuous operation until section of approved size and shape is completed. Provide construction joints as detailed on the drawings. Engineer's written approval required for all deviations.
 - 1. Deposition:
 - a. Deposit concrete to maintain an approximately horizontal plastic surface until the completion of the unit placement.
 - b. Deposit as neatly as practicable in final position, minimize re-handling or flow.
 - c. Do not drop concrete freely where reinforcing bars, embeds, or obstructions occur that may cause segregation. Provide spouts, elephant trunks, or other means to prevent segregation during placement.

 - 2. Depth: Layered placement in columns and walls shall not exceed ten feet vertical depth.
 - a. Place concrete in minimum 32 inch horizontal lifts.
 - b. Schedule placement to ensure that concrete will not take initial set before placement of next lift.
 - c. No horizontal cold joints are allowed in columns or walls.

 - 3. Progress Cleaning: Remove all concrete spilled on forms or reinforcing steel in portions of structure not immediately concreted. Remove completely before concrete sets.

 - 4. Interruptions: Shut down placement operations and dispose of all remaining mixed concrete and concrete in hoppers or mixers following all interruption in

placement longer than 60 minutes.

- a. If such interruption occurs, provide new or relocate existing construction joints as directed by Engineer.
- b. Cut concrete back to the designated line, cleaning forms and reinforcing as herein specified.
- c. Prepare for resumption of placement as for new unit when reason for interruption is resolved.

D. Consolidation:

1. Consolidate all concrete thoroughly during placement with high-speed mechanical vibrators and other suitable tools. Perform manual spading and tamping to work around reinforcement, embedded fixtures, and into corners of formwork as required to obtain thorough compaction.
 - a. Provide vibrators with sufficient amplitude for adequate consolidation.
 - b. Use mechanical vibrators at each point of concrete placement.
 - c. Keep additional spare vibrators, in addition to those required for use, at the site for standby service in case of equipment failure.
2. Consolidate each layer of concrete as placed.
 - a. Insert vibrators vertically at points 18 to 30 inches apart; work into top area of previously placed layer to reconsolidate, slowly withdraw vibrator to surface.
 - b. Avoid contact of vibrator heads with formwork surfaces.
 - c. Systematically double back and reconsolidate wherever possible. Consolidate as required to provide concrete of maximum density with minimized honeycomb.

E. Unacceptable Materials:

1. Do not place concrete that has started to set or stiffen. Dispose of these materials.
2. Do not add water on site to concrete except as specified in the approved mix design, see PART 2 above.

F. Protection of installed work:

1. Do not introduce any foreign material into any specified drainage, piping or duct systems.
2. Contractor shall bear all costs of work required to repair or clean affected work as a result of failure to comply with this requirement.

3.4 FLATWORK

A. General Requirements for All Concrete Formed & Finished Flat:

1. Edge Forms and Screeds: Set accurately to produce indicated design elevations and contours in the finished surface, edge forms sufficiently strong to support screed type proposed.
2. Jointing: Located and detailed as indicated.
3. Consolidation: Concrete in slabs shall be thoroughly consolidated.

B. Flatwork Schedule:

1. Exterior Slabs-On- Ground: Place concrete directly over sub-base as indicated.
 - a. Sub-Base: Clean free-draining, crushed base rock, 4 inch minimum thickness, thoroughly compacted.

3.5 FORMED SURFACES

- A. Form all concrete members level and plumb, except as specifically indicated. Comply with tolerances specified in ACI CODE-318, ACI SPEC-301, and this specification, except that maximum permissible deviation is 1/4 inch end-to-end for any single member.
- B. Cambers: Provide all cambers indicated in the formwork construction. Set screeds to produce specified cambers in the finished concrete.

3.6 CONCRETE FINISHES

- A. Flatwork Finishing:
 - 1. Perform with experienced operators.
 - 2. Finish surfaces monolithically. Establish uniform slopes or level grades as indicated. Maintain full design thickness.
 - 3. In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains as indicated on drawings.
 - 4. Flatwork Finish Types:
 - a. Wood Float Finish: Surfaces to receive quarry tile, ceramic tile, or cementitious terrazzo with full bed setting system, or wood frame for raised finished floors.
 - b. Steel Trowel Finish: Surfaces to receive carpeting, resilient flooring, seamless flooring, thin set terrazzo, thin set tile or similar finishes specified in related sections. Trowel twice, minimum.
 - c. Broom Texture Finish: Exterior surfaces as indicated or for which no other finish is indicated. Finish as for steel trowel finish, except immediately following first troweling, (depending on conditions of concrete and nature of finish required) provide uniform surfaces texture using a medium or coarse fiber broom.
- B. Other Concrete: Provide as required to achieve appearance indicated on structural and architectural drawings and related sections.
 - 1. Repair surface defects, including tie holes, immediately after removing formwork.
 - 2. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
 - 3. Exposed Form Finish: Finish concrete to match forms. Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
 - a. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
 - b. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
 - c. Cork Floated Finish: Immediately after form removal, apply grout with trowel or firm rubber float; compress grout with low-speed grinder, and apply final texture with cork float.
 - 4. Intermediate joint and score marks and edges: Tool smooth and flush unless otherwise indicated or as directed by the Architect.
 - 5. Use steel tools of standard patterns and as required to achieve details shown or specified. All exposed corners not specified to be chamfered shall have radiused edges.

3.7 TOLERANCES

- A. Minimum Flatwork Tolerances: Measure flatness of slabs within 48 hours after slab installation in accordance with ACI PRC-302.1 and ASTM E1155 and to achieve the following FF and FL tolerances:
 - 1. Exterior surfaces: 1/8 inch minimum per foot where sloped to drain. Level otherwise. FF20 and FL15.
 - 2. Interior surfaces not otherwise shown or required: Level throughout. FF25 and FL20
 - 3. Interior surfaces required to be sloped for drainage: 1/8 inch in 10 ft.
 - 4. Finish concrete to achieve the following tolerances:
 - a. Under Glazed Tile on Setting Bed: FF30 and FL20.
 - b. Under Resilient Finishes: FF35 and FL25.
 - c. Flooring manufacturer and pertinent section of Division 9.
- B. Formed Surface Tolerances:
 - 1. Permanently Exposed Joints and Surfaces: Provide maximum differential height within two feet of, and across construction joints of 1/16 inch.
 - 2. Vertical Elevations: Elevation of surfaces shall be as shown or approved.

3.8 SEPARATE FLOOR TOPPINGS

- A. Prior to placing floor topping, roughen substrate concrete surface and remove deleterious material. Broom and vacuum clean.
- B. Place required dividers, edge strips, reinforcing, and other items to be cast in.
- C. Apply bonding agent to substrate in accordance with manufacturer's instructions.
- D. Apply sand and cement slurry coat on base course, immediately prior to placing toppings.
- E. Place concrete floor toppings to required lines and levels. Place topping in checkerboard panels not to exceed 20 feet in either direction.
- F. Screed toppings level, maintaining surface tolerances per above.

3.9 CONCRETE CURING

- A. Curing - General: Cure in accordance with ACI SPEC-308.1. Maintain concrete water content for proper hydration and minimize temperature variations. Begin curing immediately following finishing.
- B. Protection During Curing: Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. The General Contractor is responsible for the protection of the finished slab from damage.
 - 1. Avoid foot traffic on concrete for minimum of 24-hours after placement.
 - 2. Protect concrete from sun and rain.
 - 3. Maintain concrete temperature at or above 50 degrees F. during the first 7 days after placement. See Article ENVIRONMENTAL REQUIREMENTS.
 - 4. Do not subject concrete to design loads until concrete is completely cured, and until concrete has attained its full specified 28-day compressive strength or until 21 days after placement, whichever is longer.
 - 5. Protect concrete during and after curing from damage during subsequent building

construction operations. See Article PROTECTION.

- C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 1. Normal concrete: Not less than 7 days.
 - 2. High early strength concrete: Not less than 4 days.
- D. Begin curing immediately following finishing.
- E. Surfaces Not in Contact with Forms:
 - 1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than 3 days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
 - 2. Begin final curing after initial curing but before surface is dry.
 - a. Moisture-retaining cover: Seal in place with waterproof tape or adhesive.
 - b. Curing compound: Apply in two coats at right angles, using application rate recommended by manufacturer.
 - 3. In addition, see specific conditions noted below.
- F. Slabs on Ground: Cure by one of the following methods:
 - 1. Water Cure (Ponding): Maintain 100 percent coverage of water over floor slab areas, continuously for minimum 7 calendar days.
 - 2. Spraying: Spray water over floor slab areas and maintain wet for 7 days.
 - 3. Moisture-Retaining Film or Paper: Lap strips not less than 6 inches and seal with waterproof tape or adhesive; extend beyond slab or paving perimeters minimum 6 inches and secure at edges; maintain in place for minimum 7 days.
 - 4. Absorptive Moisture-Retaining Covering: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides and extend beyond slab or paving perimeters 6 inches minimum; maintain in place for minimum 7 days.
 - 5. Liquid Membrane-forming Curing Compound: Provide only when subsequent concrete treatments or finish flooring specified in related sections will not be affected by cure/sealer. Apply curing compound in accordance with manufacturer's instructions at the maximum recommended application rate in two coats, with second coat applied at right angles to first.
- G. Foundations: Apply curing compound immediately after floating.

3.10 CONCRETE HARDENER

- A. Apply hardener to all floor slabs not receiving other finishes after 30 days minimum curing. Clean slabs of non-compatible cure/sealers or other foreign material(s) and apply in strict accordance with the manufacturer's directions.

3.11 FIELD QUALITY CONTROL

- A. Testing and Inspections by Independent Testing Agency: Provided verification and inspection of concrete per CBC Table 1705.3. Provide written reports for to Engineer, Architect, Contractor and Building Official for the following tests and inspections:
- B. Testing & Inspection: Provide periodic inspection of reinforcing steel. Provide continuous inspection during placement of structural class concrete, 3000 psi or more.

