



COUNTY OF MENDOCINO
Executive Office - Facilities & Fleet Division

LITTLE RIVER AIRPORT TERMINAL REMODEL PROJECT

BID DOCUMENTS

Prepared by:
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BID 79-17
Issue Date: October, 2017

PROJECT LOCATION:

LITTLE RIVER AIRPORT
43001 Little River Airport Road
Little River, CA 95456

INFORMATION:
COUNTY OF MENDOCINO
Facilities & Fleet Division
851 Low Gap Road
Ukiah, California 95482

00002 - PROJECT DIRECTORY

OWNER: County of Mendocino
501 Low Gap Road
Ukiah, CA 95482

AGENT: Mendocino County
Executive Office,
Facilities and Fleet Division
851 Low Gap Road
Ukiah, CA 95482
(707) 234-6050
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ARCHITECT: Schlosser/Newberger Architects
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STRUCTURAL
ENGINEER: Duncan Engineering, Inc.
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SECTION 00020 - NOTICE INVITING BIDS

Notice is hereby given that sealed bids will be received at the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California 95482 until the hour of 2:00 p.m., **Thursday, November 2, 2017** as determined by the clock on the wall of the Executive Office - Facilities and Fleet Division, County of Mendocino, on at which time they will be publicly opened and read aloud in the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California for the following project:

BID 79-17 - Little River Airport Terminal Remodel Project

License Required for this Project is: "B" License.

Plans and documents may be seen at the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, CA 95482. Electronic Plans and Documents may be seen or downloaded from the Mendocino County Web Page for Open RFP, Quotes & Bids:

<https://www.mendocinocounty.org/government/executive-office/open-rfp-quotes-bids>.

Additionally plans and documents have been distributed to builder's exchange plan rooms throughout Northern California. In Mendocino County, printed plans may be obtained from the following businesses:

Fort Bragg:

Beckman's S&S Printing and Copy Center
329 E. Redwood Ave.
Fort Bragg, CA 95437
707-964-9645

Ukiah:

Blueprints and Copies
846 S. State St.
Ukiah, CA 95482
707-462-1197

Bids shall be made on a form provided by the County and accompanied by a Certified Check, Cashier's Check, or Bidder's Bond for ten percent (10%) of the amount bid, made payable to the County of Mendocino. The above-mentioned check or Bid Bond 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 Instructions to Bidders of the contract documents.

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

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

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

Pursuant to California Public Contract Code Section 22300, the Contractor may substitute securities for any 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.

A mandatory pre-bid conference and site inspection will be held on Wednesday, October 18, 2017 at 10:00 a.m. at the Project site, 43001 Little River Airport Road, Little River, California.

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:

<http://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 Section 6.0 – Business Licenses and Regulations, 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.

SECTION 00100 - INSTRUCTIONS TO BIDDERS**PART 1 – GENERAL****1.1 BIDS RECEIVED**

- A. Sealed bids for **BID 79-17 The Little River Airport Terminal Remodel** Project will be received at the Facilities and Fleet Division Office, County of Mendocino, 851 Low Gap Road, Ukiah, California, until 2:00 p.m. as determined by the clock on the wall of the Facilities and Fleet Division Office, on **Thursday, November 2, 2017** and then publicly opened and read aloud in the Facilities and Fleet Division Office, County of Mendocino.
- 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

- A. The license required for this Project is “B” License.
- B. Pursuant to Mendocino County Code Section 6.0 – Business Licenses and Regulations, at time of contract award, the contractor shall supply a copy of their current County of Mendocino business license.

1.3 SECURING OF PLANS AND DOCUMENTS - FEES

Electronic Plans and Documents may be seen at, or downloaded from the Mendocino County Web Page for Bidding Opportunities – Construction:

<https://www.mendocinocounty.org/government/executive-office/open-rfp-quotes-bids>

1.4 BIDS

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

- A. Bids must be submitted on the bid form provided by County, 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. Only written proposals will be permitted.
- C. A Bid Bond or Certified 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. Such guaranty shall be forfeited should the Bidder to whom the contract is awarded fail to enter into the contract.

1.5 PRE-BID CONFERENCE AND SITE ACCESS

- A. **A mandatory pre-bid conference will be held on Wednesday, October 18, 2017 at 10:00 a.m. at the site, 43001 Little River Airport Road, Little River, California.**
- B. Following the meeting, a site review will be conducted to acquaint Bidders with the Project.
- C. The County reserves the right to schedule additional Mandatory Conference dates. Failure to attend at least one pre-bid conference will disqualify a non-attending bidder from the bid.

1.6 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.

1.7 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.

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]*

☒ (a) The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

X (b) 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.

(c) 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.

(d) 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 (a) shall be used to determine the lowest bid.

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.

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.

1.8 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 thirty (120) calendar days from date of the written "Notice to Proceed".

1.9 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.**

1.10 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.

1.11 WITHDRAWAL OF BID

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

1.12 BONDS

The successful Bidder is required to furnish a Labor and Material Bond and a Performance Bond each in the amount equal to one hundred percent (100%) of the contract price. In addition, the successful Bidder is required to furnish a Bid Bond or Certified Cashier's Check made payable to the County of Mendocino for an amount equal to at least ten percent (10%) of the bid amount. Said Bonds shall be obtained from a surety company satisfactory to County.

1.13 SUBSTITUTIONS

Any substitution shall be made in accordance with instructions contained in Section 01630 - Product Options and Substitutions attached hereto. Questions concerning substitutions will not be entertained during the bidding period.

1.14 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.

1.15 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.

1.16 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.

1.17 ENVIRONMENTAL IMPACT REPORT

Bidder agrees to perform its work in conformance with any environmental impact reports that may be applicable to the project.

1.18 AGREEMENT

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

1.19 PRE-CONSTRUCTION CONFERENCE

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

1.20 QUALIFICATIONS OF BIDDERS

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 the bid documents herein as Section 00120, "Qualification Statement".

SECTION 00120 - 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):

<u>License No.</u>	<u>Classifications</u>	<u>Expiration</u>	<u>Qualifying Individual</u>
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_____	_____	_____	_____
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_____	_____	_____	_____
-------	-------	-------	-------

_____	_____	_____	_____
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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: _____

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(s) (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 00306 - 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 00307 - 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)
) ss.
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 00308 - PUBLIC CONTRACT CODE QUESTIONNAIRE

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

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

☐ Yes ☐ No

If 'yes', explain the circumstances in the space below.

SECTION 00310 - BID FORM

LITTLE RIVER AIRPORT TERMINAL REMODEL 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.

If awarded the Contract, the undersigned agrees to complete the Work One hundred twenty (120) calendar days from the date of Notice to Proceed.

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 (\$_____)

ALTERNATES:

“LOW BID WILL BE DETERMINED BY THE TOTAL AMOUNT OF THE BASE BID AND BOTH OF THE ALTERNATES.”

Deductive Alternate #1: Delete new exterior siding at east, south and west elevations

Add _____ Dollars (\$_____)

Additive Alternate #2: Add card reader access control system

Add _____ Dollars (\$_____)

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 _____

Corporate Seal

for
THE LITTLE RIVER AIRPORT TERMINAL REMODEL 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, 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.

[illegible]

SUBCONTRACTOR LISTING

SECTION 00500 - AGREEMENT FOR LUMP SUM BID

THIS AGREEMENT, made on the _____ day of _____ in the year _____, 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 Mendocino County Little River Airport Terminal Remodel 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 One hundred twenty (120) 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. Agreement
4. Contractor's Guarantee
5. Close-Out Items including all Warranties
6. Coordination
7. Construction Temporary Facilities
8. Drawings & Specifications
9. General and Technical Conditions of the Specifications
10. All modifications thereof incorporated before execution of the Contract

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

_____ Dollars (\$_____).

This sum constitutes the bid for the following project components (referenced hereunder to specifications section). This sum includes the following alternate bids:

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, the parties hereto have executed this Agreement as of the day and year first above written.

DEPARTMENT FISCAL REVIEW:

DEPARTMENT HEAD DATE
Budgeted: ☐ Yes ☐ No
Budget Unit: _____
Line Item: _____
Grant: ☐ Yes ☐ No
Grant No.: _____

CONTRACTOR/COMPANY NAME

By: _____

NAME AND ADDRESS OF CONTRACTOR:

COUNTY OF MENDOCINO

By: _____
JOHN MCCOWEN, Chair
BOARD OF SUPERVISORS

By signing above, signatory warrants and represents that he/she executed this Agreement in his/her authorized capacity and that by his/her signature on this Agreement, he/she or the entity upon behalf of which he/she acted, executed this Agreement

ATTEST:

CARMEL J. ANGELO, 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.

CARMEL J. ANGELO, Clerk of said Board

By: _____
Deputy

COUNTY COUNSEL REVIEW:

APPROVED AS TO FORM:

KATHARINE L. ELLIOTT,
County Counsel

By: _____
Deputy

INSURANCE REVIEW:

RISK MANAGER

By: _____
ALAN D. FLORA, Risk Manager

FISCAL REVIEW:

By: _____
Deputy CEO/Fiscal

EXECUTIVE OFFICE REVIEW:

APPROVAL RECOMMENDED

By: _____
CARMEL J. ANGELO, Chief Executive Officer

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: _____

SECTION 00501 - WORKERS' COMPENSATION CERTIFICATION

Pursuant to California Labor Code Section 1861, 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.

Dated_____

Contractor Signature_____

SECTION 00510 - CONTRACTOR GUARANTEE

FOR

LITTLE RIVER AIRPORT TERMINAL REMODEL

Contractor hereby guarantees that the labor and material furnished for this project is in accordance with the drawings and specifications. 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 00520 - ROOFING GUARANTEE

FOR

LITTLE RIVER AIRPORT TERMINAL REMODEL

Contractor hereby guarantees that the labor and material furnished for this project is in accordance with the drawings and specifications. Contractor agrees to maintain the roof and flashings in a water-tight condition and to repair or replace any or all of the work, together with any other work which may be displaced in so doing, that may prove to be defective in its workmanship or material within a period of five (2) years from date of acceptance of the above-named structure 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 with 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 therefor upon demand.

ROOFING CONTRACTOR:

SIGNED _____

DATED _____

DATE OF BUILDING ACCEPTANCE _____

SECTION 00650 - CONSTRUCTION SITE STORM WATER POLICY

PART I – GENERAL

1.1 SUMMARY

- A. Mendocino County Ordinance No. 4313 STORM WATER RUNOFF POLLUTION PREVENTION PROCEDURE (Mendocino County Code Chapter 16.30 et.seq.) requires any person performing construction and grading work anywhere in the county shall implement appropriate Best Management Practices (BMP) to prevent the discharge of construction waste, debris, sediment or contaminants from construction materials, tools and equipment from entering the storm drainage system or natural waterways (off-site).
- B. By commencing work in this contract, the contractor agrees to comply with Mendocino County Code Section 16.30.140 Inspection and monitoring. The County may enter the worksite whenever necessary to perform inspections related to the Storm Water Runoff Pollution Prevention Procedures for the project including inspection of BMP's and records relating to storm water plan compliance.

1.2 SUBMITTALS

- A. Prior to beginning construction activities, submit construction site Best Management Practice (BMP) Plans and Specifications prepared by a Qualified Storm Water Developer (QSD) or the Contractor referencing Mendocino County Building and Planning Services Documents noted below:
 - 1. Construction Best Management Practices for over-the-counter building permits for projects that do not disturb any soil.
 - 2. Small Construction Site Storm Water Erosion and Sediment Control Plan Template for projects that will disturb any soil.
- B. Submittal shall include a project specific BMP plan for all areas of soil disturbance and possible contamination source generated by the project. Attach copies of the relevant current BMP fact sheets from the California Storm Water BMP Handbook Portal planned to address each potential source of contamination generated by the project.
- C. A County approved BMP plan is required prior to beginning work on the project.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Provide Materials in Compliance with Approve BMP fact sheets in appropriate quantities to mitigate possible runoff, sedimentation and/or contamination in accordance with the approved BMP plan.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Prepare BMP schedule to identify dates when BMP's will be installed.
- B. Ensure that BMP Materials are on site in the event of an untimely rain event and prior to October 15th.
- C. Identify and mark Storm Drain Inlets and drainage features leading to storm drains or natural waterways.
- D. Identify and provide instruction and training to on site personnel responsible for installation and management of BMP's.

3.2 INSTALLATION

- A. Complete BMP installation Prior to October 1st or prior to ground disturbance activities between October 1st and April 15th, and call the project manager for an inspection of the installed BMP plan. Do not start grading activities without BMP's in place.
- B. Comply with installation guidelines included with BMP fact sheets and suitable to site conditions.
- C. Remove Contamination and Sediment BMP's after sources of sedimentation, or contamination have been removed from the site or final soil stabilization is complete. Do not remove Erosion Control BMP's until permanent Erosion Control features are established unless directed by the County.

3.3 INSPECTION

- A. It is the responsibility of the Contractor to provide regular inspection of BMP's throughout the rainy season. Maintain and replace all BMP's in accordance with the approved BMP plan.
- B. Prior to significant rain events, inspect installed BMP's to ensure all potential sources of contamination, sedimentation or erosion are protected by approved BMP's.
- C. During significant rain events verify that installed BMP's are adequate to the flows on the project site.
- D. Record inspection findings as required by approved BMP plan.
- E. Maintain Inspection records and a copy of the approved BMP plan on the project site for inspection by County and NCWRCB.
- F. Failure of the Contractor to comply with the requirements of these specifications and the provisions of the approved Storm Water pollution Prevention Plan or BMP plan may result in work stoppage, a written citation, monetary fine or any combination thereof.

SECTION 00700 - 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 where 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 Director of General Services 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, Courthouse, 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

On the twenty-fifth (25th) day of each month, the Contractor shall submit to the County an application for payment, using the forms supplied in Section 00505, showing an itemized statement for work that has been performed. The County within thirty (30) days of receipt of application, shall issue to the Contractor a certificate for ninety percent (90%) 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, 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 AND SUBSTITUTIONS

- 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 review 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 in triplicate, 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

Specifically omitted from the services of the County are all design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences, or procedures required for the Contractor to perform his work.

Omitted services include, but are not limited to, shoring, scaffolding, underpinning, temporary retainment of excavations and any erection methods and bracing.