Non-structural class concrete with a design strength of 2500 psi or less to have periodic inspection on a 150 cubic yard basis as required to assure conformance.

1. Provide periodic inspection of bolts in concrete prior to and during placement where so noted on the construction documents.
 2. Structural Concrete Cylinder Tests: Form in accordance with ASTM C31.
 - a. Take four standard 6 inch x 12 inch (or five 4 inch x 8 inch) cylinder specimens on the site, of each class of concrete as specified in PART 2, not less than once a day or for each 150 cubic yards or 5000 sq ft or fraction thereof placed each day.
 - b. Record the location of each concrete batch in the building in a log and also note on each specimen.
 - c. Perform standard compression test of cylinders in accordance with ASTM C39, one at 7 days and two (three for 4x8 cylinders) at 28 days.
 - d. Hold fourth (fifth) cylinder untested until specified concrete strengths are attained.
 3. Structural Concrete Slump Test and Air Tests: Perform slump in accordance with ASTM C143 and air content in accordance with C231 or C173 at the time of taking test cylinders, and/or at one-hour intervals during concrete placing.
 4. Measure and record concrete temperature in accordance with ASTM C1064 upon arrival of transit mixers and when taking specimens. Note weather conditions and temperature.
 5. Determine concrete density in accordance with ASTM C138 at the time of forming test cylinders.
 6. Propose adjustments to reviewed mix designs for Architect / Engineer review to account for variations in site or weather conditions, or other factors as appropriate.
 7. Water Vapor Transmission Tests: Floors receiving floor finishes specified in related sections will be tested prior to installation of flooring systems. Refer to sections specifying floor finishes for related requirements.
- C. Services by Contractor:
1. Rejection of Concrete Materials: Do not use the following without prior written approval of the Architect/Engineer;
 - a. Materials without batch plant certificates.
 - b. Materials not conforming to the requirements of these specifications.

3.12 ADJUSTING

- A. Inspect all concrete surfaces immediately upon formwork removal. Notify Architect/Engineer of identified minor defects. Repair all minor defects as directed.
- B. Surface and Finish Defects: Repair as directed by the Architect/Engineer, at no added expense to the Owner. Repairs include all necessary materials; reinforcement grouts, dry pack, admixtures, epoxy and aggregates to perform required repair.
 1. Repair minor defective surface defects by use of drypack and surface grinding. Specific written approval of Architect/Engineer is required. Submit proposed patching mixture and methods for approval prior to commencing work.
 2. Slabs-on- Ground, Elevated Slabs and on Slabs on Metal Deck: Review for "curled" slab edges and shrinkage cracks prior to installation of other floor finishes. Grind curled edges flush, fill cracks of 1/16 inch and greater with cementitious grout.
 3. Grind high spots, fins or protrusions caused by formwork; Fill-in pour joints,

voids, rock pockets, tie holes and other void not impairing structural strength.
Provide surfaces flush with surrounding concrete.

3.13 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required compressive strength, lines, details, dimensions, tolerances, finishes or specified requirements; as determined by the Architect/Engineer.
- B. Repair or replacement of defective concrete will be determined by the Architect/Engineer who may order additional testing and inspection at his option. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- C. Specific Defects:
 - 1. "Low-Strength"; Concrete Not Meeting Specified Compressive Strength after 28 days:
 - a. Concrete with less than 25% Fly Ash or 35% Slag as cementitious material: Test remaining cylinder(s) at 56 days. If strength requirements are met, concrete strength is acceptable.
 - b. Concrete with 25% or more Fly Ash or 35% or more Slag as cementitious material: Test remaining cylinder(s) at 70 days. If strength requirements are met, concrete strength is acceptable.
 - 2. Excessive Shrinkage, Cracking, Crazing or Curling; Defective Finish: Remove and replace if repair to acceptable condition is not feasible.
 - 3. Lines, Details, Dimensions, Tolerances: Remove and replace if repair to acceptable condition is not feasible.
 - 4. Slab sections not meeting specified tolerances for trueness/flatness or lines/levels: Remove and replace unless otherwise directed by the Architect/Engineer. Minimum area for removal: Fifteen square feet area unless directed otherwise by the Architect/Engineer.
 - 5. Defective work affecting the strength of the structure or the appearance: Complete removal and replacement of defective concrete, as directed by the Architect/Engineer.

3.14 CLEANING

- A. Maintain site free of debris and rubbish. Remove all materials and apparatus from the premises and streets at completion of work. Remove all drippings; leave the entire work clean and free of debris.
- B. Slabs to Receive Floor Finishes Specified in other sections: Remove non-compatible cure/sealers or other foreign material(s) which may affect bonding of subsequent finishes. Leave in condition to receive work of related sections.

3.15 PROTECTION

- A. Protect completed work from damage until project is complete and accepted by Owner.
- B. Construction Loads: Submit engineering analysis for equipment loads (including all carried loads) specified in article submittals.
- C. Keep finished areas free from all equipment traffic for a minimum of 4 additional days following attainment of design strength and completion of curing.

- D. Protection of Drainage Systems:
 - 1. Care shall be taken not to introduce any foreign material into any specified drainage, piping or duct system.
 - 2. Cost of work to repair or clean drainage system as a result of failure to comply with this requirement will be back charged to the contractor.

- E. Cover traffic areas with plywood sheets or other protective devices; maintain protection in place and in good repair for as long as necessary to protect against damage by subsequent construction operations.

END OF SECTION

SECTION 03 49 13

GLASS FIBER REINFORCED CONCRETE COLUMN COVERS

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Manufacturer to provide all labor, materials, equipment, and related services required for the fabrication of molded glass fiber reinforced concrete composites (G.F.R.C.) shapes shown in the contract documents.
- B. Installer to provide all labor, materials, equipment and related services required for complete erection of the G.F.R.C. and joint treatment if required.

1.02 RELATED WORK

- A. Section 03 30 00 Cast-in-Place Concrete
- B. Section 06 10 00 Rough Carpentry
- C. Section 07 92 00 Joint Sealers
- D. Section 09 91 13 Exterior Painting

1.03 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
 - 3. ASTM C1116 and AC32 - Standard Specification for Fiber-Reinforced Concrete and Acceptance Criteria.
 - 4. ASTM C150 - Standard Specification for Portland Cement.
- B. American Association of State Highway and Transportation Officials (ASHTO):
 - 1. AASHTO M85 - Standard Specification for Portland Cement
- C. Canadian Standards Association (CSA):
 - 1. CSA A3001 - Cementitious Materials for Use in Concrete

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Verification Samples: Two representative 10"x10" samples of texture and color.

- D. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction. Include installation details including all connection hardware.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.07 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.08 WARRANTY

- A. Manufacturer's standard limited warranty unless indicated otherwise.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer: Subject to compliance with these specifications, pipe support systems shall be:
 - 1. Legacy Cast Stone and Composites LLC; 4420 Andrews St. Suite A; N. Las Vegas, NV 89081; (702) 968-0222; www.legacylv.com
 - 2. Architectural Mall, Inc.; St Paul Blvd., Carol Stream, IL 60188; (877) 279-9993; www.columnsandbalustrades.com
 - 3. CastWorks by Armstrong World Industries, Inc.
- B. Substitution Limitations: Subject to requirements of section 00 70 00 General Conditions.

2.02 GLASS FIBER REINFORCED CONCRETE (GFRC):

- A. G.F.R.C. to be fabricated using long strand continuous glass fiber mats laminated with polymer modified Portland Cement.

- B. Embeds and reinforcement (if required by manufacturer) to be galvanized steel or wood.
- C. G.F.R.C. members to be stored in climate controlled conditions for sufficient period of time to ensure product stability before being shipped.
- D. All G.F.R.C. members to have identification marks, as indicated on shop drawings, clearly displayed on backside of part.
- E. Miscellaneous Materials:
 - 1. All other materials, i.e. screws, clips, adhesives, shims, hanger wire, etc., to be per manufacturers shop drawings and/or job specifications and shall be supplied by installer of G.F.R.C. materials.

2.03 PHYSICAL PROPERTIES:

- A. Glass Fiber = 5-6% by weight
- B. Shell Thickness = +/- 3/8"
- C. Weight = 2-1/2 lbs – 4-1/2 lbs./ft.
- D. Density = 125-130 lbs./cu. Ft.
- E. Finish = Smooth
- F. Tensile Strength = 1110 psi. (ASTM C947)
- G. Flexural Strength = 2590 psi. (ASTM C947)
- H. Compressive Strength = 9520 psi. (ASTM C472)
- I. Impact Strength = 12.51 ft lbs./in. (ASTM D256)

2.04 TOLERANCES:

- A. Dimension – all directions +/- 3/16" total
- B. Thickness 3/8" +/- 1/8"
- C. Warpage or bowing 1/16" per foot, 3/16" total across the full height or width

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until the substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
- B. Exterior tape and bed joints are to be attached with an exterior grade construction adhesive. Then taped and floated using fiberglass mesh tape and a bedding compound

of Portland Cement, bonding agent, water fine washed silica sand (sand omitted in finish coats) and clean the joint to match piece surface and shape.

- C. Countersunk fasteners and damage are to be patched using same bedding compound as used to float joints.
- D. Control joints or exposed joints to be filled with appropriate backer rod and a sealant (Dow Corning 795 or Soneborn NP-1 or equally capable of withstanding +/- 25% joint movement).
- E. See Painting Specifications. G.F.R.C. is shipped as a Natural Portland/Gray color. Field finishing is required and should be treated as a masonry/concrete product.