52. RECORD DRAWINGS

- A. The Contractor shall furnish one complete set of clean "Record" drawings to the County prior to project acceptance, showing clearly any changes made during construction. The Contractor shall use one of the blue line contract sets issued for construction for "Record" drawings. The set used must be complete, clean, and in good condition.
- B. In addition to any changes, all mechanical, electrical and plumbing items concealed in the building and underground, actually installed and routed. Depth below surface to top of underground item shall be indicated.
- C. All underground items shall be dimensioned from permanent reference points in a manner that they can be easily found in the field at a later time.
- D. Each sheet of the "Record" drawings shall be identified with the following label to be signed by the Contractor:

These are record drawings which have been

[illegible]

Date

[illegible]

- ### 53. OCCUPANCY OR USE BEFORE ACCEPTANCE OF COMPLETION

54. COMPLIANCE WITH HANDICAPPED ACCESS LAWS

- 00700-18

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 1 and 2 in all subcontracts to perform work under the Contract.

SECTION 00811 - 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.
 - 1. All that is indicated in or reasonably interpreted from the Contract Documents.
 - 2. All that could be seen on site and that could be observed.
 - 3. Conditions that are materially similar or characteristically the same.
 - 4. Conditions where the location of the building component is in the proximity where 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

HIDDEN CONDITIONS REPORT (HCR)

Mendocino County Little River Airport Tank Removal

HCR No. _____

Submitted By: _____ Date: _____

Ctr to PM

PM to Arch

Arch to PM

PM to Ctr

Date Sent: _____

Date Received: _____

Type of Conditions Reported:

<input type="checkbox"/> Site Work	<input type="checkbox"/> Structural	<input type="checkbox"/> Architectural	<input type="checkbox"/> HVAC
<input type="checkbox"/> Plumbing	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> Electrical	<input type="checkbox"/> Other

Location and Reference to Drawing: _____

Conditions Reported: _____

Investigated By: _____ Firm: _____ Date: _____

☐ Check this box if the hidden condition reported is not hidden. Reply with location(s) where the information can be obtained.

Reply of Findings: _____

By: _____ Firm: _____ Date: _____

The reply is a finding from the investigation. No change in the Contract Sum or Time is authorized. See Specifications Document 00811 for the timeliness of investigation.

00851 - DRAWINGS INDEX

ARCHITECTURAL

- A1.1 TITLE SHEET & SITE PLAN
- A1.2 SITE PLAN
- A1.3 ACCESSIBILITY SITE DETAILS
- A2.1 FLOOR PLAN AND GENERAL NOTES
- A3.1 EXTERIOR ELEVATIONS AND SCHEDULES
- A4.1 CROSS SECTION AND NOTES
- A5.1 BITUMEN ROOF PLAN & DETAILS
- A5.1 MEMBRANE ROOF PLAN & DETAILS
- A5.1 METAL ROOF PLAN & DETAILS
- A7.1 INTERIOR ELEVATIONS AND NOTES
- A10.1 DETAILS
- A10.2 SPECIFICATIONS

ELECTRICAL / MECHANICAL

- E2.1 ELECTRICAL PLAN

DEFERRED APPROVALS:

1. DEFERED APPROVAL IS REQUESTED FOR THE FIRE ALARM SYSTEM

SECTION 01010 - SUMMARY OF WORK**PART 1 - GENERAL****1.1 SUMMARY**

- A. The requirements of the drawings and general provisions of the specifications and other sections of Divisions 0 and 1 apply to this section.
- B. Contractor is hereby specifically directed to notify and apprise all subcontractors and other parties engaged in the Work as to the Contents of Division 0 – Bidding and Contract Requirements and Division 1 - General Requirements.

1.2 THIS SECTION sets forth general project scope, and general provisions regarding work to be performed by the Contractor.**1.3 THE WORK OF THIS CONTRACT consists of: Remodeling the existing Airport Terminal Building at the Little River Airport at 43001 Little River Airport Road, Little River, CA.**

- A. Provide all construction documentation, labor, material, superintendence and administration as depicted in the drawings, as described in the project manual, all that may be reasonably inferred to be required as necessary for a complete and proper turnkey fabrication and installation. Present to the Owner, at the close of construction, signed copies of all required permits indicating successful completion of all permit requirements.
- B. If certain features or systems are not fully shown or called for in the Contract Documents, their construction shall be of the same character and quality as for similar conditions that are shown, called for, or reasonably inferred.
- C. 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.

1.4 APPLICABLE CODES AND REGULATIONS:

- A. General Requirements: All materials and workmanship shall comply with the most recent edition of the California Code of Regulations (CCR), Title 24 (California Building Standards Code) with current State and local amendments. CCR, Title 24 consists of the following twelve parts:

- Part 1 - California Building Standards Administrative Code
- Part 2 - California Building Code
- Part 3 - California Electrical Code
- Part 4 - California Mechanical Code
- Part 5 - California Plumbing Code
- Part 6 - California Energy Code
- Part 7 - (No longer published in Title 24. See Title 8, CCR)
- Part 8 - California Historical Building Code
- Part 9 - California Fire Code

Part 10 - California Existing Building Code
 Part 11 - California Green Building Standards Code (CALGreen)
 Part 12 - California Reference Standards Code

- B. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
- C. Grading and Paving Requirements: All materials and workmanship shall comply with the California Department of Transportation Standard Specifications dated May 2006 and the State of California Department of Transportation Standard Plans dated May 2006 for earthwork, grading and paving.
- D. Air Quality Requirements: All materials and workmanship shall comply with all current requirements of the Mendocino County Air Quality Control District. Provide all application materials, fees and documentation necessary to obtain all permits required by the Mendocino County Air Quality Control District. Obtain approval for all operations and present to the Owner, at the close of construction, signed copies of all required permits indicating successful completion of all permit requirements.
- E. Accessibility Requirements: All materials and workmanship shall comply with all the requirements for accessibility as set forth in the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Federal Americans with Disabilities Act in effect at the time of construction.
- F. California Department of Forestry and Fire Protection (Cal Fire) Requirements: All materials and workmanship shall comply with Cal Fire "SRA Fire Safe Regulations", Title 14 - Natural Resources, California Code of Regulations, Division 1.5 - Dept. of Forestry, Chapter 7 - Fire Protection, Subchapter 2 - SRA Fire Safe Regulations, Articles 1-5.
- G. Fire Alarm System: The proposed facility shall have an integrated fire alarm system in conformance with all requirements for fire alarm systems as set forth in the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the National Fire Protection Association Standard 72.
- H. Recycling Requirements: This project is subject to the Mendocino County "Construction and Demolition Recycling and Reuse" Ordinance and the Department of Toxic Substances Control "Requirements for Generators of Treated Wood Waste." and the requirements of California Green Building Standards Code (CALGreen).
- I. Other Requirements: All materials and workmanship shall comply with the most recent edition of any other codes or regulations adopted by governmental agencies having jurisdiction over any portion of the work.

1.5 PROJECT DATA:

- A. Construction Type: The proposed facility shall conform to all requirements for Type V-B construction as set forth in the most current edition of the California Building Code in effect at the time of construction with current State and local amendments.

- B. Occupancy Classification: The proposed facility shall conform to all requirements for Group B Occupancy as set forth in the most current edition of the California Building Code in effect at the time of construction with current State and local amendments.

1.6 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. Division 1 specifications.
 - 6. Drawings and Division 2 through 16 specifications.
 - 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 the Drawings and Division 2 through 16 specifications will be resolved in favor of the document of the latest date (i.e., the most recent document), and if the dates are not the same or are not determinable, then in favor of the specifications.
- C. 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.

1.7 EXAMINATION

- A. General: As stipulated in Document 00100, Contractor is responsible for inspection of the existing site conditions prior to bidding and shall include in the Contract any modifications of the Contract Documents proposed as a result of Contractor's inspection. Such modifications shall be included in the bid.
- 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.

1.8 LISTING OF RELATED WORK

- A. 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.

1.10 REQUEST FOR INFORMATION (RFI)

- A. Requirement: It is Contractor's responsibility to review Contract Documents a minimum of thirty (30) 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.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

SECTION 01050 - FIELD ENGINEERING**PART 1 - GENERAL****1.1 DESCRIPTION**

A. Work included: Provide such field engineering services as are required for proper completion of the Work including but not necessarily limited to:

1. Establishing and maintaining lines and levels;
2. Structural design of shores, forms, and similar items provided by the Contractor as part of his means and methods of construction.

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. Additional requirements for field engineering also may be described in other Sections of these Specifications.
3. As described in subparagraph 2.2.3 of the General Conditions, the Owner will furnish survey describing the physical characteristics, legal limitations, utility locations, and legal description of the site.

1.2 QUALITY ASSURANCE:

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section

1.3 SUBMITTALS:

A. Comply with pertinent provisions of Section 01340 - Submittals and Substitutions.

B. Upon request of the Architect, submit:

1. Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
2. Documentation verifying accuracy of field engineering work.
3. Certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or non-conformance with requirements of the Contract Documents.

1.4 PROCEDURES

- A. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
1. Locate and protect control points before starting work on the site.
 2. Preserve permanent reference points during progress of the Work.
 3. Do not change or relocate reference points or items of the Work without specific approval from the Architect.
 4. Promptly advise the Architect when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.
 - a. Upon direction of the Architect, require the field engineer to replace reference stakes or markers.
 - b. Locate such replacements according to the original survey control.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

SECTION 01100 - ALTERNATES**PART 1 - GENERAL****1.1 SUMMARY**

- A. The Alternate proposals as described herein shall state the net sum to be deducted from or added to the lump sum bid in the event that the Alternate proposal is accepted. Dollar amounts for Alternate proposals shall be inserted in the "Bid Form" Section 00310.
- B. **The low bidder will be determined by the total of the base bid and both alternate bids.** The Board reserves the right to accept or reject any or all Alternate proposals.
- C. Include in each Alternate proposal all changes in cost resulting in the work of all trades affected thereby. Work shall be performed in accordance with drawings and specifications affected unless otherwise specified.
- D. Each bidder shall determine to its own satisfaction the full extent to which the Work is affected by each Alternate proposal and shall make full and proper allowance therefore in preparation of its proposal.

1.2 ALTERNATES

- A. **Deductive Alternate No. 1: Delete new exterior siding at south, east and west elevations.**
 - 1. **Base Bid:** Cut the minimum sized openings in existing T-111 siding to provide access into wall cavities for relocation of all exposed wiring, conduit and piping. Relocate all exposed wiring and piping into wall cavities and attic space. After relocating wiring and piping, patch openings in exterior siding of wall with new CDX plywood to match the thickness of (E) T-111 siding, install new vapor barrier and new fiber cement siding and trim over existing siding.
 - 2. **Deductive Alternate Bid:** Use exposed attic space and north wall of terminal building and restrooms to relocate wiring and piping. Relocate all exposed wiring and piping into walls and attic spaces. After relocating wiring and piping, patch any damage to existing exterior siding, prepare, for painting. Install new vapor barrier and new fiber cement siding and trim over existing siding at north walls of terminal and restrooms only.

Priming and Painting for either option is part of base bid. See plan sheets A2.1 and A3.1 for additional information.

B. Additive Alternate No. 2: Card Reader Access Control System

1. **Base Bid:** Provide conduit with pull string from a new junction box at ground level on north wall, in the wall and attic space to a new single gang exterior facing junction box on the latch side of the entry door. Provide a weathertight blank cover.
2. **Alternate Bid:** Trench from existing gate control card reader to the Junction box on the north wall of the building, provide wiring in ¾" schedule 40 PVC conduit and conduit provided in base bid to card reader location at south door. Backfill trench and patch surfaces to match adjacent. Provide new card reader and electric strike at south door, make all connections and perform all programming required for a complete and operational system.

See plan sheet A1.2 and specification section 08750 – Card Reader Access System for additional information.

1.3 ROOFING OPTIONS

Project plans and specifications include two options for the roofing system. The Contractor has the option of installing either system according to the details and specifications for that system. All roofing work shall be included in the base bid, and no alternate pricing is required.

- A. Option 1 – Torch applied modified bitumen roofing
- B. Option 2 – Heat welded PVC single ply membrane roofing

SECTION 01340 -SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

- 1.1 THIS SECTION includes all required submittals where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Coordination of submittals:
 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
 2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
 3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
 - B. "Or equal"
 1. Where the phrase "or equal" or "or equal as approved by the Architect" occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by the Architect.
 2. The decision of the Architect shall be final.
 - C. County Standard Products shall be provided as specified without substitution.
- 1.3 SUBMITTALS
 - A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section.

PART 2 - PRODUCTS

- 2.1 SHOP DRAWINGS
 - A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.
 - B. Types of prints required:
 1. Submit Shop Drawings in the form of two (2) blueline, blackline, or copy prints of each sheet and an electronic copy in PDF format.
- 2.2 MANUFACTURERS' LITERATURE
 - A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
 - B. Submit the number of copies which are required to be returned, plus two copy which will be retained by the Architect. Electronic copies of submittals will be accepted.

2.3 SAMPLES

- A. When required by the Architect, provide Sample or Samples identical to the precise article proposed to be provided.
- B. Number of Samples required:
 - 1. Unless otherwise specified, submit Samples in the quantity which is required to be returned, plus one which will be retained by the Architect.
 - 2. By prearrangement in specified cases, a single Sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Architect.

2.4 COLORS AND PATTERNS

- A. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect for selection.

PART 3 - EXECUTION

3.1 SUBMITTAL STANDARDS

- A. The contractor shall maintain a submittal log of all submittals numbered sequentially including the status condition of reviewed submittals. The log shall be made available to the County or Architect upon request.
- B. Electronic submittals shall be submitted to the Architect and County concurrently, hard copies shall be submitted to the Architect with a confirming e-mail to the County.

ARCHITECT'S REVIEW

- A. Review by the Architect is for conformance with the Design Concept only. The Contractor shall be responsible for verifying that all submitted products and systems meet all code requirements and specified Quality Standards.
- B. Review by the Architect does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
- C. Revisions:
 - 1. Make revisions required by the Architect.
 - 2. Resubmit revised submittals to the Architect for review.
- D. Distribution: Contractor shall distribute copies of approved submittals to all affected subcontractors and forward one approved copy to the Owner and one to the Architect.

SECTION 01410 - TESTING LABORATORY SERVICES

PART 1 - GENERAL

- 1.1 THIS SECTION includes all testing and inspecting, complete, as described in this Section and elsewhere in the Contract Documents, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Provide access and cooperation to the soil engineer, construction inspectors and a testing laboratory hired by the Owner to perform inspections services during the construction.
 - B. Coordinate the work of all required inspectors to provide access to the inspectors at the appropriate times to perform required inspections.
 - C. Upon completion of each test and/or inspection, promptly obtain and distribute copies of test or inspection reports to the Architect, to governmental agencies requiring submission of such reports, and to such other persons as directed by the Architect.