3.04 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.05 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturers recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 05 73 00

DECORATIVE METAL RAILINGS

PART 1 – GENERAL

1.01 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Manufacturer to provide all labor, materials, equipment, and related services required for the fabrication of decorative metal guard railing. Manufacturer to provide delegated design including structural engineering calculations stamped and signed by a currently licensed Civil or Structural engineer in the state of California.
- C. Installer to provide all labor, materials, equipment and related services required for complete erection of the guard railing including anchoring and finish touch-up.

1.02 RELATED WORK

- A. Section 02 41 19 Selective Building Demolition

1.03 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
 - 5. Documentation of recycled content, indicating postconsumer and preconsumer recycled content and percentages.
- C. Shop Drawings: Include plans, elevations, sections, and attachment details.
- D. Samples: Submit three (3) physical samples of power coating finish for color and texture review.
- E. Delegated Design Submittal: For guard railings, including analysis data signed and sealed by a California licensed Civil or Structural engineer responsible for their preparation.

1.04 INFORMATIONAL SUBMITTALS

- A. Mill Certificates: Signed by manufacturers of stainless steel products, certifying that products furnished comply with requirements.
- B. Welding certificates.

1.05 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect mechanical finishes on exposed surfaces of railings from damage by applying a strippable, temporary protective covering before shipping. Properly crate, wrap, or package railing components for shipment and on-site storage.
- B. Store railing components in dry well-ventilated areas away from heat sources and direct sunlight. Do not expose to damp or wet conditions.
- C. Do not scratch or otherwise mar finished surfaces during hoisting and erection of the work. Maintain squareness of railings during hoisting and installation.

1.07 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.08 WARRANTY

- A. Special Warranty on Railing Finishes: Manufacturer agrees to repair finish or replace metal railings that show evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Warranty Period: [Five] [10] years from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer: Subject to compliance with these specifications, pipe support systems shall be:
 1. GRECO, a CSW Industrials Company; 9410 Eden Ave., Hudson, FL 34667; (727) 372-1100; www.grecoinstallations.com
 2. Crusader Fence Company; 1800 Goodyear Rd, Benicia, CA 94510; (415) 449-1962; www.crusaderfence.com/
 3. Contact California Steel Fabricators; 1120 Reno Ave., Modesto, CA 95351; (209) 566-0629; www.calsteelfab.com
- B. Substitution Limitations: Subject to requirements of section 00 70 00 General Conditions.

2.02 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified California licensed Civil or Structural engineer, to design guard railings including attachment to concrete slab.

- B. Structural Performance: Railings, including attachment to concrete slab on grade, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ft. (0.73 kN/m) applied in any direction.
 - b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
 2. Infill of Guards:
 - a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
 - b. Infill load and other loads need not be assumed to act concurrently.

2.03 METALS, GENERAL:

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

2.04 STEEL AND IRON DECORATIVE RAILINGS:

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 7.5 percent.
- B. Tubing: ASTM A500/A500M (cold formed)
- C. Bars: Hot-rolled, carbon steel complying with ASTM A29/A29M, Grade 1010
- D. Plates, Shapes, and Bars: ASTM A36/A36M

2.05 FABRICATION

- A. Fabricate railings to comply with requirements indicated in the contract drawings including dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to resist structural loads.
- B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations.
 1. Clearly mark units for reassembly and coordinated installation.
 2. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately.
 1. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated.
 2. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water.
 1. Provide weep holes where water may accumulate.
 2. Locate weep holes in inconspicuous locations.

- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Shop fabricate railings with welded connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #1 welds; ornamental quality with no evidence of a welded joint.
- I. Close exposed ends of hollow railing members with prefabricated cap and end fittings of same metal and finish as railings.

2.06 STEEL AND IRON FINISHES

- A. Powder-Coat Finish for Uncoated Ferrous Metal: Prepare, treat, and coat nongalvanized ferrous metal to comply with resin manufacturer's written instructions and as follows:
 - 1. Prepare uncoated ferrous-metal surfaces to comply with SSPC-SP 6/NACE No. 3.
 - 2. Treat prepared metal with zinc-phosphate pretreatment, rinse, and seal surfaces.
 - 3. Apply thermosetting polyester or acrylic urethane powder coating with cured-film thickness of not less than 1.5 mils (0.04 mm).
 - 4. Color: Manufacturer's standard "Gloss black"

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Installer and manufacturer shall review the site construction conditions for completeness and timing of guard railing. Do not proceed with installation until other construction that could damage guard railing is complete.

3.02 PREPARATION

- A. Attach railings in Permanente fashion initially. Do not temporarily support railings that do not comply with structural performance requirements.

3.03 INSTALLATION

- A. Perform cutting, drilling, and fitting required for installing railings.
 - 1. Fit exposed connections together to form tight, hairline joints.
 - 2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
 - 3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
 - 4. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 5. Set posts plumb within a tolerance of 1/16 inch in 3 ft. (2 mm in 1 m).

6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 ft. (6 mm in 3 m).
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
 1. Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

3.04 REPAIR

- A. Touchup Painting:
 1. Immediately after erection, clean field welds, bolted connections, and abraded areas of prefinished surfaces and repair finish to original color, gloss, and texture. Refer to power coating manufacturers recommendations for touch-up procedures.

3.05 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01 and Building Department approved Testing and Inspection form.

3.06 CLEANING AND PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period, so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes: All labor, materials and equipment and all operations required to complete all rough carpentry and structural framing as indicated on the drawings; to produce shapes and configurations as shown, as required; and as specified herein, including:
1. Structural floor, wall, and roof framing.
 2. Floor, wall, and roof sheathing.
 3. Rough hardware, framing connectors and fasteners.
 4. Treatment of wood.
 5. Concealed wood blocking for support of toilet and bath accessories, wall cabinets, wood trim, and other work requiring supporting blocking.
 6. Miscellaneous wood nailers and furring strips, including roof applications, other wood framing, furring, shims or blocking as required to complete the work.
- B. Related Sections:
1. Pertinent sections of Division 01 specifying Quality Control and Testing Agency services.
 2. Pertinent sections of Division 01 specifying Structural Product Requirements: Structural Product Options, Substitution procedures and limitations, transportation, handling and storage.
 3. Pertinent sections of Division 03 specifying wood formwork construction and/or setting anchors in concrete.
 4. Pertinent section of Division 06 specifying wood construction and materials.
 5. Pertinent sections of other divisions specifying steel or concrete construction.

1.02 REFERENCES

- A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC): Chapter 23 Wood.
- B. American National Standards Institute (ANSI) / American Wood Council (AWC) "NDS - National Design Specification for Wood Construction".
- C. National Institute of Standards and Technology (NIST) / Engineered Wood Association (APA) "PS 1 - Voluntary Product Standard for Structural Plywood".
- D. NIST / APA "PS 2 - Performance Standard for Wood-Based Structural-Use Panels".
- E. NIST "PS 20 - American Softwood Lumber Standard".
- F. Redwood Inspection Bureau (RIS) "Standard Specifications for Grades of California Redwood Lumber".
- G. West Coast Lumber Inspection Bureau (WCLIB) "Standard Grading Rules for West Coast Lumber No. 17".
- H. Western Wood Products Association (WWPA) "Western Lumber Grading Rules".

- I. American Wood Preservers Association (AWPA) “Book of Standards”.

1.03 RELATED WORK

- A. Section 01 26 00 Contract Modification Procedures
- B. Section 01 50 00 Temporary Facilities and Controls
- C. Section 01 56 00 Temporary Barriers and Enclosures
- E. Section 01 74 19 Construction Waste Management and Disposal

1.04 SUBMITTALS

- A. Submit in accordance with pertinent sections of Division 01 specifying submittal procedures. Submit for review prior to fabrication. Submittals that do not meet these requirements will be returned for correction without review.
 - 1. Substitutions for products specified require conformance to substitution requirements in Division 01.
 - 2. Review of materials and hardware for substitution to products specified is at the additional expense of the Contractor.
- B. Limitation of Review: Structural Engineer's review will be for general conformance with design intent as indicated in the Contract Documents and does not relieve Contractor of full responsibility for conformance with the Contract Documents. The General Contractor shall review and approve shop drawings prior to submittal to the Architect/Engineer.
- C. Product Data:
 - 1. Submit manufacturer's product data, specifications, and installation instructions for & location of framing connectors, wood preservative materials, application instructions, and fasteners. Include complete, accurate equivalence data when submitting alternate products to those specified. Provide samples of these items upon request.
 - 2. Submit product data and current ICC-ES report for machine-driven nails, fasteners, and equipment, including dimensions of all fasteners, including head, shank diameter and length.
- D. Manufacturer's Certificate: Submit all certifications of physical and chemical properties of materials as specified below in Article titled QUALITY ASSURANCE.
 - 1. Certify that wood products supplied for rough carpentry meet or exceed specified requirements, including specified moisture content.

1.04 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies, refer to pertinent sections of Division 01 and CBC Chapter 17.
- B. All tests shall be performed by a recognized testing agency as specified in pertinent sections of Division 01.
- C. Inspection of fabricators is required per CBC 1704.2.5 unless fabricator is registered and approved by the building official. Wood product quality standards:
 - 1. All wood products to comply with article REFERENCES.

2. Factory-mark each piece of lumber and sheathing with type, grade, mill, and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.
 3. Sheathing panels to be marked by APA (The Engineered Wood Association).
- D. End-Jointed lumber shall not be used.
- E. Hardware and engineered wood products shall have current ICC ES Evaluation/research reports that are equivalent to products specified.
- F. Employ competent workers experienced in work of the types specified and required.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent requirements of Division 01.
- B. Delivery: Time delivery and installation of carpentry products to avoid delaying other trades whose work is dependent on or affected by this section and to comply with moisture content, protection and storage requirements.
- C. Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and sheathing panels to prevent deformation and provide air circulation within stacks.
1. Store materials for which a maximum moisture content is specified only in areas where relative humidity has been reduced to a level where specified moisture content can be maintained.
 2. Handle and store materials above ground to prevent damage, contamination, or accumulation of dirt or foreign materials.
 3. Provide special protection for horizontal sheathing panels. Deformation of panels due to moisture is not acceptable.