PART 2 - PRODUCTS

- 2.1 PAYMENT FOR TESTING
 - A. All initial testing and inspecting required under this Section of these Specifications shall be paid for by the Owner under separate contract with the inspection agencies. Include within the Contract Sum an amount sufficient to cover all coordination of inspection services and cooperation with inspection procedures. Contractor shall include within the Contract Sum an amount sufficient to cover all job costs associated with testing and inspecting required by governmental agencies having jurisdiction.
 - B. When initial tests indicate non-compliance with the Contract Documents, costs of initial tests associated with that non-compliance will be deducted by the Owner from the Contract Sum, and subsequent retesting occasioned by the non-compliance shall be performed by the same testing laboratory and the costs thereof shall be paid by the Contractor.
- 2.2 SPECIFIC TESTS AND INSPECTIONS
 - A. Provide all tests and inspections required by governmental agencies having jurisdiction, required by provisions of the Contract Documents, and such other tests and inspections as are directed by the Architect.
 - B. Tests may include, but are not necessarily limited to, those described in detail in Part 3 of this Section.

PART 3 - EXECUTION

- 3.1 TAKING SPECIMENS: Except as may be specifically otherwise approved by the Architect, have the testing laboratory secure and handle all samples and specimens for testing.
- 3.2 COOPERATION WITH TESTING LABORATORY: Provide access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

- 3.3 SOIL INSPECTING AND TESTING: Make required inspections and tests including, but not necessarily limited to:
- A. Visually inspect on-site and imported fill and backfill, making such tests and retests as are necessary to determine compliance with the Contract requirements and suitability for the proposed purpose;
 - B. Make field density tests on samples from in-place material as required;
 - C. As pertinent, inspect and test the scarifying and recompacting of cleaned subgrade inspect the progress of excavating, filling, and grading; make 90% density tests at fills and backfills; and verify compliance with provisions of the Contract Documents and governmental agencies having jurisdiction.
 - D. Make and distribute necessary reports and certificates.
- 3.4 CONCRETE INSPECTING AND TESTING
- A. Portland cement:
 - 1. Secure from the cement manufacturer Certificates of Compliance delivered directly to the concrete producer for further delivery directly to the testing laboratory.
 - 2. Require the Certificates of Compliance to positively identify the cement as to production lot, bin or silo number, dating and routing of shipment, and compliance with the specified standards.
 - 3. If so required by the Architect, promptly provide such other specific physical and chemical data as requested.
 - B. Aggregate:
 - 1. Provide one test unless character of material changes, material is substituted, or additional test is requested by the Architect.
 - 2. Sample from conveyor belts or batching gates at the ready-mix plant:
 - a. Sieve analysis to determine compliance with specified standards and grading;
 - b. Specific gravity test for compliance with specified standards.
 - C. Laboratory design mix:
 - 1. After approval of aggregate, and whenever character or source of materials is changed, provide mix design in accordance with ACI 613.
 - 2. Provide designs for all mixes prepared by a licensed civil engineer.
 - D. Molded concrete cylinders:
 - 1. Provide three test cylinders for each 150 cu yds, or fraction thereof, of each class of concrete of each day's placement.
 - 2. Test one cylinder at seven days, one at 28 days, and one when so directed.
 - 3. Report the mix, slump, gage, location of concrete in the structure, and test results.
 - 4. Take specimens and make tests in accordance with the applicable ASTM standard specifications.
 - E. Core tests:
 - 1. Provide only when specifically so directed by the Engineer because of low

cylinder test results.

2. Cut from locations directed by the Architect, securing in accordance with ASTM C42, and prepare and test in accordance with ASTM C39.

F. Placement inspections:

1. On concrete over 2000 psi, provide continuous or other inspection as required by governmental agencies having jurisdiction.
2. Throughout progress of concrete placement, make slump tests to verify conformance with specified slump.
3. Using all required personnel and equipment, throughout progress of concrete placement verify that finished concrete surfaces will have the level or slope that is required by the Contract Documents.

3.5 CONCRETE REINFORCEMENT INSPECTING AND TESTING

A. Prior to use, test all reinforcement steel bars for compliance with the specified standards.

1. Material identified by mill test reports, and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish mill test reports to the testing laboratory for certification.
2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.

B. Unidentified steel:

1. Have the testing laboratory select samples consisting of two pieces, each 18" long, of each size.
2. Have the testing laboratory make one tensile test and one bend test for each 2-1/2 tons or fraction thereof of each size of unidentified steel.

C. Provide continuous inspection for all welding of reinforcement steel.

3.6 ROOFING AND WATERPROOFING INSPECTING AND TESTING

A. Prior to start of membrane waterproofing and membrane roofing installation, conduct a job site meeting attended by representatives of the installing subcontractors, the Contractor's field superintendent, the testing laboratory inspector, and the Architect, to agree upon procedures to be followed.

B. Prior to start of installation, verify that materials at the job site comply with the specified standards, that the subcontractor is qualified to the extent specified, and that the installing personnel are fully informed as to procedures to be followed.

C. During installation, verify that materials are installed in strict accordance with the manufacturers' recommendations as approved by the Architect.

D. When so directed by the Architect, make test cuts to verify conformance with the specified requirements

3.7 WAIVER OF INSPECTION AND/OR TESTS: Specified inspections and/or tests may be waived only by the specific approval of the Architect or the County.

SECTION 01500 - TEMPORARY FACILITIES & CONTROLS**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 Airport Operations Office for the Duration of the Work;
2. Temporary utilities such as heat, ventilation, water, electricity, lighting, telephone;
3. Field office for the Contractor's personnel;
4. Sanitary facilities;
5. Enclosures such as tarpaulins, barricades, and canopies;
6. Temporary fencing of the construction site;
7. Project sign.

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. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safe regulations, such equipment normally furnished by the individual trades in execution of their own portions of the Work are not part of this Section.
3. Permanent installation and hookup of the various utility lines are described in other Sections.

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 TEMPORARY AIRPORT OPERATIONS FIELD OFFICE

- A. Office Trailer or Module shall include:
 - 1. Minimum Size shall be 8' wide by 20' long or at least 160 SF;
 - 2. One lockable door, provide two keys;
 - 3. Two operable windows;
 - 4. Electric Heating and Cooling;
 - 5. Lighting and suitable power and data jacks for a connected office;
 - 6. Secure and stable stairs or ramp for access to the door.
- B. Operations Communications and Utilities shall be uninterrupted by construction operations:
 - 1. Provide Temporary Power as required by the office unit;
 - 2. Provide live telephone/data service via one Category 6 cable;
 - 3. Relocate radio base station and antenna, return to final location in terminal building prior to completion;
 - 4. Relocate or protect in place Automated Weather Observing System (AWOS); return to final location in terminal building prior to completion.

2.2 TEMPORARY CONSTRUCTION UTILITIES

- A. Electricity and Lighting:
 - 1. Contractor shall make necessary arrangements to provide for and maintain temporary wiring for the Contractor's work. Upon completion of the Work, remove all such temporary facility.
 - 2. Provide area distribution boxes so located that the individual trades may furnish and use 100 ft. maximum length extension cords to obtain power and lighting at points where needed for work, inspection, and safety.
 - 3. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 1 watt/sq.ft.
- B. Heating and Ventilation:
 - 1. Contractor shall provide, maintain and pay for heat and heating fuel necessary for proper conduct of operations needed in the Work.
 - 2. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors or gases.
- C. Telephone and electronic transmission:
 - 1. Make necessary arrangements, provide, maintain and pay costs for installation and operation of telephone and electronic transmission facilities for the duration of the project.
 - 2. Make the electronic transmission facilities available to the Architect for use in connection with the Work.

D. Water:

1. Contractor shall make necessary arrangements, and extend branch piping with outlets located so water is available by hoses with threaded connections.

2.3 CONTRACTOR'S FIELD OFFICE AND SANITARY FACILITIES

A. Field Offices:

1. Provide, maintain and pay for contractor's field office facilities required to complete the work, including a weather tight and secure location for project meetings, project documents and files, contractor's tools, equipment, materials and supplies without disruption to Airport operations and activities.

B. Sanitary facilities:

1. Provide and pay for temporary sanitary facilities in quantity required for use by all personnel.
2. Maintain in a sanitary condition at all times.

2.4 ENCLOSURES

A. General: Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the Work in compliance with pertinent safety and other regulations.

B. Exterior: Provide temporary, insulated, weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specifications Sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

C. Interior: Provide non-combustible, one-hour fire rated temporary partitions and ceilings as required to separate work areas from Owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment.

2.5 FENCING

A. Provide six-foot high chain link fencing equipped with vehicular and pedestrian gates to prevent unauthorized entry to construction areas, and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Contractor to provide master keyed locks. Provide Owner with two copies of master key. Provide Architect with two copies of master key.

- B. Provide protection for plant material designated to remain. Replace damaged plant material in size and kind.
- C. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

2.6 MISCELLANEOUS FACILITIES

- A. Construction Aids: Hoists, ramps and ladders, enclosures, pumps, barriers, fences, barricades necessary to adequately move materials and equipment, de-water excavations, and to protect workmen and public.
- B. All temporary construction to comply with requirements of state and local authorities.

2.6 SECURITY:

- A. Provide security and facilities to protect the Work, and existing facilities, and Owner's operations from unauthorized entry, vandalism, fire and theft until Work is fully accepted by Owner.
- B. Coordinate with Owner's security program.

2.7 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work areas to minimize damage.
- C. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

2.8 ACCESS ROADS

- A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.

- B. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads shall not be used for construction traffic.

PART 3 – EXECUTION

3.1 TEMPORARY AIRPORT OPERATIONS FIELD OFFICE

- A. Provide the temporary airport operations field office and pay for all rental fees, delivery, set up and removal charges. The office shall be set level and properly blocked in place to prevent movement during use.
- B. Provide all wiring, cables connections and testing required for the proper operation of power, communications, and information systems required for the temporary airport operations field office.
- C. Maintain in working order the power, communications, and information systems installed above until final acceptance of the project.
- D. Remove and properly dispose of all temporary wiring, cables and supports from permanent facilities, patch and repair all holes resulting from temporary services.

3.2 MAINTENANCE AND REMOVAL OF CONTRACTOR'S FACILITIES AND TEMPORARY AIRPORT FIELD OFFICE

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.
- B. Remove such temporary facilities and controls as rapidly as progress of the Work will permit or as directed by the Architect.
- C. Remove temporary above grade or buried utilities, equipment, facilities, materials prior to Substantial Completion inspection.
- D. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- E. Clean and repair damage caused by installation or use of temporary work.
- F. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

SECTION 01640 - PRODUCT HANDLING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Products scheduled for use in the Work by means including, but not necessarily limited to those 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. Additional procedures also may be prescribed in other Sections of these Specifications.

1.2 QUALITY ASSURANCE

Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 MANUFACTURERS' RECOMMENDATIONS

Except as otherwise approved by the Architect, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

1.4 PACKING

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
1. Maintain packaged materials with seals unbroken and labels intact until time of use.
 2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.
- B. The Architect may reject as non-complying such material and products that do not bear identification satisfactory to the Architect as to manufacturer, grade, quality, and other pertinent information.

1.5 PROTECTION

- A. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by Owner.

1.6 REPAIRS AND REPLACEMENTS

- A. In event of damage, promptly make replacements and repair to the approval of the Architect and at no additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Architect to justify an extension of the Contract Time of Completion.

1.7 OWNER SUPPLIED ITEMS

- A. Certain items described in the Supplementary Conditions shall be furnished by the Owner. The Owner shall arrange to have some items delivered to the jobsite.
- B. When deliveries of Owner supplied items are made, the Contractor shall examine the items carefully and accept only those items which are undamaged.
- C. Check invoices of Owner supplied items carefully. Acceptance by the Contractor of the delivery of Owner supplied items, as indicated by a signed invoice, shall be proof that all items listed on the invoice are included within the shipment and that all items are in undamaged condition.
- D. After items supplied by the Owner are accepted by the Contractor, all handling and storage of such items shall be solely the Contractor's responsibility.

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Closeout procedures, Final cleaning, Adjusting, Project record documents, Operation and maintenance data, Warranties, Spare parts and maintenance materials, Summary of closeout submittals to Architect.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect's inspection.
- B. Provide submittals to Architect that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Comply with procedures stated in the Conditions of the Contract Agreement and General Conditions for issuance of Certificate of Substantial Completion.
- E. Should Architect consider that the Work' is incomplete or defective, he will promptly notify the Contract in writing, listing the incomplete or defective items. The Contractor shall then take immediate steps to remedy the stated deficiencies, and send a second written certification to Architect that the Work is complete.
- F. Should Architect perform reinspections due to failure of the Work to comply with the claims of status of completion made by the Contractor:
 - 1. Owner will compensate Architect for such additional services.
 - 2. Owner will deduct the amount of such compensation from the final payment to the Contractor.
- G. When the Architect finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.
- H. Architect will issue a final change order reflecting approved adjustments to Contract Sum not previously made by Change Order.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.

- B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.4 ADJUSTING

Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction. Label each document "Project Record" in neat large printed letters.
- C. Record information concurrent with construction progress.
 - 1. Do not conceal any Work until required "as-built" information is recorded.
 - 2. Recording and marking shall be legible using ink.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish main floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract Drawings.

F. Submit documents to Architect with claim for final Application for Payment.

1.6 OPERATION AND MAINTENANCE DATA

- A. Compile data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract.
- B. Submit three sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring capacity expansion binders with durable plastic covers.
- C. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- D. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- E. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, type on 24 pound white paper.
- F. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
- G. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 1. Significant design criteria.
 2. List of equipment.
 3. Parts list for each component.
 4. Operating instructions.
 5. Maintenance instructions for equipment and systems.
 6. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
- H. Part 3: Project documents and certificates, including the following:
 1. Shop drawings and product data.
 2. Air and water balance reports.
 3. Certificates.
 4. Photocopies of warranties.

I. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with Architect comments. Revise content of documents as required prior to final submittal.

J. Submit final volumes revised, within ten days after final inspection.

1.7 WARRANTIES

A. Provide duplicate copies.

B. Execute Contractor's submittals and assemble documents from Subcontractors, suppliers, and manufacturers.

C. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.

D. Submit prior to final Application for Payment.

E. For items of Work delayed-beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.8 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.