1.06 PROJECT/SITE CONDITIONS

- A. Verify all conditions at project site affecting the work; work to field dimensions as required. Coordinate carpentry installation with size, location, and installation of service utilities.
- B. Sequence rough carpentry installation activities to allow sufficient time for:
1. Review of all submittals.
 2. Indicate submittal review, procurement, and testing activities in the project schedule prior to the start of installation. Installation durations shall be based on hand-nailed installation methods specified.
 3. Attainment of specified maximum lumber moisture content.

PART 2 – PRODUCTS

2.01 DIMENSIONED LUMBER

- A. General
1. Size per industry standards for nominal sizes shown; S4S (sanded four sides).
 2. Warped/twisted and excessively checked members shall not be used regardless of grade marks.
 3. At the Contractor's option, engineered lumber of equivalent size and material properties may be substituted for solid sawn lumber where material is difficult to

source due to length, availability, etc. Submit proposed substitution to Engineer for review prior to purchasing materials.

- B. Moisture content of framing:
1. All lumber to be maximum 19% at time of fastener installation. All lumber to be maximum 19% at time of close-in, unless noted otherwise.
 2. The Owner's Testing Laboratory will test for moisture content prior to commencement of close-in.
 3. The Contractor shall recognize that excessive shrinkage of lumber results from excess moisture content at the time of installation. The Contractor will compensate for use of such lumber by waiting for acceptable moisture content before close in and/or by replacing/repairing lumber that has sagged, twisted, or warped prior to close in.
 4. Deviation from this specification would require structural redesign of connections and fasteners.
- C. Sills/ledgers on concrete or masonry: No. 2 pressure treated Douglas Fir and as called for on the drawings.
- D. Interior structural framing shall be Douglas Fir (D.F.) with grades as noted below, unless otherwise specified on the drawings. All grades are per WCLIB standard grading rules.
1. All permanently exposed (interior or protected from weather) framing shall be select structural grade with no box heart.
 2. Except per 1 above, unless noted otherwise, minimum grades are:
 - a. Floor/roof joists/rafters (2x) and 2x8 & larger studs: D.F. No. 2
 - b. 2x4 and 2x6 studs and plates: D.F. No. 2
 - c. 4x and larger: D.F. No. 1
 - d. Blocking: D.F. No. 2
 - e. 6x8 and larger posts and beams may be SGL/CGL per below unless noted otherwise on the drawings.
- E. Framing not otherwise shown or specified: Douglas Fir construction grade per WCLIB paragraphs applicable to uses and sizes required.

2.02 STRUCTURAL SHEATHING PANELS

- A. Plywood: Structural sheathing shall conform to product standard PS-1 or PS-2. All panels shall have a minimum bond classification of "Exposure 1" and bear the trademark of the Engineered Wood Association (APA) or other qualified agency. Grades shall be "Rated Sheathing" or "Structural 1" as required on the drawings.
- B. Oriented Strand Board (OSB): All structural OSB shall be grade marked by a qualified agency for conformance with Product Standard PS-2 and shall be fabricated with exterior glue. Grades shall be as required on the drawings.

2.03 TREATED WOOD:

- A. Treated Lumber and Plywood: Comply with requirements of AWPA Standard U1. See Standard U1 for "Use Category" designations. Do not provide higher Use Category lumber than that specified. Maximum moisture content shall be the same as required for "dimensioned lumber" as specified above.
- B. Preservative Treated Lumber
1. General

- a. Preservatives shall be waterborne. Preservative retention rate shall be as required per AWPAs Standards U1 & T1. Lumber shall be Douglas Fir No. 2 (or better). Cut faces of treated wood shall be brush treated (two complete applications) prior to installation.
 - b. Lumber less than 8 inches above grade and lumber less than 6 inches above exterior hard-surface flatwork shall be treated.
 - c. Each piece of wood shall be stamped by the wood preservative applicator to identify its treatment and preservative retention.
2. Lumber at interior, non-weather exposed locations installed adjacent to concrete or masonry shall be Use Category UC2. Examples include sill plates & ledgers and lumber in contact with roofing, flashing, or water proofing. Borate treated lumber meeting AWPAs UC2 is acceptable in this application.
 3. Lumber at exterior locations, not in contact with soil/ground, shall be Use Category UC3B. Examples include Douglas Fir decking and deck framing.
 4. Lumber in contact with soil/ground shall be Use Category UC4A. Examples include timber retaining walls.
 5. Poles, posts, and sheathing panels shall be treated as recommended by AWPAs Standard U1 per use and exposure.
 6. Maximum Volatile Organic Compound (VOC) content of field-applied preservative shall meet local air quality standards and the California Green Building Code. Provide either of the following:
 - a. Copper Azole (CA-B) per ICC-ES AC326.
 - b. Alkaline/Copper/Quaternary (ACQ).

2.04 FASTENERS AND ACCESSORIES

- A. General requirements for fasteners:
 1. Fasteners shall be of adequate size, spacing, and number to resist design loads under intended use, and types shall be appropriate for the materials or conditions for which used.
 2. Provide washers, pre-drilling, etc. as required for proper installation and to prevent damage to framing.
 3. Fasteners shall be hot-dip galvanized (ASTM A153), mechanically galvanized (ASTM B695 class 55 minimum), stainless steel (type 303, 304, 305, or 316), silicon bronze, or copper by approved methods for the following applications:
 - a. Exterior, exposed use.
 - b. In contact with preservative or fire-retardant treated wood.
 - c. Nails in contact with preservative treated wood containing ammonia shall be stainless steel.
 4. Fasteners in moist corrosive atmosphere to be of stainless steel (type 303, 304, 305, or 316).
 5. Where the retention level of ACQ or MCQ preservative is greater than 0.40 pcf, CBA-A preservative is greater than 0.41 pcf, or CA-B preservative is greater than 0.21 pcf, provide stainless steel fasteners (type 303, 304, 305, or 316).
 6. All fasteners specified by manufacturer shall be installed in framing hardware, unless noted otherwise.
 7. At borate treated lumber a clear zinc coating per ASTM F1941 is acceptable.
- B. Nails and nailing not otherwise shown or specified:
 1. Comply with requirements of governing building code.
 2. For securing materials to hardened concrete or masonry provide hardened steel masonry nails or Simpson Strong-Tie "Titen" screws.

3. For framing and general woodwork: Common bright wire nails (not box nails) with centered full-round heads per ASTM F1667 including Supplement S1. 16d cement coated sinker nails may be used in lieu of common nails for framing, where noted on the drawings. Unless otherwise noted on drawings, nail sizes shall be as follows
 - a. 8d Common: 0.131"Ø x 2-1/2" long with 0.281"Ø head.
 - b. 10d Common: 0.148"Ø x 3" long with 0.312"Ø head.
 - c. 16d Common: 0.162"Ø x 3-1/2" long with 0.344"Ø head.
 4. Nails for sheathing panels shall be of common wire with full round heads and shall be of sufficient length to fully develop the nails.
 5. Machine-driven nails of all types must comply with the requirements of this section. All proposed nails shall match diameter and penetration of specified nails.
 6. Staples shall conform to length and gauges specified and shall be installed to match specified patterns and spacing.
 7. Power Actuated Fasteners (PAF): Use only as approved by the Architect/Engineer; operators shall be qualified.
- C. Bolts: Malleable iron washers or steel plate washers, unless otherwise shown, shall be provided under all bolt heads and nuts.
1. Machine Bolts: ASTM A307 and ANSI/ASME B18.2.1, standard semi-finished machine bolts as shown or required. Nuts shall be standard size unless noted otherwise and shall be per ASTM A563.
 2. Anchor bolts or threaded rod anchors shall conform to ASTM F1554, ASTM A307, or ASTM A36. Anchor bolts shall be headed or end in two nuts tightened against one another, unless noted otherwise. Provide embedded plate washer as indicated on drawings. No upset threads allowed. No L or J bolts allowed.
- D. Lag screws: Standard hex lag screws per ANSI/ASME B18.2.1.
- E. Wood screws: Standard wood screws per ANSI/ASME B18.6.1.
- F. Power Actuated Fasteners (PAF): Hilti X-CP72, ICC ESR-2379; Simpson PDPAWL-300 MG, ICC ESR-2138.
- G. Framing hardware: Fabricated sheet metal timber framing connectors shall be manufactured from painted or galvanized G90 steel by Simpson Strong-Tie (connectors specified on drawings are per Simpson Strong Tie, or approved equivalent. Connectors shall be at least 16 gauge material, (1/8 inch plate materials where welded), unless otherwise noted, punched for nailing. All heavy hardware to be fabricated from A36 steel per Division 05, Metals. All hardware intended for exterior exposed use shall be galvanized per G185 ASTM A653 or stainless steel.
1. For contact with preservative or fire-retardant treated wood, provide minimum G185 galvanizing per ASTM A653.
 2. Nails and nailing shall conform to the manufacturer's instructions with a nail provided for each punched hole. Nails to be used with framing accessories are subject to the requirements specified in this Section for fasteners and anchors.

2.05 SOURCE QUALITY CONTROL

- A. The Testing Agency, as specified in the Article QUALITY ASSURANCE, will perform testing for moisture content of all lumber at time of fastener installation.
- B. The Testing Agency will submit reports as specified in Division 01.