B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

1.9 SUMMARY OF CLOSEOUT SUBMITTALS TO ARCHITECT

A. Evidence of compliance with requirements of governing authorities:

1. Certificate of Occupancy.
2. Certificates of Inspection.

B. Project Record Documents; To requirements of this Section.

C. Operation and Maintenance Data: To requirements of this Section.

D. Spare Parts and Maintenance Materials: Evidence of compliance with this Section.

E. Warranties: To requirements of this Section.

- F. Keys and Final Keying Schedule: To requirements of Section 08710 - Finish Hardware.
- G. Evidence of Payment and Release of Liens in compliance with the Conditions of the Contract Agreement and the General Conditions.
- H. Consent of Surety to Final Payment.
- I. Certificates of Insurance for Products and Complete Operations: In accordance with the Supplementary Conditions, Conditions of the Contract Agreement, and General Conditions.
- J. Final Application for Payment: To requirements of the Conditions of the Contract Agreement, and General Conditions.

1.10 FINAL PAYMENT

- A. When, in the opinion of the Architect, the project is complete (NOTE: evaluation after inspection) the Architect will advise the Owner and the Owner will file the Notice of Completion with the County Recorder.
- B. Should there be items not available due to delays in delivery, or should work remain incomplete the Architect and the Owner may require the Contractor to post a certified check in an agreed upon amount sufficient to cover such incomplete or uncorrected items. Such certified check shall be held until completion of all incomplete Work.
- C. The 10% retention shall be held by the Owner until Forty (40) days after Final Acceptance and filing of the notice of Completion with the County Recorder. If no liens or encumbrances are filed and if all work is complete, the retention shall be paid the Contractor. Assessed liquidated damages shall be deducted from the retention.
- D. Final payment to the Contractor will not be made until the Owner and Architect receive a signed-off final copy of the Building Permit.

PART 2 PRODUCTS

(Not used)

PART 3 EXECUTION

(Not used)

SECTION 01710 - 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.
 - 2. Completely remove resultant debris.
- D. Structures:
 - 1. Exterior:
 - 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:
 - 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.
 - 3. Glass: Clean inside and outside.
 - 4. Polished surfaces: To surfaces requiring routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished.

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.

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SECTION 02010 - SITE CONDITIONS

PART 1-GENERAL

1.01 RELATED INFORMATION

Related information and requirements are included in the General and Supplementary Conditions with regard to existing underground utilities.

Existing Utilities and Underground Structures Section 02016

1.02 INFORMATION ON SITE CONDITIONS

- A. All information obtained by the engineer regarding site conditions, subsurface information, groundwater elevations, existing constructions of site facilities, and existing underground utilities and similar data are shown on the plans or provided herein.
- B. Information derived from inspection of topographic maps, or from plans showing locations of utilities and structures will not in any way relieve Contractor from any risk, or from properly examining the site and making such additional investigations as he may elect, or from properly fulfilling all the terms of the contract documents.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall satisfy himself as to the nature and location of the work and the general and local conditions.
- B. The contractor further shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials to be encountered by performing site inspections, reviewing soils report (if applicable) and reviewing any other pertinent information. Any new exploratory work must be approved by the owner. Failure of the contractor to acquaint himself with the site and all available information will not relieve him of the responsibility for properly estimating the difficulty or cost of completing the work.
- C. The Contractor shall anticipate underground obstructions such as utility lines, concrete, water table and variation hereof due to rainfall, soil conditions and debris. No extra payment will be allowed for the removal, replacement, repair or possible increased cost caused by underground obstructions. Any such lines or obstructions indicated on the map show only the approximate location and must be verified in the field by the Contractor. The Owner and Engineer will endeavor to familiarize the contractor with all known underground obstructions, but this will not relieve the Contractor from full responsibility in anticipating and locating all underground obstructions.

D. ADDITIONAL INFORMATION

Prior to bidding, bidders may make their own subsurface investigations subject to time schedules and arrangements approved in advance by the Owner. Before any subsurface test holes are excavated, obtain permits from governing agency to perform such work.

SECTION 02016 - EXISTING UTILITIES AND UNDERGROUND STRUCTURES**PART 1-GENERAL****1.01 DESCRIPTION**

Related requirements specified elsewhere: See Division 1 regarding general conditions specific to the contract.

See also Plans for location of utilities and underground structures as are they believed to exist.

1.02 CALIFORNIA ADMINISTRATIVE CODE

- A. Section 1540(a)1 of Construction Safety Orders (Title 8) California Administrative Code, Section 1540 states:

(1) "Prior to opening and excavation, effort shall be made to determine whether underground installations; i.e., sewer, water, fuel, electric lines, etc. will be encountered and, if so, where such underground installations are located. When the excavations approaches the approximate locations of such an installation, the exact location shall be determined by careful probing or hand digging; and, when it is uncovered, adequate protection shall be provided for the existing installation. All known owners of underground facilities in the area concerned shall be advised of proposed work at least 48 hours prior to the start of actual excavation."

- B. The engineer has determined their locations as well as existing mapping permits. However, in line with California's Administrative Code, Section 1540, Contractor shall make the effort to determine the exact location of underground installations.

PART 2-PRODUCTS-OWNERS**2.01 UTILITIES AFFECTED**

- A. Electrical: Pacific Gas and Electric Company, Fort Bragg, California, 95437. In this area, P.G. & E. has control of overhead and underground power only. It should be noted that where overhead service to a structure known requiring it, does not exist, then underground power service shall be assumed to exist. For underground utility location call (800) 642-2444.
- B. Gas/Propane: Contact Propane provider.
- C. Water Service: Owner
- D. Drainage & Roads: The county of Mendocino, D.O.T. 707-463-4363
- E. Telephone: Pacific Telephone has offices in Ukiah, (707) 468-2645 for assistance with

location of underground telephone facilities.

2.02 PRIVATE UTILITIES AFFECTED

No attempt has been made to locate private utilities on private property such as sprinkler irrigation systems, electrical conduits, sanitary sewage septic tanks and leach field disposal systems, gas pipes, etc. It is the responsibility of the Contractor to contact the various individual property owners prior to construction in such areas.

PART 3- EXECUTION

3.01 LOCATION OF UTILITIES

- A. Pacific Gas and Electric Company has been cooperative in the past about remarking their facilities and making available personnel to assist in location of gas and electrical facilities. Underground electrical lines may exist in the project area: locate prior to digging.

3.02 CONTRACTOR RESPONSIBILITY

The contractor shall anticipate water, gas, electrical, telephone, and cable TV services to each residence, as well as water, telephone, electrical, cable TV, and gas mains in the streets to serve various residences. It may be expected that there will be variation in location from that as shown on the Plans to the actual location. Actual location can best be determined in the field after remarking by the various utilities affected.

No extra payment will be allowed for the removal, replacement, repair, or possible increased cost caused by inadvertent or planned interception and breaking of underground obstructions which may exist.

It should be understood that the various utilities are indicated on the Plans to show only the approximate location and must be verified in the field by the Contractor. The various utilities will cooperate with the Contractor to endeavor to familiarize him with all unknown underground utilities obstructions, but this will not relieve the Contractor from full responsibility in anticipating and locating their actual location and depth.

SECTION 02070 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Carefully demolish and remove from the site those items scheduled to be so demolished and removed.

1.2 APPLICABLE CODES AND REGULATIONS:

- A. General Requirements: See Specification Section 01010 - Summary of Work.
- B. Recycling Requirements: This project is subject to the Mendocino County "Construction and Demolition Recycling and Reuse" Ordinance and the Department of Toxic Substances Control "Requirements for Generators of Treated Wood Waste."
- C. Air Quality Requirements: All materials and workmanship shall comply with all current requirements of the Mendocino County Air Quality Control District. Provide all application materials, fees and documentation necessary to obtain all permits required by the Mendocino County Air Quality Control District. Obtain approval for all operations and present to the Owner, at the close of construction, signed copies of all required permits indicating successful completion of all permit requirements.

1.3 QUALITY ASSURANCE:

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

PART 2 - PRODUCTS

(No products are required in this Section.)

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 DEMOLITION

- A. By careful study of the Contract Documents, determine the location and extent of selective demolition to be performed.
- B. In company with the Architect, visit the site and verify the extent and location of selective demolition required.
 - 1. Carefully identify limits of selective demolition.
 - 2. Mark interface surfaces as required to enable workmen to identify items to be removed and items to be left in place intact.
- C. Prepare and follow an organized plan for demolition and removal of items.
 - 1. Shut off, cap, and otherwise protect existing public utility lines in accordance with the requirements of the public agency or utility having jurisdiction.
 - 2. Completely remove items scheduled to be so demolished and removed, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere.
 - 3. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

D. Disposal of Materials

Contractor shall stockpile all wood material generated by demolition activities which has been denailed and cleaned of other substances such as roofing, caulking, building paper, etc. Burnable materials may be burned at a location approved by the Owner provided that the Contractor obtains all required permits for burning. Remaining material unsuitable for burning shall be disposed of off site by the contractor.

E. Salvage of Existing Materials

Remove existing materials identified in the Contract Documents which are suitable for reuse. Stack all salvaged materials in a safe place with wood boards separating units and wood protection all around. Salvaged materials shall be protected from damage by the contractor until the completion of the demolition contract.

- F. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

3.3 REPLACEMENTS

- A. In the event of demolition of items not so scheduled to be demolished, promptly replace such items to the approval of the Architect and at no additional cost to the Owner.

SECTION 02080 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Construction waste shall be managed in conformance with the applicable codes and regulations listed below.

1.2 APPLICABLE CODES AND REGULATIONS:

- A. General Requirements: See Specification Section 01010 - Summary of Work.
- B. Recycling Requirements: This project is subject to the Mendocino County "Construction and Demolition Recycling and Reuse" Ordinance and the Department of Toxic Substances Control "Requirements for Generators of Treated Wood Waste."
- C. This project is subject to the requirements of the most recent edition of the California Green Building Standards Code (CALGreen) with current State and Local amendments.

1.3 QUALITY ASSURANCE:

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

PART 2 - PRODUCTS

(No products are required in this Section.)

PART 3 - EXECUTION

3.1 SITE AND SURFACE CONDITIONS

- A. Examine areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 CONSTRUCTION WASTE MANAGEMENT

- A. By careful study of the Contract Documents, determine the location and extent of construction waste management to be performed.

- B. In company with the Architect, visit the site and verify the extent and location of construction waste management required.
 - 1. Carefully identify limits of selective demolition.
 - 2. Mark interface surfaces as required to enable workmen to identify items to be managed according to the requirements of this section.
- C. Prepare and follow an organized plan for construction waste management.
 - 1. Establish a location on site for construction waste management tasks. Sort waste into required categories and stockpile materials until ready for disposal.
 - 2. Develop an organized plan for construction waste management and fully inform all employees of the requirements and conditions.
 - 3. Use means necessary to prevent dust, airborne debris and waterborne debris from becoming a nuisance to the public, to neighbors, workers and to other work being performed on or near the site.
- D. Disposal of Materials
 - 1. Completely remove items scheduled to be removed from site, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere.
 - 2. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

3.3 SUBMITTALS:

- A. Submit construction waste management plan, disposal confirmation and any other required documentation to governmental agencies having jurisdiction, Architect and Owner.

SECTION 02100 - SITE PREPARATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, material and equipment to clear site of all trees, shrubs, and otherwise objectionable materials from within the construction area.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION

3.1 LAYOUT

- A. Control stake and roadway layout shall be provided by the owner.
- B. Contractor shall be responsible for replacement of damaged stakes.
- C. The area to be cleared and grubbed shall be laid out and approved by the Engineer prior to removal.
- D. Work in this section shall be performed prior to any other site development.

3.2 REMOVAL AND DISPOSAL OF MATERIAL

- A. All unsuitable material, vegetable growth and debris cleared or stripped from the site shall be completely removed from the site.
- B. Remove organic topsoil at excavated areas. Stockpile on-site for re-use as finish earth fill.

SECTION 02200 - EARTHWORK**PART 1-GENERAL****1.01 DESCRIPTION**

- A. Earthwork shall consist of performing all operations necessary for excavation, embankment, subgrade preparation, fill and grading where applicable.
- B. All work shall conform to the lines, grades, and cross-sections or elevations shown on the Plans. Prior to placing embankment or fill, the area shall be cleared and grubbed in conformance with Section 02100. The exposed area shall then be disked, plowed, benched and/or compacted as directed by the Engineer or specified herein, to insure proper bonding and compaction.
- C. Existing power and telephone lines, trees, fences pipelines or other conduits, embankments, and structures in the vicinity of the work shall be supported and protected from injury by the Contractor during the construction and until the completion of the work. The Contractor shall be liable for all damages to such structures, as herein provided, and shall save and keep the Owner and Engineer harmless from any liability or expense for injuries, damages, or repairs to same.
- D. A thorough attempt has been made to show type, size, location, and number of all utilities. However, no guarantee is made as to the location and number of such utilities. The Contractor shall repair, in a manner satisfactory to the Engineer, all utilities damaged by the progress of his work. The Contractor shall notify all Owners of utilities of commencement of work and sufficiently in advance to have the utilities mark the location of their facilities. The Contractor shall be prepared at all times with labor, equipment, and materials to make repairs on damaged mains or utilities.
- E. Related items described elsewhere:
 - 1. Site Conditions Section 02010
 - 2. Existing Utilities and Undergrround Structures Section 02016
 - 3. Site Preparation Section 02100

1.02 QUALITY ASSURANCE

- A. Qualifications of workmen: Provide sufficient skilled workmen and supervisors who shall be present at all times during the execution of this portion of the work and who shall be thoroughly familiar with the type of construction involved and the materials and techniques specified.

B. Codes and Standards:

1. Whenever a test method is referenced in this Section it shall be made in accordance with most current test methods in use by the California Department of Transportation (Caltrans) as listed in the State Standard Specifications, latest edition, or ASTM method as listed below:

Test	Method
Relative Compaction	ASTM D1557
Sand Equivalent	CA #217
Sieve Analysis (Grading)	CA #202
Percentage of Crushed Particles	CA #205
Durability Index	CA #229
Cleanness of Course Aggregate	CA #227

2. Where reference is made to the State Standard Specifications, reference shall mean the State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, latest edition, excluding measurement and payment sections.

1.03 TESTING

- A. Compaction testing will be performed by an owner approved agency. The Owner will pay for all initial compaction testing. Any area not meeting the required compaction will be reworked until the required density has been attained. The contractor shall pay for all re-testing of failed areas.
- B. A minimum of 24 hours notice shall be given to the Engineer by the Contractor prior to commencing or re-commencing any grading operation. Additional time may be required for testing and review of proposed materials.

PART 2-PRODUCTS

2.01 UNCLASSIFIED EXCAVATION

Excavation is unclassified. The Contractor shall complete all excavation regardless of the type, nature, or condition of the materials encountered. The Contractor shall make his own estimate of the kind and the extent of the various excavation and embankment materials necessary to accomplish the work.