PART 3 – EXECUTION

3.01 REQUIREMENTS FOR STRUCTURAL FRAMING

- A. General
1. Refer to drawings for layouts, notes and details, provide framing as required; comply with governing building code requirements.
 2. Provide framing to achieve true alignments as surfaces receiving finish materials.
 3. It shall be the responsibility of the Contractor to provide and install all wood blocking, furring strips, or grounds detailed or required to provide anchorage for all finishes, accessories, fixtures, etc. as required to complete all work. All blocking and/or backing shall be securely bolted or otherwise anchored in place.
 4. Contractor shall be responsible for layout of anchor bolts, and other hardware embedded in concrete when placed by other trades.
 5. Provide and install all structural framing, blocking, fasteners, brackets, clips, etc. as required to complete work specified in the Construction Documents.
- B. Framing
1. Stud Walls and Framing:
 - a. Cut studs and posts with square ends, unless otherwise shown or noted. All posts and beams shall be "cut to bear" unless otherwise detailed.
 - b. All studs in walls shall be placed with the shortest dimension parallel to the run of the wall. Bearing studs shall extend full height to be the supporting framing as shown; non-bearing studs shall extend to the supporting framing.
 - c. Provide double studs on each side of all openings, unless shown or noted otherwise.
 - d. All openings in stud walls and partitions shall be framed with headers across the top, as shown, with a minimum size (6" nominal depth x stud width) resting on short cripple studs, and as shown on the drawings.
 - e. All stud partitions and walls shall have horizontal solid blocking not less than 2x and of the same width as the stud, fitted and nailed into the studs at mid-height of stud, for studs over 8 feet in height, except as otherwise shown or specified. This blocking shall be so spaced that there shall be no concealed air spaces greater than eight feet in any dimension.
 - f. Stud partitions containing plumbing, heating or other pipes shall be so framed as to give proper clearance for piping. Plumbing, heating and vent pipes exceeding 1-1/2" in inside diameter shall not be placed in partitions used as bearing or shear walls unless completely furred clear of the wall. No notching shall be allowed. Pipes shall be placed in the center of the plate using a neat bored hole and the plates shall be strapped on each side with 3" x 36" x 14 gauge steel punched for 10d nails 3" on center, staggered, or as shown on the drawings.
 2. Top Plates
 - a. Top plates shall be double, set single. Corners where stud wall or partitions meet shall be framed with studs on all surfaces and blocking to form a "rigid" corner with nailing for all corners. Double top plates shall be lapped at corners. Lap splices and nailing per the drawings.
 3. Floor, Roof and Ceiling Framing
 - a. Joists and beams shall be accurately aligned and the position and spacing of all joists and beams shall be as shown and be coordinated with other framing and to other trades prior to actual construction.

- b. Place all joists and beams with crown up. Cantilevered joists and beams shall be placed with the crown down.
- c. Cutting of wood girders, beams or joists for electrical and mechanical lines shall be limited to cuts and bored holes not deeper than 1/5 of the beam depth from the top and located not farther from the support than three times the beam depth and not less than the beam depth. Cuts in excess of this, or single bored holes with a diameter of more than 1" are not permitted without special provisions for framing the beams. Location of all cuts in framing shall receive the prior review of the Architect/Engineer.
- d. Provide vent holes in rafters and/or blocking as shown and/or directed by the Architect.

3.02 STRUCTURAL SHEATHING

- A. General
 - 1. Sheathing nailing shall be as required on the drawings. Do not overdrive (Do not break skin of sheathing face sheet). Over driving will be cause for rejection.
 - 2. Form sheathing may be re-used for concealed sheathing provided the lumber at the time of re-use is approved by the Architect, meets with the framing grade requirements specified herein, is in good condition, and is thoroughly cleaned with all nails removed.
 - 3. Pneumatic nailing devices shall be adjustable so that nail heads do not penetrate skin of sheathing. Contractor shall submit equipment and nails for review prior to use. Refer to PART 2 for other nailing requirements.
- B. Roof and Floor Sheathing: Except "Panelized Roofs", lay with face grain perpendicular to roof rafters, roof trusses or floor joists. Stagger sheets. Block all unsupported sheet edges with 2x material unless noted otherwise.
- C. Wall Sheathing: Lay with face grain either parallel or perpendicular to studs. Exposed bottom edges shall be sealed as recommended by manufacturer. Block all unsupported sheet edges with 2x materials unless noted otherwise.

3.03 ROUGH HARDWARE

- A. General: Nails, spikes, screws, fabricated sheet metal anchors, ties, hangers and any other materials shown or required for the attachment of wood to concrete and wood to steel and wood to wood shall be furnished and installed as part of this work.
- B. Framing Nailing: All framing nailing shall conform to minimum requirements of the Building Code, and with details shown on the drawing.
- C. Bolts, Lag Screws and Washers:
 - 1. Bolts in wood shall be machine bolts unless otherwise noted and shall be of such length that the bearing length of the threads does not exceed $\frac{1}{4}$ of the full bearing length in the member holding the threads. Bolt holes in wood shall be 1/32" oversized. Bolt holes for sill plates may be 1/16" maximum oversize. Holes in steel shall be 1/16" oversize. See Section 3.1 for anchor bolts at sill plates and ledgers.
 - 2. Provide square plate or malleable iron washer and nut at head where bearing is against wood; cut washer under nut where it is against steel. Washer will not be required under head of carriage bolts. Provide malleable iron washers where exposed.

3. All nuts shall be tightened when placed and retightened at completion of the job or immediately before closing with final construction.
 4. Lag screws shall be screwed (not driven) into place. Drill pilot hole to 70% of shank diameter. Drill clearance hole to full shank diameter and depth of unthreaded screw length.
- D. Wood Screws: Minimum penetration is 10 diameters unless noted otherwise. Where fastening hardwood timber species or where wood tends to split, provide pilot hole 70% of screw shank diameter.
- E. Proprietary Fasteners and Hardware: Install per manufacturer's published installation instructions (MPII) and code approval report (e.g. ICC ESR, IAPMO ER, etc). Provide MAX quantity, size, and length of fastener at hardware (i.e. joist hangers, framing, clips, etc) unless otherwise noted per plan.

3.04 INSTALLATION OF ACCESSORIES AND MISCELLANEOUS WOOD

- A. Coordinate installation of wood decking, metal-web wood joists, glued-laminated wood construction, shop-fabricated wood trusses, and wood I- joists.
- B. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members. Fasten curbs corner-to-corner and to rafters with framing connectors configured for this application.
- C. Blocking:
 1. Provide fire blocking at locations and spacing's as required by CBC Chapter 7. Locate other blocking, supplementary framing, backing plates and bracing to facilitate installation of finish materials, fixtures, equipment, services, accessories, and trim requiring attachment and support.
 2. Solid block joists and rafters over all supports with blocking of the same size and material as the joist or rafter.
- D. Furring:
 1. Nominal 1 inch x 3 inch minimum, continuous and spaced at 16 inches on center, maximum.
 2. Install plumb, rigid, and level. Shim where necessary to provide a true, even plane suitable to receive the finish required.
 3. Attach to concrete and masonry as shown in the contract drawings.
- E. Bridging: Use 2 inch solid cross bridging. Nail bottom ends of bridging only after sheathing has been nailed.
- F. Install miscellaneous metal angles, bolts, and other items; secure into formwork where embedded in concrete.
- G. Install accessory items not otherwise set under other sections; after completion of painting and other finishing work; in locations shown or directed by the Architect. Set items plumb, level, and secure using appropriate fastening as applicable.

3.05 FIELD APPLIED WOOD TREATMENT

- A. Field treat all end cuts and holes in preservative treated materials per PART 2.
- B. Apply two brush coats; or full-immersion dip not less than 15 minutes; or as required to thoroughly saturate all surfaces after cutting.

- C. Air dry 2-hours minimum before installation.

3.06 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Surface Flatness of Floor: 1/8 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.
- C. Variation from Plane (Other than Floors): 1/8 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum. Provide framed substrates meeting requirements for application of finishes specified in other sections.
- D. Exposed surfaces shall be free from dents and tool marks, unsanded rough or torn faces and corners, and other defects.

3.07 FIELD QUALITY CONTROL

- A. The Testing Agency, as specified in the Article QUALITY ASSURANCE, will perform the following tests and submit reports as specified in Division 01:
 - 1. Moisture content of all lumber at time of close-in.
 - 2. Periodic special inspection of nailing, bolting, and other fastening within the seismic-force-resisting system including shear walls, wood diaphragms, etc. per CBC Section 1705.13.2, excluding systems with sheathing nailing spacing greater than 4" on center.
 - 3. Special inspection of high load diaphragms per CBC Section 1705.5.1 where designated on documents.

3.08 ADJUSTING

- A. Replace all defective work at Contractor's expense.
- B. Replace defective or damaged work with conforming work.
- C. Correct defects using means that will not injure the materials.
- D. Replace defective or damaged work which cannot be corrected in the field with new work, or return defective items to the shop for repair.
- E. Repair or replace framing lumber sagged, twisted or warped due to shrinkage from excessive moisture content at time of installation, or from other causes.
- F. Adjust to meet specified tolerances.
- G. Architect/Engineer shall review all proposals for the repair or replacement of damaged, defective, or missing work.
- H. Pay expenses incurred by Owner for Architect/Engineer's costs for (re-)design and obtaining approvals of Authorities Having Jurisdiction (AHJ) necessitated by incomplete, inefficiently scheduled, improperly performed, defective or nonconforming work.
- I. Pay expenses due to re-testing and re-inspection necessitated by incomplete, inefficiently scheduled, improperly performed, defective or nonconforming work.

3.09 CLEANING AND PROTECTION

- A. Clean all surfaces upon completion of erection, leave free of grime and dirt. Remove unused materials, tools, equipment, and debris from the premises and leave surfaces broomed clean.
- B. Waste Disposal: Comply with the requirements of pertinent sections of Division 01 specifying cleaning and disposal.
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- C. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- D. Prevent sawdust and wood shavings from entering the storm drainage system.
- E. Protect work from damage by subsequent operations.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Related Documents: Drawings and General Provisions of Contract, including General Conditions and Division 01 Specification Sections apply to Work of this Section as if printed herein.
- B. Section Includes: Description of requirements for materials, fabrications, and installation of sealants, caulking, and associated accessories, except for those specified in other Sections, where indicated on Drawings, and where required to provide for a weather tight and watertight condition shall be furnished and installed under this section of the specifications.
- C. Related Sections:
 - 1. Section 09 24 00 Cement Plaster
 - 2. Section 09 27 13 Glass-Fiber-Reinforced Gypsum Fabrications
 - 3. Section 09 91 00 Painting

1.02 QUALITY ASSURANCE

- A. Referenced and Standards:
 - 1. American Society for Testing and Materials (ASTM)
 - 2. Federal Specifications
- B. Acceptable Manufacturers: Dow Corning; General Electric; Tremco; Vulkem; or 3M or equal.
- C. Applicator's Qualifications: Application of sealants shall be by firm regularly engaged in this type of work and approved by the manufacturer, employing skilled mechanics who are skilled in the application of sealants and caulking herein specified.
- D. Job Mock-up: Prepare sample application in locations directed by Architect. The mock-up shall constitute a standard of acceptance for the Work.
- E. Compatibility: Contractor to verify that all sealants and caulking are compatible with adjacent finishes. Perform Preinstallation adhesion testing per Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.03 SUBMITTALS (Submit per section 01 33 00)

- A. Manufacturer's Data: Submit list of materials proposed for use including complete data including color charts and manufacturer's specifications and installation instructions for each type of sealant, caulking compound, and associated miscellaneous material required. Include published data, letter of certification, or certified test laboratory report indicating that each material complies with the requirements and is intended generally for the application shown. Include location of each material.
- B. Samples: Submit standard color ranges of exposed materials for Architect's selection.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Materials shall be delivered to job in sealed containers with manufacturer's name, labels, project identification, and lot numbers where appropriate.
- B. Store material out of weather in original containers or unopened packages as recommended by manufacturer.

1.05 JOB AND ENVIRONMENTAL CONDITIONS

- A. Job Conditions: The Sealant and Caulking Contractor shall acquaint himself with all conditions relating to the work of this Section.
- B. Environmental Conditions: Do not proceed with installation of sealants under adverse weather conditions or when temperatures are below or above manufacturer's recommended limitations for installation. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of High Early Bond strength.

1.06 WARRANTY

- A. Special Manufacturer's Warranty: Manufacturer's standard form in which exterior joint-sealant manufacturer agrees to furnish exterior joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty period for this work is extended to five (5) years for materials and workmanship against leakage from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Sealants: Sealants and sealant primers shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- D. Stain-Test-Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

2.02 SILICONE JOINT SEALANTS

- A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 790.
 - b. Sika Corporation, Construction Products Division; SikaSil-C990.
- B. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Omniseal 50.
 - b. Dow Corning Corporation; 795.
 - c. Sika Corporation, Construction Products Division; SikaSil-C995.
 - d. Tremco Incorporated; Spectrem 2 Spectrem 3.
- C. Mildew-Resistant, Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. Pecora Corporation; 898.
- D. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Omniplus.
 - b. Dow Corning Corporation; 786 Mildew Resistant.
 - c. GE Advanced Materials - Silicones; Sanitary SCS1700.
 - d. Tremco Incorporated; Tremsil 200 Sanitary.

2.03 URETHANE JOINT SEALANTS

- A. Single-Component, Pourable, Traffic-Grade, Urethane Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Sonolastic SL 1.
 - b. Bostik, Inc.; Chem-Calk 950.
 - c. Sika Corporation. Construction Products Division; Sikaflex - 1CSL.
 - d. Tremco Incorporated; Vulkem 45.

2.04 LATEX JOINT SEALANTS

- A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems; Sonolac.
 - b. Bostik, Inc.; Chem-Calk 600.
 - c. Pecora Corporation; AC-20+.
 - d. Tremco Incorporated; Tremflex 834.

2.05 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type B (bicellular material with a surface skin), or either of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.06 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete
 - b. Masonry
 - c. Unglazed surfaces of ceramic tile
 - d. Portland cement plaster

3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal
 - b. Glass
 - c. Porcelain enamel
 - d. Glazed surfaces of ceramic tile
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
 4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.

5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.04 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
 - b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
 4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.05 CLEAN-UP

- A. Immediately clean adjacent surfaces free of sealant or soiling resulting from this work as work progresses. Use a solvent or cleaning agent as recommended by the sealant manufacturer. All finished work shall be left in a neat, clean condition.
- B. Remove masking tape immediately after tooling joints, leaving finished work in a neat and clean condition.
- C. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so

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UKIAH, CA 95482**

sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

- D. Upon completion of the work of this section, remove all resulting surplus materials, rubbish and debris from the premises.

END OF SECTION

DOCUMENT 09 24 00

CEMENT PLASTER

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Related Documents: Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to work of this Section as if printed herein.
- B. Provide and install all 3-coat cement plaster (stucco) finishes at all locations as shown on the drawings.
- C. Related Sections:
 - 1. Section 06 10 00 Rough Carpentry
 - 2. Section 07 92 00 Joint Sealants
 - 3. Section 09 91 13 Exterior Painting

1.02 QUALITY CONTROL

- A. References and Standards (Latest Edition unless otherwise noted.):
 - 1. California Lathing and Plastering Contractors Association
 - 2. Installation Standard: ASTM E2266, current version.
 - 3. ASTM A641/A641M (2019) Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
 - 4. ASTM A653/A653M (2020) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 5. ASTM C150/C150M (2020) Standard Specification for Portland Cement
 - 6. ASTM C847 (2014a) Standard Specification for Metal Lath
 - 7. ASTM C897 (2015; R 2020) Aggregate for Job-Mixed Portland Cement-Based Plasters
 - 8. ASTM C926 (2020a) Standard Specification for Application of Portland Cement-Based Plaster
 - 9. ASTM C1032 (2014) Standard Specification for Woven Wire Plaster Base
- B. Pre-Stucco Conference: Before starting, conduct conference at Project site. Review methods and procedures related to application, curing procedures, and testing, but not limited to the following:
 - 1. Meet with Architect, Project Inspector, Installer, system manufacturer's representative, and member of the local Bureau for Lath and Plaster.
 - 2. Review methods and procedures related to installing each layer of product within the plaster system.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine substrate conditions and adjacent finishes for compliance with requirements of Contract Documents.
 - 5. Review all flashing details, joints and reveals, penetrations, and conditions that will affect the plaster system.
 - 6. Review temporary protection and weather forecasts requirements for plaster system during and after installation.
 - 7. Safety plan.

1.03 SUBMITTALS

- A. Submit under the provisions of Section 01 33 00.
- B. Product Data: Submit manufacturer's descriptive literature, product specification, and installation instructions for each product.
- C. Samples: Submit (3) 12 inch x 12 inch samples for each type of factory-prepared finish coat and for each texture specified, provide 3 samples applied on Masonite substrate.
- D. Warranty: Warranty against discoloring, cracking, pitting, checking, spalling or other defects, for a period of two (2) years from date of filing of Notice of Completion.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Firm specializing in installing work specified in this Section with experience on at least 5 projects of similar size and scope in past 3 years.
- B. Coordination: Coordinate work in this Section with work in related Sections.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver manufactured materials in original packages, containers, or bundles bearing name of manufacturer and brand. Keep packaged bulk materials dry. Store aggregate on suitable platforms to prevent intrusion of earth or other foreign matter.
- B. Store materials inside under cover, and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.
- C. Maintain site in a neat and orderly appearance, do not scatter materials and equipment. Clean tools and equipment at designated areas only.

1.06 ENVIRONMENTAL CONDITIONS

- A. Do not apply plaster in conditions of rain or high wind. Do not apply when ambient temperature is below 40 degrees F or is expected to fall below this limit within 24 hours after application.
- B. Exterior Plasterwork:
 - 1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
 - 2. Apply plaster when ambient temperature is greater than 40 deg F.
 - 3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.
- C. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.

PART 2 – PRODUCTS

2.01 METAL LATH

- A. Lath types, weights, attachments and support spacings: Conform to CBC Tables in Chapter 25, except as otherwise specified herein. Lath shall be self-furring or utilize “stand-off” fasteners.
- B. Expanded-Metal Lath: ASTM C 847, self-furring cold-rolled carbon-steel sheet with ASTM A 653/A 653M, G60, hot-dip galvanized coating.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ClarkDietrich Building Systems
 - b. Alabama Metal Industries Corporation; a Gibraltar Industries company
 - c. CEMCO; California Expanded Metal Products Co.

2.02 ACCESSORIES

- A. General: Comply with ASTM C 1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required. Refer to details provided in the Contract Drawings.
- B. Metal Accessories:
 - 1. Manufacturers: Subject to compliance with the requirements defined below, provide all products of a single manufacturer selected from the following:
 - a. Stockton Products
 - b. ClarkDietrich Building Systems
 - c. Alabama Metal Industries Corporation; a Gibraltar Industries company
 - d. CEMCO; California Expanded Metal Products Co.
 - 2. Foundation Weep Screed: Fabricated from hot-dip galvanized-steel sheet, ASTM A 653/A 653M, G60 zinc coating. Santa Barbara Weep Screed.
 - 3. Cornerbeads: Fabricated from galvanized steel. Small nose cornerbead with expanded flanges reinforced by perforated stiffening rib.
 - 4. Control Joints: Fabricated from galvanized steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
 - 5. Two-Piece Expansion Joints: Fabricated from galvanized steel; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4 to 5/8 inch wide; with perforated flanges.
 - 6. Vent Screeds: 3" wide, 24 gauge galvanized, depth per plaster.