2.02 EMBANKMENT FILL MATERIAL

Shall be native material, free of organic or other deleterious matter and shall not contain lumps or stones larger than 4-inch in maximum dimension.

2.03 CRUSHED GRAVEL FOR BACKFILL UNDER FOOTING AND CONCRETE SLABS

One-inch minus, crushed gravel or crushed rock, free from dirt, clay balls and organic material, uniformly graded from coarse to fine, containing sufficient fines for proper compaction but no more than 12 percent by weight shall pass the No. 200 sieve. Material conforming to California Standard Specification for Class 2 aggregate base, 3/4 inch maximum may be used.

2.04 WATER FOR COMPACTION

Water shall be cleaned and free of oil, acids, salts, and other deleterious substances. Contractor shall furnish as required. City water may not be available for Contractor's use.

2.05 MATERIAL APPROVAL

Submit samples of materials to Engineer for approval prior to placing orders. Samples shall be representative and be clearly marked to show source of the material and the intended use on the project.

2.06 COMPACTION REQUIREMENTS

Relative compaction tests will be made every 12" in accordance with ASTM D1557 on all fills, subgrades and baserock. The Contractor shall make all necessary excavations for compaction tests. Excavations for compaction tests shall be backfilled with material similar to that excavated and compacted to the specified density by the Contractor. Trench compaction shall conform to CalTrans Standard Specifications. Base or gravel under structures shall be compacted to 95 percent relative compaction. All engineered fills shall be compacted to a minimum of 90% relative compaction. The top 6" of subgrade and all baserock shall be compacted to 95% R.C.

2.07 COMPACTION EQUIPMENT

All compaction shall be made by mechanical means unless the Contractor can demonstrate other means that will accomplish required compaction to the satisfaction of the Engineer. Compaction equipment shall be suitable type and adequate to obtain the densities specified and approved. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations. Equipment shall be maintained such condition that it will deliver the manufacturer's rated compactive effort.

PART 3-EXECUTION

3.01 CLEARING AND GRUBBING

Clearing and grubbing shall conform to Caltrans standard specifications.

3.02 DISPOSAL OF WASTE MATERIAL

No burning of any waste materials will be allowed.

3.03 UNCLASSIFIED EXCAVATION

Perform all unclassified excavation of every description, regardless of the type, nature, or condition of material encountered, as specified, shown, or required to accomplish the construction. The Contractor shall control excavations and stockpiling in a manner to prevent water from entering the excavations. Materials for fill, backfill, or for protection of excavations from surface drainage shall be neatly placed and kept shaped so as to cause no interference with public travel.

3.04 STRUCTURAL EXCAVATION (UNCLASSIFIED)

Excavation is unclassified. Excavate for structures to the lines and grades shown or as required to accomplish the construction. Perform all excavation regardless of the type, nature, or condition of the material encountered. The method of excavation used is optional; however, no heavy equipment shall be operated within 5 feet of existing structures or newly completed construction, except as approved. Excavation that cannot be accomplished without endangering the present or new structures shall be performed with hand tools.

3.05 LIMITS OF EXCAVATION

Excavate to the depths and widths, as shown. Allow for forms, working space, gravel base, and finish topsoil where required. Do not carry excavation for footings and slabs deeper than the elevation shown or required. Excavation carried below the grade lines shown or established by the Engineer shall be replaced with approved compacted fill material at the contractors expense. Over excavations under footings shall be filled with concrete of equal strength to that of the footing. Cuts below grade shall be corrected by similarly cutting adjoining areas and creating a smooth transition. The Contractor shall bear all costs for correcting over excavated areas.

3.06 PROTECTION OF EXCAVATION

Excavations and trenches shall be properly sheathed, shored braced and/or sloped to support adjacent earth banks, structures, construction materials, and equipment and to provide safe working conditions. No trench, pit, or other excavation shall remain open longer than is necessary to expeditiously carry out the work.

Shoring shall conform to Section 02400

3.07 REMOVAL OF WATER

- A. The Contractor shall provide, install, and maintain at all times during construction, sufficient means and facilities with which to divert, remove, and properly dispose of all water from any source. The Contractor shall maintain all work and excavations in a clean, dry, and safe condition.

- B. Additional de-watering and/or other measure will be necessary as required to prevent flotation or disturbance of underground structures due to uplift groundwater pressures. Protection of structures against uplift will be required until the structures have been filled and until any structure has obtained stability due to self-weight, backfill over footing toes, etc.
- C. Water from surface runoff shall be diverted as necessary to prevent accumulation of water on the site. Construct the necessary ditches and structures and take such precautions necessary to protect both the work and adjacent property.
- D. De-watering shall be accomplished by methods that will ensure a water free excavation, that will preserve the final lines and grades of the bottom of the excavations, and that will maintain the groundwater level at least two feet below excavation grades.
- E. Water disposal shall meet Federal, State, and local requirements and as specified.

3.08 SITE GRADING

- A. Perform all earthwork to the lines and grades as shown and/or established by the Engineer. Shape, trim, and finish slopes to conform with the lines, grades, and cross sections as shown or approved. Make slopes free of all exposed roots and stones exceeding 2 inches in diameter which are loose and liable to fall. Round tops of banks to circular curves, in general, not less than a 6-foot radius. Rounded surfaces shall be neatly and smoothly trimmed.
- B. Work that has been suspended by weather, scheduling or for any other reason, shall be protected against the effects of such weather or other conditions. Grading which has been considered acceptable, but which has been subsequently damaged shall be reworked to meet the requirements of the Specifications.
- C. All grades shown on the Plans are expressed as finished elevations.

3.09 SETTLEMENT

Any settlement in backfill, fill, or in structures built over backfill or fill, which may occur within the guarantee period will be considered to be caused by improper compaction methods and shall be corrected at the Contractor's expense. Any structures damaged by settlement shall be restored to their original condition by the Contractor at no cost to the Owner.

3.10 STRUCTURAL BACKFILL

- A. Preparations for placing backfill under and around structures:
 - 1. Backfill around concrete structures only after the concrete has attained 75 percent of the specified compressive strength. Remove all form materials and trash from

the excavation before placing any backfill. Obtain the Engineer's approval of concrete work and attained strength prior to backfilling.

2. Do not operate heavy earth moving or heavy compaction equipment within 5 feet of wall of concrete structures or of underground pipes for the purpose of depositing or compacting backfill material unless approved by the Engineer. Compact backfill within 1 foot of the wall with hand held tampers. Between distance of 1 foot and 5 feet from the wall, lightweight mechanized compaction equipment may be used. Equipment or methods used to place and compact backfill shall not damage the structure. Any damage to structures resulting from the operation of equipment at any time shall be repaired by the Contractor at no additional expense to the Owner. Care shall be exercised in the execution of compactive effort to avoid over compacting backfill adjacent to walls.
3. Crushed gravel backfill under footings, slabs and structures: Grade and prepare ground surface to receive crushed gravel. Obtain Engineer's approval prior to placing gravel backfill. Provide a minimum 4-inch depth under concrete footings, slabs, sidewalks, and structures, and as shown on the Plans. Deposit material in lifts not exceeding 6-inches. Compact each lift to at least 95% R.C.

SECTION 02221 - TRENCHING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

- 1.1 Work included: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Comply with State of California Department of Transportation Standard Specifications most recent edition for earthwork, grading and paving.
 - C. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.
- 1.3 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.

PART 2 - PRODUCTS

- 2.1 SOIL MATERIALS
 - A. Fill and backfill materials:
 - 1. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 6" in greatest dimension, and with not more than 15 percent of the rocks or lumps larger than 2-3/8" in their greatest dimension.
 - 2. Fill material is subject to the approval of the soil engineer, and is that material removed from excavations or imported from off-site borrow areas, predominantly granular, non-expansive soil free from roots and other deleterious matter
 - 3. Do not permit rocks having a dimension greater than 1" in the upper 12" of fill or embankment.
 - 4. Cohesionless material used for backfill: Provide sand free from, organic material and other foreign matter, and as -approved by the soil engineer.
- 2.2 OTHER MATERIALS
 - A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 PROCEDURES:

A. Utilities:

1. Unless shown to be removed, protect active utility lines shown on the drawings or otherwise made known to the Contractor prior to trenching. If damaged, repair or replace at no additional cost to the owner.
2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.
4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Architect and secure his instructions.
5. Do not proceed with permanent relocation of utilities until written instructions are received from the Architect.

B. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.
2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

C. Dewatering:

1. Remove all water, including rain water, encountered during trench and sub-structure work to an approved location by pumps, drains, and other approved methods.
2. Keep trenches and site construction area free from water.

- D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

- E. Maintain access to adjacent areas at all times

3.3 TRENCHING

- A. Comply with pertinent provisions of Section 02220, and the provisions of this Section.

- B. Provide sheeting and shoring necessary for protection of the Work and for the safety of personnel.
1. Prior to backfilling, remove all sheeting.
 2. Do not permit sheeting to remain in the trenches except when, in the opinion of the Architect, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the Architect may permit portions of sheeting to be cut off and remain in the trench.
- C. Open cut:
1. Excavate for utilities by open cut.
 2. If conditions at the site prevent such open cut, and if approved by the Architect, trenching may be used.
 3. Short sections of a trench may be tunneled if, in the opinion of the Architect, the conductor can be installed safely and backfill can be compacted properly into such tunnel.
 4. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects as directed by the soil engineer.
 5. When the void is below the subgrade for the utility bedding, use suitable earth materials and compact to the relative density directed by the soil engineer, but in no case to a relative density less than 90%.
 6. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated as approved by the soil engineer, but in no case to a relative density less than 80%.
 7. Remove boulders and other interfering objects, and backfill voids left by such removals, at no additional cost to the Owner.
 8. Excavating for appurtenances:
 - a. Excavate for manholes and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.
 - b. Overdepth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as directed by the soil engineer, and at no additional cost to the Owner.
- D. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.
- E. Depressions:
1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.
 2. Except where rock is encountered, do not excavate below the depth indicated or specified.

3. Where rock is encountered, excavate rock to a minimum overdepth of 4" below the trench depth indicated or specified.

F. Where utility runs traverse public property or are subject to governmental or utility company jurisdiction, provide depth, bedding, cover, and other requirements as set forth by legally constituted authority having jurisdiction, but in no case less than the depth shown in the Contract Documents.

G. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.

H. Cover:

1. Provide trench depth required by governmental agencies having jurisdiction over the Work and in accordance with Cal Trans Standard Specifications. Provide the following minimum cover over the top of the installed item below the finish grade or subgrade where standards are less restrictive:
 - a. Areas subject to vehicular traffic:

(1) Sanitary sewers:	48"
(2) Storm drains:	36"
 - b. Areas not subject to vehicular traffic:

(1) Sanitary sewers:	30";
(2) Storm drains:	18".
 - c. All areas:

(1) Water lines:	30";
(2) Natural gas lines:	24";
(3) Electrical cables:	42";
(4) Electrical ducts:	36".
 - d. Concrete encased:

(1) Pipe sleeves for water and gas lines:	24"
(2) Sanitary sewers and storm drains:	12";
(3) Electrical ducts:	24".
2. Where utilities are under a concrete structure slab or pavement, the minimum depth need only be sufficient to completely encase the conduit or pipe sleeve, and electrical long-radius rigid metal conduit riser, provided it will not interfere with the structural integrity of the slab or pavement.
3. Where the minimum cover is not provided, encase the pipes in concrete as indicated. Provide concrete with a minimum 28 day compressive strength of 2500 psi

3.4 BEDDING : Provide bedding required by governmental agencies having jurisdiction over the Work and in accordance with Cal Trans Standard Specifications, or as indicated in the Drawings.

3.5 BACKFILLING

A. General:

1. Do not completely backfill trenches until required pressure and leakage tests have been performed, and until the utilities systems as installed conform to the requirements specified in the pertinent Sections of these Specifications.
2. Except as otherwise specified or directed for special conditions, backfill trenches to the ground surface with selected material approved by the soil engineer.
3. Reopen trenches which have been improperly backfilled, to a depth as required for proper compaction. Refill and compact as specified, or otherwise correct to the approval of the soil engineer.
4. Do not allow or cause any of the Work performed or installed to be covered up or enclosed by work of this Section prior to required inspections, tests, and approvals.
5. Should any of the Work be so enclosed or covered up before it has been approved, uncover all such Work and, after approvals have been made, refill and compact as specified, all at no additional cost to the Owner.

B. Lower portion of trench:

1. Deposit approved backfill and bedding material in layers of 6" maximum thickness, and compact with suitable tampers to the density of the adjacent soil, or grade as specified herein, until there is a cover of not less than 24" over sewers and 12" over other utility lines.
2. Take special care in backfilling and bedding operations to not damage pipe and pipe coatings.

C. Remainder of trench:

1. Except for special materials for pavements, backfill the remainder of the trench with material free from stones larger than 6" or 1/2 the layered thickness, whichever is smaller, in any dimension.
2. Deposit backfill material in layers not exceeding the thickness specified, and compact each layer to the minimum density directed by the soil engineer.

D. Adjacent to buildings: Mechanically compact backfill within ten feet of buildings.

3.6 TEST FOR DISPLACEMENT OF SEWERS AND STORMDRAINS:

- A. Check sewers and storm drains to determine whether displacement has occurred after the trench has been backfilled to above the pipe and has been compacted as specified.
- B. Flash a light between manholes or, if the manholes have not yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror.
- C. If the illuminated interior of the pipe line shows poor alignment, displaced pipes, or any other defects, correct the defects to the specified conditions and at no additional cost to the Owner.

3.7 PIPE JACKING : The Contractor may, at his option, install steel pipe casings, tongue-and-groove reinforced concrete pipes, and steel pipes under existing roads or pavements by jacking into place using procedures approved by the governmental agencies having jurisdiction and approved by the soil engineer.

3.8 TUNNELING OPERATIONS: The Contractor may, at his option, tunnel pipes into position using procedures approved by the soil engineer and the governmental agencies having jurisdiction.

- 3.9 FIELD QUALITY CONTROL: The soil engineer or Architect will inspect and approve open cuts and trenches before installation of utilities, and will make the following tests:
- A. Assure that trenches are not backfilled until all tests have been completed;
 - B. Check backfilling for proper layer thickness and compaction;
 - C. Verify that test results conform to the specified requirements, and that sufficient tests are performed;
 - D. Assure that defective work is removed and properly re placed.

SECTION 02510 – PAVING AND SURFACING OF WALKS AND PARKING AREAS

PART 1- GENERAL

1.1 DESCRIPTION

Furnish all labor material and equipment complete to provide for spreading and compacting asphalt concrete pavement along with construction of finished asphalt concrete walkways.