2.03 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in cement plaster.
- C. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.

- D. Fasteners for Attaching Metal Lath to Substrates: ASTM C 1063.
- E. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter unless otherwise indicated.
- F. Sealant: As specified in Section 07 92 00 "Joint Sealants."
- G. Building Paper as Bond Breaker: Water-vapor-permeable, asphalt-saturated kraft building paper that complies with ICC-ES AC308, Grade D. Provide 2 layers with laps staggered a minimum of 12 inches.

2.04 PLASTER MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I. Omega Super Cement fibered
- B. Sand Aggregate: ASTM C 897.
- C. Admixture:
 - 1. Liquid acrylic polymer used to increase tensile, bond, and flexural strength of the system. Omega Admix 500
- D. Ready-Mixed Finish Coat Plaster for Exterior Walls: Mill-mixed portland cement, aggregates, and proprietary ingredients, for field painting. Colorants not required.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Omega Products International; Super Cement Stucco.
 - b. El Rey Stucco Company, Inc., a brand of Parex La Habra, Inc.; Premium Stucco Finish.
 - c. SonoWall, BASF Wall Systems, Inc.; Thoro Stucco.

2.05 PLASTER MIXES

- A. Proportions and mixing for job-mixed base coat and finish coat must conform to the applicable requirements of ASTM C926. Mixing of mill-mixed finish coat must be in accordance with the manufacturer's directions. Submit detailed description of the proposed job-mix proportions for base and finish coats; including identification of thickness of coats.
- B. Portland cement plaster:
 - 1. Scratch coat: 1 part Omega Super cement fibered and 2 1/2 to 4 parts sand with admixture.
 - 2. Brown coat: 1 part Omega Super cement fibered and 3 to 5 parts sand with admixture.
 - 3. Finish coat: Omega Finish 20/30 mix (pre-packaged bag), 50 to 100 lb. hydrate lime, 100 lb. No. 30 sand, 200 lb. No. 20 sand.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.
- B. Prepare smooth, solid substrates for plaster according to ASTM C 926.

3.03 INSTALLING PAPER AND METAL LATH

- A. Install 2 layers of building paper. First layer shall be continuous and sealed with the trim flashing. The second layer shall be installed independent of the first and run continuous. Installation
- B. Metal Lath: Install according to ASTM C 1063.
- C. Do not install lath across control joints and expansion joints.

3.04 INSTALLING ACCESSORIES

- A. Install according to ASTM C 1063 and at locations indicated on Drawings.
- B. Reinforcement for External (Outside) Corners:
 - 1. Install cornerbead at all exterior corners, both horizontal and vertical.
- C. Control Joints: Locate as approved by Architect for visual effect and as follows:
 - 1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
 - a. Vertical Surfaces: 144 sq. ft..
 - 2. At distances between control joints of not greater than 10 feet o.c.
 - 3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
 - 4. Where control joints occur in surface of substrate directly behind plaster.
 - 5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.
 - 6. In line with the vertical and horizontal corners of doors or windows.

3.05 PLASTER APPLICATION

- A. General: Comply with ASTM C 926.
 - 1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces when measured by a 10-foot straightedge placed on surface.
 - 2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
 - 3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.
- B. Three-Coat Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork, 7/8-inch thickness. Portland cement mixes.
 - 1. Apply equal depth coats by hand trowel or plaster gun for a total of 7/8 inch (22-mm) total thickness.
 - 2. Rod surface to true plane and float to densify.

3. Trowel to smooth surface and make it uniform.

- C. Plaster Finish Coats: Descriptions per ASTM C926 Appendix X1 for estimating purposes.
1. Exterior Wall Finish: Light sand (float) 16/20 finish.

3.06 PLASTER REPAIRS

- A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.07 CLEANING AND PROTECTION

- A. Remove temporary protection and enclosure of other work after plastering is complete. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION

DOCUMENT 09 91 13

EXTERIOR PAINTING

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Summary: Section includes surface preparation and the application of paint systems on exterior substrates:
1. Work includes, but is not limited to, painting of following items, materials, and spaces:
 - a. Cement Plaster
 - b. Glass-Fiber-Reinforced Gypsum columns
 - c. Existing wood paneling at ceiling
 2. Work does not include painting the following items, materials, or spaces:
 - a. Finished metal, such as stainless steel, chromium plated, bronze, aluminum, and similar finished materials, unless indicated otherwise.
 - b. Factory-finished materials, such as clay tiles, etc. unless otherwise specified.
 3. Surfaces for which painting is prohibited:
 - a. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates, fire alarm devices, fire sprinkler heads, etc.
 - b. Elastomeric sealants or silicone sealants not designed for painting.
- D. Definitions:
1. The term "paint" as used throughout these Specifications includes emulsions, enamels, paints, stains, varnishes, sealers, fillers and other coatings whether used as prime, intermediate or finish coat.
 2. Factory Finish: Factory-applied painting system consisting of primer and finish coats.
 3. Gloss levels below are from Master Painters Institute (MPI) Architectural Painting Specification Manual:
 - a. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
 - b. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
 - c. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
 - d. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- E. Related Sections:
1. Section 09 24 00 Cement Plaster
 2. Section 09 27 13 Glass-Fiber-Reinforced Gypsum Fabrications

1.02 QUALITY ASSURANCE

- A. Applicator's Qualifications: All application of paint shall be done only by an application firm normally engaged in this business. All work shall be performed by qualified mechanics working under the supervision of an experienced supervisor.
- B. Paint Coordination: Provide finish coats which are compatible with prime coats used. Review other Sections of these Specifications in which prime paints are provided to ensure compatibility of total coatings system for various substrates. Upon request from other subcontractors, furnish information characteristics of finish materials proposed for use, to ensure that compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems using coating systems as specified with substrates primed by others.
- C. Compliance to EPA Policy: Furnish certification that all paint coatings furnished for 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).
- D. Compliance to all local jurisdiction air quality requirements include the Bay Area Air Quality Management District BAAQMD.

1.03 SUBMITTALS (Submit under provisions of Section 01 33 00 Submittals)

- A. Manufacturer's Data: Manufacturer's technical information describing products, including paint label analysis and application instructions for each material proposed for use. Reference literature to the Architect's material numbers and painting systems. Include manufacturer's statement that components are appropriate to each Painting System.
- B. Samples: Selection of colors and finishes will be made by the Architect from samples submitted for his review and approval. Samples to be 8 inch x 10 inch in size, hand deliver brushed for each color selected.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All materials shall be delivered to the site and stored in their original containers with seals unbroken and labels intact until time of use. Labels shall contain the following information:
 - 1. Name or title of material
 - 2. Manufacturer's stock number and date of manufacture.
 - 3. Manufacturer's name
 - 4. Contents by volume, for major pigments and vehicle constituents.
 - 5. Thinning and mixing instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. Clean up instruction.
- B. Store all painting materials and equipment not in immediate use in areas assigned for that purpose. Store paints in ventilated area at minimum ambient temperature of 50 degrees F and a maximum of 90 degrees F.

1.05 JOB CONDITIONS

- A. Environmental Requirements:

1. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F and 90 degrees F unless otherwise permitted by paint manufacturer printed instructions.
 2. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F and 95 degrees F, unless otherwise permitted by paint manufacturer's printed instructions.
 3. Apply paint under dry and dust-free conditions. Do not apply paint in rain, fog, or mist; or when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.
 4. Painting may be continued during inclement weather only if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.
 5. Provide adequate ventilation so that humidity cannot rise above the dew point of the walls.
- B. Illumination: Perform work under adequate and approved lighting conditions.
- C. Protection: Properly protect floors and other adjacent work by drop cloths or approved coverings during painting operations.

1.06 WARRANTY

- A. Warranty period shall be one (1) year for interior painting against paint failure due to surface conditions, oxidation, fading, for both materials and application. Any failure shall be repainted to new condition by contractor at no cost to the District.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. 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.
- C. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.
- D. Colors: As selected by Architect from manufacturer's full range.
- E. Materials for use on this project shall be "best" grade products of the types specified and listed below as regularly manufactured by the specified paint and varnish manufacturer. Materials not bearing the manufacturer's identification as standard "best" grade product of his regular line will not be considered for use. Materials listed hereunder are taken from various manufacturers listed above and shall be used as the standard required.
- F. Manufacturer's offering products, which comply with requirements of these Specifications, include the following: Dunn-Edwards, Benjamin Moore, Kelly-Moore, & Vista Paint.

- G. Materials (including primers, sealants and undercoats) selected for use for each type of surface shall be the product of a single manufacturer as listed above wherever possible. Use only thinners approved by paint manufacturer, and use only to recommended limits.
- H. Cleaning Solvent: Steel Structures Painting Council SSPC-SP1 1.
- I. Ferrous Metal Cleaner: Phosphoric acid (Fed. Spec. MIL-C-19329) shall be composed of phosphoric acid (85 percent) - parts maximum, and isopropyl alcohol - 15 parts.
- J. Galvanized Iron Cleaner: Acid wash, Galvaprime. Dilute with water according to the manufacturer's recommendations.
- K. Linseed Oil: Boiled type, complying with Fed. Spec. TT-O-364.
- L. Paint Materials: Refer to "Painting Schedules" hereinafter for paint products or materials and number of coats to be applied as finishes to surfaces on this project. Product numbers listed are as manufactured by Dunn-Edwards unless indicated otherwise (equivalent products of other manufacturers listed hereinbefore are also acceptable).

2.02 MIXING

- A. Color-tint sealers and undercoats to correspond with finish color. Vary color of successive coats sufficiently to distinguish between coats.
- B. Obtain the Architect's approval for adjustments of color on job.
- C. Do not reduce any material unless directed to do so by the Architect, or unless recommended by materials manufacturer.
- D. Prepare pigments:
 - 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogenous coating.
 - 2. For good flow and brushing properties.
 - 3. Capable of drying or curing free of streaks or sags.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Applicator must examine areas and conditions under which painting work is to be performed and notify Contractor in writing, with a copy to Architect, of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to applicator.
- B. Application of the first coat of any finishing process shall constitute applicator's acceptance of surfaces within any particular area except gypsum wallboard, which shall be inspected after painter applies the seal coat.
- C. Do not paint over dirt, rust, scale, grease, moisture, loose cement plaster, scuffed surfaces, or conditions otherwise detrimental to formation of durable paint film.
- D. 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. Plaster and Gypsum Wallboard: 12 percent.
 - 2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent

3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
4. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 SURFACE PREPARATION

- A. General:
1. Perform preparation and cleaning procedures in strict accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
 2. Remove items not to be finished painted, or provide surface-applied protection prior to surface preparation and painting operations. Reinstall removed items by workmen skilled in trades involved.
 3. Clean all exterior walls and surfaces of loose and scaly paint, dirt, dust, chalk, and other foreign matter by water-blasting using care not to damage substrate followed by hand scraping, sanding or wire brushing after surfaces are dry. Mildew must be treated with household bleach solution and rinsed thoroughly.
 4. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease with clean cloths and cleaning solvents prior to mechanical cleaning. Program cleaning and painting so that dust and other contaminants from cleaning process will not fall on wet, newly painted surfaces.
 5. Patch, caulk, set protruding nails and repair all surfaces and cracks where necessary with suitable patching materials and smooth off to match adjacent surfaces
 6. Sand Glossy surfaces to dull surface and remove residue.
 7. Remove mildew from affected surfaces with a solution of Tri-Sodium Phosphate and bleach. Rinse with clean water and allow to dry completely
 8. Existing surfaces to be recoated shall be thoroughly cleaned and de-glossed by sanding or other means prior to priming and painting. Patched and bare areas shall be spot primed with the same primer as specified for new work
 9. Rusty metal: Scrape, sand or wire wheel, feathering edges to sound coating. Dust surfaces. Topcoat.
 10. Remove soil and body oils and soot completely from surfaces, including handrails, door edges and posts. Treat with Liquid Sandpaper or Dull-N-Bond
 11. Remove hardware, accessories, plates, fixtures and similar items not to be finished. Reinstall at completion
- B. All Ferrous Surfaces required to be painted under this section shall be cleaned and treated as follows:
1. Clean all rust, loose mill scale, grease, dirt, wax, old sealants, caulking and other deleterious matter by any effective means and treat with phosphoric acid or chemical etching compound as specified under "Materials". Rinse with water and dry thoroughly.
 2. Abraded or corroded spots on shop-coated surfaces shall be wire brushed and touched up with material similar to shop coat. Special care shall be exercised to remove wax, lubricants, and other coatings from roll-form coated metals prior to painting. Primer coat shall be applied not less than 30 minutes, nor more than 3 hours after preparation of surface.
- C. Galvanized and Zinc-Copper-Alloy Surfaces to be painted shall be solvent cleaned in accordance with Steel Structures Council Painting specification SSPC-SP 1-63 and treated with acid wash as specified under Article 2.01 herein.
- D. Aluminum and Aluminum Alloy Surfaces to be painted shall be solvent cleaned to remove oil and grease and then treated with chromate metal primer as herein specified. Cleaning

solvents and procedures shall conform to the Steel Structures Council Painting Specification SSPC-I-63.

- E. Equipment Installed with Factory Finish: Sand or etch finished surface to increase adherence of finish coats specified to be applied over factory finish.
- F. Concrete Surfaces: Concrete surfaces shall be dry, clean and free from efflorescence, encrustations and other foreign matter. Any glazed surface shall be slightly roughened or etched. Curing compounds, bond breakers, release agents and other coatings shall be removed with a light sandblast or high pressure power wash.
- G. Primed Metal: Sand and scrape shop primed metal to remove loose primer and rust. Touch-up bare, abraded and damaged areas with metal primer. Feather edges to make touch-up patches inconspicuous.
- H. Wood Surfaces:
 - 1. Remove dust, grit, and foreign matter from wood surfaces. Sand surfaces and dust clean. Spot prime knots, pitch streaks, and sappy sections with a stain blocking primer where surfaces are to be painted. Fill nail holes, cracks and other defects after priming and spot prime repairs after patching material has fully cured.
 - 2. Wood surfaces with peeling areas are to have edges of broken paint film sanded to a feather edge.
 - 3. Back prime wood trim. Paint tops, bottoms, edges and cut-outs of doors.
- I. Plaster Surfaces:
 - 1. Plaster surfaces shall be dry and free from efflorescence, encrustations, and foreign matter. Fill cracks, holes and imperfections, smoothing repairs to match adjacent texture. Allow repairs to fully cure before priming.
 - 2. Prime plaster surfaces with specified primer. Caulk all cracks.
- J. Other Surfaces: Prepare surface as recommended by paint manufacturer.

3.03 MATERIALS PREPARATION

- A. Mix and prepare painting materials in strict accordance with manufacturer's directions in room or area assigned for that purpose.
 - 1. Floor slabs used for storage and mixing of any paint materials shall be protected by temporary coverings that will not permit penetration or saturation of paint materials. Painting contractor shall be solely responsible for this protection.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce mixture of uniform density, and as required during application of materials. Do not stir film which, may form on surface into material. Remove film and if necessary, strain materials before using.
- D. All necessary precautions shall be taken to prevent fire. Rags and waste soiled with paint shall be removed from the premises at the end of each day's work, or stored in metal containers with metal covers.

3.04 PAINT APPLICATION AND WORKMANSHIP

- A. General: All work specified herein shall be of highest quality possible for the specified finish and for the surface to which the finish is applied and that which will provide maximum durability. Finished surfaces shall be free from runs, drips, ridges, waves, laps, brush marks and variation in color, texture, and finish.
1. Apply paint by brush, roller, spray, or other acceptable practice in accordance with manufacturer's directions. Use brushes best suited for type of material being applied. Use rollers of carpet, velvet back, or high pile sheep's wool as recommended by paint manufacturer for material and texture required.
 2. Number of coats and paint film thickness required is same regardless of application method. Do not apply succeeding coats until previous coat has completely dried.
 3. Apply additional coats when undercoats, or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive film thickness equivalent to that of flat surfaces.
 4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only.
 5. Paint back sides of access panels, removable, or hinged covers to match exposed surfaces.
 6. Omit first coat (primer) on metal surfaces which have been shop primed and touch-up paint, unless otherwise indicated. Painting of mechanical and electrical work is limited to those items exposed in occupied spaces, except as otherwise specified or indicated.
 7. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved
 8. Sand wood surfaces lightly between coats to achieve required finish.
 9. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust particles just prior to applying next coat.
 10. Stipple all edges and corners to conceal brush marks.
 11. Paint entire trim element with like color. Painting of faces only is unacceptable. Trim surfaces must be wrapped with the trim color and not "faced off" or "Hollywooded".
 12. Doors: Paint entire door unless otherwise noted, including door top and bottom edge surfaces.
 13. Tinting: Tint each primer a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint primer to match the color of the finish coat, but provide sufficient differences in shade of primer to distinguish each separate coat.
- B. Minimum Coating Thickness: Apply each material at not less than manufacturer's recommended spreading rate. All finish coats shall have a minimum of 2 full coats.
- C. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of undercoat.
- D. Prime Coats: Re-coat primed and sealed walls and ceiling where there is evidence of suction spots or unsealed areas in first coat, to assure finish coat with no burn-through or other defects due to insufficient sealing.

- E. Pigmented (opaque) finishes: Completely cover to provide opaque, smooth surface of uniform finish, color, appearance, and coverage.
- F. Stipple Enamel Finish: Roll and re-distribute paint to even and fine texture. Leave no evidence of rolling such as laps, irregularities in texture, skid marks, or other surface imperfections.
- G. Brush Application: Brush-out and work brush coats onto surfaces in even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable. Neatly draw all glass and color break lines.
 - 1. Brush apply primer or first coats, unless otherwise permitted to use mechanical applicators.
 - 2. All doors and frames to receive a painted finish must be brushed for the top coats. Rolling or any application that produces a stippled texture will not be accepted.
- H. Mechanical Applicators: Use mechanical methods for paint application when permitted by governing ordinances and trade union regulations. If permitted, limit to only those surfaces impracticable for brush applications.
 - 1. Limit roller application (generally) to interior wall and ceiling finishes for second and third coats. Apply each roller coat to provide equivalent hiding as brush-applied coats.
 - 2. Confine spray application (generally) to metal work, and similar surfaces where hand brush work would be inferior, and other surfaces specifically recommended by paint manufacturer. Respirators shall be worn by all persons engaged in or assisting in spray painting operations.
 - a. Wherever spray applications is used, apply each coat to provide equivalent hiding of brush-applied coat. Do not double back with spray equipment for purpose of building up film thickness of two coats in one pass.
- I. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.05 INTERIOR PAINTING SCHEDULING

- A. Not Used

3.06 EXTERIOR PAINTING SCHEDULE

- A. All new materials installed on the exterior are to be painted unless not required to be painted: Refer to paragraph 1.01.B.2 & 3, above.
- B. Paints referenced are Dunn Edwards to establish a grade and type standard. Owner will make final determination on acceptance of equal substitutions.
- C. Exterior surfaces:
 - 1. Wood – paneling or trim
 - 1 coat UGPR00 primer
 - 2 coats semi-gloss SSSL50 100% acrylic
 - 2. Cement Plaster & Glass-Fiber-Reinforced Gypsum
 - 1 coat ESSL00 primer
 - 2 coats semi-gloss ASHL50 Waterborne Urethane Alkyd

END OF SECTION