1.2 QUALITY ASSURANCE

A. Reference is made to the State of California, CALTRANS Standard Specifications, with the exception of the Payment paragraphs. All applicable subsections of Section 19 shall apply to this work.

PART 2-PRODUCTS

2.1 MATERIALS

A. Asphalt pavement; type B asphalt concrete, performance graded P.G. 64-16, steam refined, 3/4" maximum aggregate, medium grading.

B. Paint Binder: Asphalt emulsion, penetration type.

C. Traffic Paint: Fast-dry white conforming to California State Specification 8010-21E-04.

PART 3-EXECUTION

3.1 ASPHALT PAVING AND INSTALLATION

A. Placement shall be in strict accordance with CALTRANS Standard Specifications.

B. Paint Binder: All existing asphalt and concrete edges when constructed to meet the new asphalt services shall be sprayed with paint binder at the rate of 0.10 gallons per square yard..

C. Patch existing asphalt surfaces to achieve desired grades and repair any areas damaged by construction activities. Seams between existing asphalt and new patch material shall be straight, smooth and uniform.

3.2 TEST

Testing of the asphalt pavement and concrete curbs and walks shall be at the discretion of the Engineer and approving agencies and shall be paid for by the Owner. Retesting shall be paid for by the Contractor.

SECTION 02700 - SITE UTILITY SYSTEMS**PART 1 - GENERAL**

- 1.1 THIS SECTION includes all new connections to site utility systems and relocation and capping of all existing utility systems to be abandoned.
- 1.3 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Plumbing Code: California Plumbing Code most recent edition with current State and local amendments.
 - C. Mechanical Code: California Mechanical Code most recent edition with current State and local amendments.
 - D. Electrical Code: California Electrical Code most recent edition with current State and local amendments.
 - E. Fire Code: California Fire Code most recent edition with current State and local amendments.
 - F. Follow utility supplier instructions for hookups. Verify each individual utility supplier's requirements. Comply with all requirements of utility suppliers.
- 1.4 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.

PART 2 - PRODUCTS

- 2.1 Provide all materials required for maintaining all existing connections and hookups to utilities and septic system. All couplings, connectors, fittings, gaskets, screws, and any other materials and all labor necessary for maintaining or repairing existing hookups shall be included in the bid price. All piping and wiring for hookups shall be buried underground.
- 2.2 Work includes, but is not limited to, the following utility systems:
 - Satellite Service
 - Radio Communications Service
 - Electrical Service
 - Telephone Service
 - Water Service
 - Septic System

PART 3 - EXECUTION

- 3.1 PROTECTION OF EXISTING UTILITIES: Verify the location of all existing utility services and mark all lines and conduits prior to commencing earthwork, when utilities are encountered during the Work, carefully dig out around existing services and protect from damage during the course of construction. Any existing services which are damaged during the course of construction shall be repaired or replaced by the Contractor with materials of same type and specification at no additional cost to the Owner.
- 3.2 REPAIRS: For all manufactured products, follow manufacturer's instructions and details unless specifically modified by the Drawings and specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- 3.3 Comply with all relevant code requirements.
- 3.4 Comply with all requirements of utility suppliers.
- 3.5 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

- 1.1 THIS SECTION includes cast-in-place concrete shown on the Drawings, as specified herein, and as needed for complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. "Specification for Structural Concrete for Buildings," ACI 301-89 is a standard intended to be used essentially in its entirety, by referral in project specifications, to cover all usual requirements for cast-in-place concrete for buildings.
- 1.3 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.

PART 2 - PRODUCTS

- 2.1 Comply with pertinent provisions of ACI 301-89, except as may be modified by supplemental requirements stated in Part 3 of this Section.

PART 3 - EXECUTION

- 3.1 INSTALLATION: For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- 3.2 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

- 3.3 SURFACE CONDITIONS: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- 3.4 SUPPLEMENTAL REQUIREMENTS: Where consistent with the design shown on the drawings and in these Specifications, provide the products and activities described in ACI 301-89 except as modified below. **Item numbers cited below are item numbers contained in ACI 301.**
- A. 1.3.1 Definitions: Delete the definition of “Contract Documents” and refer to the definition given in the General Conditions of the Contract.
- B 3.2 Strength of Concrete:
- a. For slabs on grade: 2500 psi
 - b. For wall footings: 2500 psi
 - c. For column footings: 3000 psi
 - d. For floors refer to Table 3.14.2(a)
- C. 3.14.2 Class of Floors:
- a. Residential portions: Class 1
 - b. Parking portions: Class 3
- D. 4.1.3 Use of earth cuts as forms: Earth cuts may be used as forms for vertical concrete when specifically so approved by the Architect and governmental agencies having jurisdiction, and when concrete is at least 2” thicker than thickness shown for formed concrete.
- E. 4.1.4 Shop Drawings for formwork: Design of formwork is the responsibility of the Contractor.
- F. 4.5.5 Minimum strengths of concrete to be reached before weight-supporting formwork and shoring may be removed:
- a. Formwork not supporting concrete (such as sides of beams, walls, columns, or similar parts of the Work) may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided that curing and protecting operations are maintained.
- G. 5.2 Types of grades of reinforcing steel:
- a. Comply with ASTM A165:

- (1) Temperature steel in walls and slabs, ties, and reinforcing in masonry: Use grade 40.
- (2) All other: Use grade 60

H. 5.2.5 Welded wire fabric: Comply with ASTM A185

I. 5.3 Reinforcement supports: Provide plastic-tipped chairs and accessories for work exposed to view, exposed to weather, or where rust would impair applied finish, so that finished surface will not be marred or stained.

J. 6.2.2 Expansion joints materials: Comply with ASTM D 944 and ASTM D 1751 or ASTM D 1752 as appropriate.

K. 10.1.2 Finishes for formed surfaces;

- a. Provide “rough form finish” for concealed concrete.
- b. Provide “board formed finish” for all other concrete.

L. 11.7 Types of slab finishes:

- a. Provide “smooth trowel finish” for all interior surfaces.
- b. Provide “broom finish” for patios, landings and walkways.
- c. All exterior slabs shall be integrally colored. Color shall be Davis Colors "San Diego Buff" # 5237 @ 1.5 lbs / 94 lb. bag of gray Portland Cement.

SECTION 05500 - MISCELLANEOUS METALS**PART 1 - GENERAL**

- 1.1 THIS SECTION outlines general requirements for all miscellaneous metal work.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. In addition to complying with pertinent codes and regulations of all government agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect, comply with the recommendations contained in the most recent editions of the following publications:
 - Welding Manual
published by American Welding Society
 - Steel Construction Manual
published by:
American Institute of Steel Construction
1 East Wacker Drive, Suite 3100
Chicago, IL 60601-2001
(312) 670-2400
 - C. Material quality standards, grades, load and stress ratings and connector schedules given in this Section and in the General Notes of the Drawings are MINIMUM values. Refer to Structural Drawings (S series sheets) for grades, load and stress ratings and connector schedules specific to this project. Where quality standards given on the Structural Sheets exceed values indicated in this Section or in the General Notes, values given on the Structural Drawings shall take precedence. Where quality standards given on the Structural Sheets are less than the values given in this Section or in the General Notes, the HIGHEST of the values shall take precedence.
- 1.3 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.
 - B. Shop Drawings: Submit Shop Drawings of all pipe railings showing all dimensions and methods of attachment.

PART 2 - PRODUCTS

- 2.1 MATERIALS:
 - A. Steel Plates, Shapes, Bars: ASTM A 36.
 - B. Galvanized Steel Sheet: ASTM A 526, G 90, mill phosphatized.

- C. Galvanizing: ASTM A 386 for assembled products; A 123 for iron and steel hardware. All materials designated as "Galvanized" shall be Hot-Dip Galvanized. No Mechanical or electro-galvanization permitted.
 - D. Anchor Bolts, washers, nuts, joist hangers, clips, connectors and other framing items in contact with Pressure Treated wood at interior locations shall be Hot-Dip Galvanized in accordance with ASTM G 185, Simpson ZMAX, USP Triple Zinc G-185, type 316 stainless steel optional or equal products of other manufacturers. Galvanized fasteners shall be used with all galvanized framing connectors.
- 2.2 MISCELLANEOUS METAL ITEMS:
- A. Rough Hardware: Furnish custom fabricated bolts, plates, anchors and other miscellaneous steel and iron hardware required for framing, supporting and anchoring woodwork.
 - B. Steel angles and lintels: Fabricate to sizes shown. Galvanize after fabrication.

PART 3 -EXECUTION

- 3.1 PERFORM cutting, drilling, and fitting required for installation; set work accurately in location, alignment and elevation, measured from established lines and levels. Provide anchorage devices and fasteners where necessary for installation to other work.
- 3.2 FABRICATION:
 - A. Use materials of size and thickness shown, or if not shown, of required size and thickness to produce adequate strength and durability in finished product.
 - B. Weld corners and seams continuously; grind exposed welds smooth and flush. For stainless work use filletweld of stainless steel wire
 - C. Provide protective coating against galvanic action wherever dissimilar metals are in contact.
 - D. All other metal not specified: provide galvanized metal exposed to weather or in contact with concrete or masonry work.
 - E. Shop prime all items not galvanized. See Section 09900 for painting specifications.
 - F. Comply with NAAMM Pipe Railing Manual for all pipe rails.
- 3.3 TOUCH-UP SHOP PAINT after installation. Clean field welds, bolted connections and abraded areas, and apply same type paint as used in shop. Use galvanizing repair paint on damaged galvanized surfaces.

SECTION 06100 - CARPENTRY**PART 1 - GENERAL**

- 1.1 THIS SECTION includes all lumber products, plywood, rough and finish carpentry, fasteners and related work. Provide all materials and labor required to perform carpentry for the construction as depicted in the drawings, as specified herein and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Lumber grading shall comply with the following grading rules:
 1. Western Wood Products Association (WWPA).
 2. Redwood Inspection Service (RIS).
 3. West Coast Lumber Inspection Bureau (WCLIB).
 - C. Plywood shall comply with the requirements of the Plywood Specification and Grade Guide published by the American Plywood Association.
 - E. Material quality standards, grades, load and stress ratings and connector schedules given in this Section and in the General Notes of the Drawings are MINIMUM values. Refer to Structural Drawings (S series sheets) for grades, load and stress ratings and connector schedules specific to this project. Where quality standards given on the Structural Sheets exceed values indicated in this Section or in the General Notes, values given on the Structural Drawings shall take precedence. Where quality standards given on the Structural Sheets are less than the values given in this Section or in the General Notes, the HIGHEST of the values shall take precedence.
- 1.3 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.
 - B. Submit structural calculations and shop drawings sufficient to fully describe the design, spans, profiles and connections for prefabricated wood trusses and prefabricated web joists.

PART 2 -PRODUCTS

- 2.1 STRUCTURAL FRAMING LUMBER, unless otherwise indicated, shall be S4S and of the species and grade as noted below:
 - A. Light Framing and Studs: Douglas Fir, No. 2 or better.
 - B. Joists: Douglas Fir, No. 2 or better. Appearance grade where exposed.
 - C. Posts: Douglas Fir, No. 1 or better. Free of heart center.
 - D. Beams and stringers: Douglas Fir, No. 1 or better. Free of heart center.

- E. Mudsills: Foundation grade Redwood or pressure treated Douglas Fir.
- F. Exterior framing exposed to weather:
 - 1. Exposed rafter tails: Redwood, construction heart.
- 2.2 PLYWOOD SHALL be APA grade marked, conforming to Product Standard I-83.
 - A. Plywood sheathing: APA C-D, rated sheathing Exp. 1
 - B. Miscellaneous interior exposed plywood for paint finish: APA A-D INT with closed grain face veneer.
- 2.3 EXTERIOR FINISH LUMBER, unless otherwise noted, shall be S4S, finish face to have "saw texture," species and grade as noted below:
 - A. Fascia: Clear All-heart recycled or reclaimed old growth redwood. Match existing.
 - B. Trim: Paint grade redwood. Match existing.
 - C. Exterior Siding: Paint grade T-11 plywood siding. Match existing.
- 2.4 INTERIOR FINISH LUMBER
 - A. Baseboard Casings, Ceiling Mouldings and Other Trim: Kiln Dried Paint Grade Pine stock or MDF mouldings as manufactured by T.M. Cobb Co. or equal.
 - B. Window Sills, Jambs, Utility Shelving, Closet Poles, Miscellaneous Trim: S4S Paint Grade Pine, Douglas Fir or MDF.
 - C. Exposed Shelving (other than cabinet shelving): Douglas Fir, C and Better, edge banded plywood.
- 2.5 MISCELLANEOUS CARPENTRY MATERIALS:
 - A. Building Paper: See Section 07195 VAPOR PERMEABLE WEATHER RESISTIVE BARRIER
 - B. Bolts, washers, clips, framing anchors shall be hot dip galvanized.
 - C. Nails: Common wire for framing; finish for finish work; galvanized for exterior decks; ring shank for plywood subflooring/underlayment, Ring-shank type stainless steel red heads for siding, exterior trim, and fascia.

PART 3 -EXECUTION

- 3.1 ALL WORK shall be plumb and true, firmly installed in a neat workmanlike manner, complete in all respects.
- 3.2 INSTALL ALL necessary blocking and furring. Horizontal blocking for siding shall be 2'-0" o.c. maximum. Block all unsupported edges of square edge plywood sheathing.
- 3.3 NAILING shall be in accordance with applicable codes and standards as shown on drawings.

- A. Nail plywood wall sheathing with ring shank nails according to nailing schedule indicated on the plans.
 - B. Nail siding with stainless steel ring shank type nails.
 - C. All finish work shall be done with finish nails. If nailing tends to split, pre-drill nail holes.
- 3.4 NO CUTTING OF joists and beams for mechanical or electrical lines will be permitted without Architects approval.
- 3.5 ALL BOLTS bearing against wood shall have washers under both nut and head.
- 3.6 HANDLE AND STORE all lumber materials, plywood, etc., which are to be exposed in the finished work to prevent soiling or staining which cannot be removed by normal cleaning techniques. Brush or otherwise clean construction marks from exposed work at completion of job.

SECTION 06410 - ARCHITECTURAL CASEWORK

PART 1 - GENERAL

- 1.1 THIS SECTION includes the requirements for furnishing and installing all custom plastic laminate faced casework and plastic laminate countertops.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. COMPLY with applicable standards of the Architectural Woodwork Institute's "Architectural Woodwork Standards" most recent edition.
- 1.3 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.
 - B. Shop Drawings: Submit shop drawings in sufficient detail to indicate conformance to the requirements of the Contract Documents. Include materials, dimensioned plans, elevations, and sections, fastening methods, assembly methods, joint details, accessory listings, and schedule of finishes. Provide elevations at 3/8" scale minimum and indicate plan views of all countertops. Include depths of all casework in submittal.
 - C. Samples: Specified plastic laminate colors for verification of initial selections.

PART 2 - MATERIALS AND FABRICATION

- 2.1 GRADE

Provide W.I.C. Custom Grade, Style A, frameless, Type I, multiple unit construction.
- 2.2 ACCEPTABLE MANUFACTURERS
 - A. Fremont Millwork Co., Klamath Falls, Oregon
 - B. Ashland Glass and Millwork Co., Medford, Oregon
 - C. Firms with 5 years documented experience on projects of similar scope.
- 2.3 MATERIALS
 - A. Laminated Plastic Sheets: Comply with requirements of NEMA LD-3 latest edition.
 1. Exposed Horizontal or Vertical Surfaces: General purpose type, NEMA TYPE GP 50, 0.050-inch thick, matte finish. If woodgrain pattern is chosen, run and match vertically. Plastic Laminates shall be selected by Architect from colors and patterns

from the complete color range, including premium colors, of the following manufacturers: Formica, Nevamar, and Wilsonart. Multiple colors may be selected for different portions of the work. Field verify color selection with Architect and Owner prior to ordering materials.

2. Formed Surfaces: .042-inch thick, color to match horizontal surfaces, matte finish.

3. Semi-exposed Surfaces:

- a. Material for semi-exposed surfaces, except for interior faces of hinged doors shall be:
 - 1. High pressure cabinet liner, or
 - 2. Melamine overlay (LPDL, low pressure decorative laminate).
- b. The interior faces of hinged doors shall be faced with 0.020' minimum thickness high pressure thermoplastic cabinet liner.
- c. The color for all semi-exposed surfaces shall be white.

B. Drawer sides shall be double faced Melamine on 1/2" 45 lb. industrial particle board.

C. Drawer backs to be double faced Melamine 1/2" particleboard.

D. Drawer bottoms to be double faced Melamine on 1/2" particleboard.

2.4 MISCELLANEOUS MATERIALS

A. Concealed portions. Material shall be on any sound, dry solid stock, plywood, particleboard or any combination thereof.

B. Visible edges exposed or semi-exposed, of ends, tops, bottoms, shelves, webs, stretchers, bulkheads, partitions, and visible frame parts shall be covered with plastic laminate.

C. Except for drawer bottoms and case backs, drawer sides and backs, and secondary partitioning in cubicle type cases, all panel portions of case to be 45 lb. density industrial grade particleboard, 3/4" minimum thickness.

D. Shelves shall be hardwood plywood covered with whatever surface is required by this specification when the shelf is SEMI-EXPOSED or EXPOSED. Up to 32" clear span, shelf shall be 3/4" thick; over 32" to 48" shall be 1" thick.

E. Web Frames, stringers or spreaders, shall be a minimum of 3/4" thick and 2-1/2" in width, and shall be of either solid stock or plywood.

F. Backs:

1. Shall be 1/2" particleboard with Melamine finish two sides.
2. Exposed backs shall be 3/4" particleboard with high pressure cabinet liner inside and plastic laminate outside.

G. Cabinet doors shall be 3/4" particleboard bonded on interior with 0.020" minimum thickness high pressure cabinet liner.

H. Drawer fronts shall be 3/4" particleboard bonded on interior with 0.020" minimum thickness high pressure cabinet liner and plastic laminate outside.

I. Edge Banding: All four edges of door and drawer fronts shall be banded with plastic laminate. Colors to be selected by Architect.

2.5 HARDWARE

A. Hinge option: Unless noted otherwise, Salice 120 degree European style, concealed hinge with dull chrome finish.

B. Pulls for doors and drawers: Sugatsune #SWF-690 9" long stainless steel pulls, typical. Use 6" long pulls at drawer faces narrower than 13" wide.

C. Drawer slides:

1. For standard size general usage drawers, Accuride 3832 full extension slides, 100 pound capacity, clear zinc finish.
2. For file drawers, Accuride 4034 all ball bearing, full suspension, full extension slides, 150 pound capacity, clear zinc finish.

D. Wall standards and brackets:

1. Knappe and Vogt No. 80 Standard with No. 180 brackets for medium duty.
2. Knappe and Vogt No. 83 Standard with No. 183 brackets for heavier duty.

E. Shelf Supports shall be Hettich Universal #1 w/ seismic restraint.

F. Magnetic catches shall be Amerock 9793, single, or Amerock 9794 double.

2.6 ASSEMBLY

A. Shall be as follows:

1. Joinery
 - a. All cabinet members shall be securely fastened together.
 - b. All exposed and semi-exposed joints shall be tight and true.
 - c. All joints shall be securely glued.
2. Web Frames. A continuous stretcher front and rear shall be furnished and shall be attached by means of a dado. A continuous stretcher at the front shall be furnished

- at the approximate mid-height of all drawer cabinets over 2'-6" in drawer opening height and shall be attached by means of a dado.
3. Cabinet ends shall be lock jointed to the tops, web frames, stretchers, and bottoms.
 4. Fixed shelves, web frames, stretchers, bottoms, and vertical or horizontal divisions shall be dadoed or tenoned into adjoining members.
 5. Cabinet bases shall be constructed of 3/4" solid stock or plywood, and shall be an integral base for each cabinet unit. Bases are furnished raw for covering by others.
 6. Backs shall be securely dadoed to the case body and intermediate members. Backs shall be rabbeted into exposed ends.
 7. Wood anchor strips shall be minimum of 1/2" x 2-1/2" and provided at the top and bottom of the cabinet back.
 8. Adjustable shelves shall be adjustable on 1" centers and supported on KV 346 set in drilled holes.
 9. Drawers:
 - a. Drawer sides shall be blind dovetailed into the front and securely glued and stapled.
 - b. Drawer backs shall be dadoed into drawer sides, securely glued and stapled.
 - c. Drawer front and sides shall be plowed to receive drawer bottoms and shall be securely glued or glue blocked. Trays or bins shall be similarly constructed.
 - d. Drawers shall be supported on metal slides with provision incorporated to stop the drawer in both the in and out position.
 - e. File drawers shall:
 1. Have slotted bottom and shall be provided with a follower mechanism, or
 2. Shall be sized to receive a metal rack support system such as Pendaflex. Rack is not included unless so specified. Legal or Letter as noted.
 - f. Drawers shall show a maximum vertical gap of 3/32" and maximum horizontal gap of 5/32" between adjacent drawers or doors.
 10. Doors:
 - a. Using completely concealed self-closing hinges
 1. Doors to and including 48" in height shall be equipped with two hinges.
 2. Doors 49" to 94" in height shall be equipped with three hinges.
 3. Doors over 94" in height shall have four hinges.
 - b. Frameless sliding glass doors (not small) shall be installed on ball bearing carriers with metal track and top guide. Each panel shall have an insert type finger pull.
 - c. Doors shall show a maximum vertical gap of 3/32" and a maximum horizontal gap of 5/32" between adjacent drawers or doors.

2.7 COUNTERTOPS

- A. The following provisions apply to both standard laminated plastic covered counters.
 1. Core material shall be 45 pound density 3/4" thickness industrial grade particleboard. Core material at sinks shall be 3/4" A/C plywood.
 2. Top surface laminated plastic shall 0.05" general purpose type and shall be securely glued to the core with type II adhesive as-recommended by the adhesive

- manufacturer. In addition to meeting the requirements of Type II adhesive, the adhesive shall meet the Heat Resistant Test Requirements set forth in the W.I.C. master specification glossary. The underside of tops and splashes with particleboard core shall have a backing sheet securely glued with the identical glue and under identical circumstances as the face sheet.
4. Exposed edges of core material shall be neatly and entirely covered by trim.
 5. Holes for sinks or cooking tops will be cut.
 6. Joints shall be neatly and carefully made and to be water-tight. colorless silicone sealer shall be used in all butt joints. Connecting surfaces shall not be scissored. Not less than two Knap and Vogt No. 510 fasteners shall be installed at each deck butt joint.
 7. All exposed edges shall be eased.
 8. Provide a 1" radius at all outside corners of countertops.
 9. On any laminated plastic top the longest sheet available and required shall be used. If more than one sheet is required, lengths shall be the longest reasonably usable. With more than one sheet per top, color match is required.
 10. End splashes shall be furnished for butt joint installation at all tops against a wall.
 11. Where self-edging is used to line a sinkhole, the self-edging shall extend to the underside of the deck. Self-edging is not required at self-rimming sinks.
 12. Contractor to verify with Owner, number and location of slots and holes through countertop for paper and cord access. Provide plastic trim pieces at holes. Provide PVC edge band at paper access.
 13. Countertop support braces are to be fabricated and installed where indicated on drawings or where required (if not shown), in a manner to allow clearance for free movement of knees, beneath supports without hindrance.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install casework in accordance with the referenced Quality Standards for fabrication and installation in the field.
- B. All cabinets and casework shall be plumb, level, true and securely fastened in place. Scribe to adjacent surfaces.
- C. Care shall be taken that front edges of counter tops are carefully aligned.
- D. All required fillers, transitions, scribes and corner assemblies shall be properly attached in a neat and permanent manner. Fillers are required at gaps between cabinets in walls including fronts, tops of tall cabinets and tops of open corners.

- E. All installation shall be done by experienced craftsmen working.
- F. At completion of installation, all adjustable shelves shall be set, all units shall be brushed clean, and the installation shall be examined to verify it is a first-class assembly. Adjust doors, drawers and hardware to function smoothly and properly.
- G. Install casework plumb and level. Shim as necessary using concealed shims. Scribe to adjacent surfaces.
- H. Anchor wall units securely to wall to obtain loading requirements required by code. Indicate methods on shop drawings.
- I. Cabinets secured to floor shall be attached to blocking which has been secured to floor.
- J. All work shall be assembled at the mill insofar as is practical, in sections and lengths as required to be accessible to locations in the building. Deliver casework to the job ready to set in place.

SECTION 07195 - VAPOR PERMEABLE WEATHER RESISTIVE BARRIER**PART 1 - GENERAL**

- 1.1 THIS SECTION includes weather-resistive barriers including sealing joints and protrusions through membranes, with accessories as required for complete installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
- 1.3 SUBMITTALS
 - A. Product Data: Submit manufacturer's literature for each type of membrane.
 - B. Samples: Submit samples of each type of material.
 - C. Quality Assurance/Control Submittals: Submit either test reports or manufacturer's certificates indicating materials comply with specified requirements.

PART 2 - PRODUCTS

- 2.1 MANUFACTURER
 - A. Fortifiber® Building Systems Group, 1-800-773-4777 or equal.
 - B. Substitutions: Comply with provisions of Division 1.
- 2.2 MATERIALS
 - A. Vapor Permeable Weather-Resistive Barriers: Single layer 1-Ply asphalt saturated kraft Grade D breather type sheathing paper:
 - 1. Type: Classic: Fortifiber® / Jumbo Tex®.
 - 2. Reference Standard; Federal Specification UU-B-790a, Type 1, Grade D, Style 2.
 - 3. Moisture Vapor Transmission: 35 grams minimum; ASTM E 96.
 - 4. Water Resistance: 20 minutes (classic); ASTM D 779.
 - B. Accessories: Provide products recommended by membrane manufacturer for complete installation.
 - 1. Joint Sealers: Fortifiber® / Moistop® Tape; pressure sensitive tape or mastic as recommended by membrane manufacturer for specific material and application indicated.

2. Penetration Seal: Fortifiber® / The Boot®; pre-sized, multi-purpose penetration seal manufactured from puncture resistant polyolefin membrane.

PART 3 - EXECUTION

3.1 PREPARATION

Ensure items which pass through membrane are properly and rigidly installed, substrate is free of projections and irregularities which may be detrimental to proper installation of membrane.

3.2 INSTALLATION

- A. Apply membrane in accordance with manufacturer's recommendations, laid smooth without folds or bunches of material.
 1. Seam Overlap: As recommended by membrane manufacturer for specific membrane material and application indicated.
 2. Sealing: Seal edges and items projecting through vapor retarders and vapor barriers.
- B. Inspect and repair membrane prior to application of finish material over membrane; tape tears, perforations and similar damage.

SECTION 07200 - INSULATION

PART 1 - GENERAL

- 1.1 THIS SECTION includes all thermal and acoustic insulation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Insulation Blankets: Comply with Fed Spec HH-I-512F and ASTM C665, Type II.
 - C. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.

PART 2 - PRODUCTS

- 2.1 BLANKET INSULATION
 - A. Minimum Sizes:
 - 1. Walls: 3 1/2" R-13 (min.)
 - 2. Floors: None
 - 3. Ceilings: 8 1/4" thick R-30 cathedral (min.)
 - B. Manufacturer: Johns Manville or approved equal.
 - C. Facing: Kraft Paper (Vapor Retarding Facing)
 - D. Special Requirements: Formaldehyde free.
 - E. Application: Apply material between framing members at all exterior walls and above all ceilings to form a continuous insulation envelope around all conditioned spaces.
- 2.2 ACOUSTIC INSULATION
 - A. Size
 - 1. 2x6 walls: 5-1/2" R-19 (min)
 - 2. 2x4 walls: 3-1/2" R-13 min)

- B. Manufacturers: Owens –Corning or approved equal
- C. Facing: Unfaced
- D. Special Requirements: Formaldehyde free
- E. Application: Apply material as a continuous barrier in between studs at all interior walls.

PART 3 - EXECUTION

- 3.1 GENERAL: Install all insulation in accordance with insulation manufacturer's instructions, with fasteners, adhesives and tapes, supplied or recommended by insulation manufacturer.
- 3.2 CEILING AND WALL INSULATION: Staple flanges of faced batts to narrow face of rafters, joists and studs, filling all voids. Tape ruptures or gaps in vapor barrier face. Friction fit unfaced batts in stud and joist spaces.

SECTION 07413 - CORRUGATED METAL ROOFING**PART 1 - GENERAL**

- 1.1 THIS SECTION includes, but is not necessarily limited to, furnishing and installation of all preformed metal roofing and accessories as indicated on the drawings, specified herein, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. In addition to complying with pertinent codes and regulations of all governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect, comply with the recommendations contained in the most recent editions of the following publication :

The NRCA Steep Roofing Manual
published by:
National Roofing Contractors' Association
O'Hare International Center
10255 W. Higgins Road
Suite 600
Rosemont, IL 60018
(708) 299-9070
 - C. TESTING AND CERTIFICATION
 1. Wind Uplift: UL 580 test, Class 90 rated per
Construction #364 minimum 24 guage panels when installed over 5/8" plywood.
 2. Air Infiltration: Panel to meet the following standard when tested in accordance with ASTM E-1680-95:
 - a. With factory-applied continuous sealant - 0.05 cfm/lineal ft. at 1.57 psf positive pressure, and 0.07 cfm/lineal ft. of panel seam at 1.57 psf negative pressure.
 3. Water Penetration: Panel to meet the following standard when tested in accordance with ASTM E1646-95:
 - a. With factory-applied continuous sealant, no leakage at 20 psf.
 - D. INSTALLER'S QUALIFICATIONS
 1. Installer must be approved by the Panel Manufacturer in writing prior to work commencing.
 2. Installer shall meet the following:

- a. Successfully applied five metal roofs of comparable size and complexity which reflect a quality and weathertight installation.
- b. Have been in business for minimum period of 5 years in the region where the work will be performed, working on projects of this nature.

E. MANUFACTURER'S QUALIFICATIONS

1. Manufacturer shall have a minimum of 10 years experience supplying metal roofing to the region where the work is to be done.
2. Comply with current independent testing and certification as specified.
3. Manufacturer shall provide proof of liability insurance for their metal roof system and comply with current independent testing and certification as specified.
4. Panel manufacturers without full supporting literature, Flashings & Details Guides, Guide Specifications and Technical Support shall not be considered equal to the specified product.

F. REGULATORY AGENCY REQUIREMENTS

1. Comply with CBC and local Building Code requirements if more restrictive than those specified herein.
2. Compliance with certification must be submitted with bid.

1.3 SUBMITTALS:

A. PRODUCT DATA

1. Submit manufacturer's technical product data, installation instructions and recommendations for each type of roofing required. Include data substantiating that materials comply with requirements.

B. SAMPLES

1. Prior to ordering products, submit Manufacturer's standard color Samples for Architect's selection.
2. Prior to starting work, submit (3) 12" long Panel Samples showing shape and a representative color chip for Architect's acceptance.

C. SHOP DRAWINGS

1. Submit complete shop drawings detailing panel layout, trim installation, panel attachment and all perimeter and joint flashings that comply with manufacturer's standard recommendations.
2. Describe all proposed details that deviate from what is shown on the plans.

D. DESIGN CRITERIA

1. Wind Uplift: The roof system manufacturer shall provide an attachment schedule signed by a Professional Engineer licensed in the area where the work will be performed and supporting calculations to resist the following uplift loads:

- a. Uplift loads as calculated using the most recent edition of the CBC with a 80 MPH basic wind speed, Exposure Factor C, and importance Factor 1.
2. Drag Loading: The roof panel manufacturer shall provide an attachment schedule signed by a licensed Professional Engineer and supporting calculations to resist drag loads induced by a snow load of 20 psf.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Protect against damage and discoloration.
- B. Handle panels with non-marring slings.
- C. Do not bend panels.
- D. Store panels above ground, with one end elevated for drainage.
- E. Protect panels against standing water and condensation between adjacent surfaces.
- F. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and allow to air dry.
- G. Painted panels shall be shipped with a protective plastic sheeting or a strippable film coating between all panels. Remove any strippable film coating prior to installation and in any case, do not allow the strippable film coating to remain on the panels in extreme heat, cold, or direct sunlight or other UV source.

1.5 PROJECT CONDITIONS

- A. Provide completed site condition form for the specified finish to suit project condition.
- B. Examine the conditions and substrates in which metal roofing work is to be installed. Substrate shall be installed level, flat and true to avoid panel stresses and distortion.
- C. Field measurements shall be taken prior to fabrication of panels.
- D. Process with roofing installation only after satisfactory conditions are met.

1.6 WARRANTY

- A. MANUFACTURER'S PRODUCT WARRANTY:
Manufacturer's 30 year warranty, as available for specified installation and environmental conditions.

B. CONTRACTOR'S WARRANTY:

Warrant panels, flashings, sealants, fasteners and accessories against defective materials and/or workmanship, to remain watertight and weatherproof with normal usage for five (5) years following Project Substantial Completion date.

PART 2 PRODUCTS**2.1 BASIS OF DESIGN**

A. Manufacturer: AEP Span, A Division of ASC Profiles Inc.
2110 Enterprise Boulevard
West Sacramento, CA 95691
800-733-4955

B. Panel Designation: Nu-Wave® Corrugated.

36" wide panels, net coverage 32" (roof), rib depth 7/8" @ 2-2/3" o.c.

C. Substitutions: It shall be the contractor's responsibility to demonstrate that a substitute product meets or exceeds the performance and warranty standards of the product specified. Submit substitute product information to respond to all items in "Quality Assurance", "Performance Requirements" and "Submittal" sections of this specification

2.2 MATERIALS**A. PANELS****1. Base Metal:****a. Material: Steel conforming to:**

1. ASTM A792 minimum yield 50,000 psi, thickness 24 guage.
2. [For primers thicker than 0.5 mil] Steel conforming to ASTM A653, G-90 Galvanized, minimum yield 40,000 psi, thickness 24 guage.

b. Protective Coating:

1. Conform to ASTM A792, AZ50 (Zincalume/Galvalume).
2. [For primers thicker than 0.5 mil] Conform to ASTM A924 G-90 Galvanized.

2. Exterior Finish:

- a. DuraTech® 5000 (Polyvinylidene Fluoride), full 70% Kynar® 500/Hylar 5000® consisting of a baked-on 0.15-0.20 mil corrosion resistant primer and a baked-on 0.70-0.80 mil finish coat with a specular gloss of 10-30% when tested in accordance with ASTM D-523- 89 at 60°.

3. Interior Finish:

- a. Primer Coat Material: Corrosion-resistant primer; primer coat

- dry film thickness: 0.15 mils; finish coat material: polyester paint, finish coat dry film thickness: 0.35 mils.
- b. Total Interior Dry Film Thickness: 0.50 mils.
- c. Color: Off-White.
- 4. Color: To be selected by Architect from Manufacturer's standard selection of not less than 22 colors.
- B. ACCESSORIES: Provide and install all accessories per manufacturer's installation instructions and as needed for a complete and proper installation.
- C. SEALANTS: Provide and install all sealants per manufacturer's installation instructions and as needed for a complete and proper installation. Only manufacturer approved sealants for each particular location (exposed vs. non-exposed) are acceptable. No substitutions permitted.
- C. FLASHING: Material, gauge and finish to match panels. Do not use lead or copper.
- D. UNDERLAYMENTS: Prior to panel installation a minimum of one continuous layer of Ice and Water ShieldTM, manufactured by W.R. Grace, Co. should be installed per the felt manufacturer's recommendations. The underlayment should be lapped at all flashings and seams as required by the manufacturer for the roof slope on this project.
- E. FABRICATION
 - 1. Unless otherwise shown on drawings or specified herein, fabricate panels in continuous one-piece lengths and fabricate flashings and accessories in longest practical lengths.
 - 2. Roofing panels shall be factory formed. Field formed panels are not acceptable.

PART 3 - EXECUTION

- A. EXAMINATION
 - 1. EXISTING CONDITIONS
 - a. Inspect installed work of other trades and verify that such work is complete to a point where this work may continue.
 - b. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instructions.
 - c. Verify that members to receive panels are complete, accurately sized and located, in true plane, secure and otherwise properly prepared.
 - d. Prior to starting work, notify General Contractor about defects requiring correction.
 - e. Do not start work until conditions are satisfactory.
- B. PREPARATION
 - 1. FIELD MEASUREMENTS

- a. Verify prior to fabrication.
- b. If field measurements differ from drawing dimensions, notify Architect/Engineer prior to fabrication.

2. PROTECTION

- a. Treat, or isolate with protective material, any contacting surfaces of dissimilar materials to prevent electrolytic corrosion.
- b. Require workmen who will be walking on Roofing Panels to wear clean, soft-soled work shoes that will not pick up stones or other abrasive material which could cause damage and discoloration.
- c. Protect Work of other Trades against damage and discoloration.

3. SURFACE PREPARATION

- a. Clean and dry surfaces prior to applying sealant.

C. INSTALLATION

1. PANELS

- a. Follow roof panel manufacturer's directions.
- b. Install panel seams vertically.
- c. Lap panels away from prevailing wind direction.
- d. Do not stretch or compress panel side-lap interlocks.
- e. Secure panels without warp or deflection.
- f. Remove strippable protective film, if used, immediately preceding panel installation.

2. ALLOWABLE ERECTION TOLERANCE

- a. Maximum Alignment Variation: 1/4 inch in 40 feet.

3. FLASHING

- a. Follow manufacturer's directions and architect approved Shop Drawings.
- b. Overlap roof panels at least 6 inches.
- c. Install flashings to allow for thermal movement.
- d. Remove strippable protective film, if used, immediately preceding flashing installation.
- e. The Sheet Metal and Air Conditioning Contractors' National Association Inc. (SMACNA) manual is an excellent reference for sheet metal contractors. Its guidelines for underlayments, gutter and downspout size requirements, and expansion/contraction of metals and flashing joints should be followed.

4. CUTTING AND FITTING

- a. Neat, square and true. Torch cutting is prohibited where cut is exposed to final view.

- b. Openings 6 inches and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.
- c. Where necessary to saw cut panels, debur and treat with galvanic paint.

D. CLEAN UP AND CLOSE OUT

1. PANEL DAMAGE AND FINISH SCRATCHES

- a. Do not apply touch-up paint to damaged paint areas that involve minor scratches.
- b. Panels or flashings that have severe paint and/or substrate damage shall be replaced as directed by the Architect or Owner's Representative.

2. CLEANING AND REPAIRING

- a. At completion of each day's work and at Work Completion, sweep Panels, Flashings and Gutters clean. Do not allow fasteners, cuttings, fillings or scraps to accumulate.
- b. Remove debris from Project Site upon work completion or sooner, if directed.

SECTION 07540 - TORCH APPLIED MODIFIED BITUMEN ROOFING
(Contractor's Option #1)**PART 1 - GENERAL****1.1 DESCRIPTION**

- A. This Section includes Torch Applied Modified Bitumen roofing and flashing system where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work: The work includes, but is not necessarily limited to the installation of:
1. Vapor Barrier
 2. Insulation
 3. Separation Sheet
 4. Fasteners
 5. Roof Membrane
 6. Prefabricated Flashings for Protrusions of Pipes
 7. Walkways and Decking materials
 8. Clad Metal/Edge Metal and Detail Metal
 9. Sealants and Adhesives
 10. Fire Barrier (Fire Sheet, DensDeck, or Securock)

1.2 QUALITY ASSURANCE:

- A. Building Code: California Building Code most recent edition with current State and local amendments.
- B. In addition to complying with pertinent codes and regulations of all governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect, comply with the recommendations contained in the most recent editions of the following publications:

The NRCA Low Slope Roofing Manual

The Handbook of Roofing Knowledge

published by:
The National Roofing Contractor's Association
O'Hare International Center
10255 W Higgins Road, Suite 600
Rosemont, IL 60018
(708) 299-9070

1.3 Code Requirements

- A. The roofing contractor is responsible for installing a system that will meet California Building Code most recent edition with current State and local amendments.
Note: If the referenced manufacturers guidelines and local codes or industry standards are in conflict, the more restrictive shall govern.

1.3 SUBMITTALS:

- A. The roofing contractor shall submit to the Architect the following:
1. Copies of specifications.
 2. Written approval by the insulation manufacturer (as applicable) for use and performance of the product in the proposed system.
 3. Specimen copy of Warranty.
 4. Copies of Product Data Sheets.
 5. Copies of Material Safety Data Sheets (MSDS)
 6. Dimensioned shop drawings, which should include:
 - a. Outline of roof/s, dimensions and height of each building.
 - b. Special details not in the manufacturer's Specification Manual, submit for approval (use the System/Detail Deviation Request Form).
 - c. Technical acceptance from manufacturer.
 7. Certifications by producers of roofing materials that all materials supplied comply with all requirements of the identified ASTM and industry standards.
 8. Certification that the system specified meets all the identified code and

insurance requirements.

9. Calculations showing distribution and locations of fasteners, all loading conditions and pullout requirements for all fasteners. Calculations shall prove that fastening system meets or exceeds all roof fastener requirements of CBC and manufacturer's installation instructions.

1.5 Product Delivery, Storage, and Handling

- A. All products delivered to the job site shall be in the original unopened containers or wrappings.
- B. Handle all materials to prevent damage. Place all materials in the pallets and fully protect from moisture. (Do not lay the materials directly on existing roofing)
- C. Membrane rolls shall be stored lying down on pallets and fully protected from moisture.
- D. Bonding adhesives shall be stored at temperatures above 40 F.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on container or supplied by IBRS.

1.6 Job Conditions

- A. Only install as much new roofing and flashings as can be made watertight each day.
- B. All roofing shall be completed without exposing the building interior, its contents, or employees to inclement weather. Relative to the roofing project, the roofing contractor assumes all responsibility for maintaining the building in a dry condition during the project.
- C. All surfaces to receive new insulation, membrane, or flashings shall be thoroughly dry. If surface moisture occurs, the roofing contractor shall provide the necessary equipment to dry the surface prior to installation.
- D. Manufacturer requires the owner's representative or the roofing contractor to run pullout tests of fasteners to verify condition of deck/substrate, and to confirm pullout values to meet all Code and manufacturer's installation requirements. Testing methodology to conform with CBC requirements.
- E. Temporary waterstops shall be installed at the end of each work day, and shall be removed before proceeding with the next day's work.
- F. The roofing contractor is cautioned that certain PVC membranes are incompatible with asphalt and oil-based materials and cements. Creosote and penta-based materials

are also incompatible. Such materials should not come into contact with IB membranes at any time. If such contacts occur, materials shall be cut out and discarded. The roofing contractor should consult IBRS with respect to material compatibility, precautions, and recommendations.

- G. Arrange work sequence to avoid use of newly constructed roofing for storage, walking surface, and equipment movement. Where such access is absolutely required, the roofing contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas.
- H. Prior to and during application, all dirt, debris, and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air, and/or similar methods.
- I. All new and existing roofing, insulations, flashings, adhesive cans, metal work, and general construction debris shall be properly disposed of following all applicable local, state, and federal regulations.
- J. The roofing contractor shall follow all safety regulations as recommended by OSHA (Occupational Health & Safety Administration).
- K. The roofing contractor should take care during application and storage that overloading of the deck and structure does not occur.
- L. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks, and excessive heat.
- M. Until the roofing is completed, contaminants, such as grease, fats, oils, and solvents, should not be allowed to come into contact with the roofing membrane.
- N. The roofing contractor shall verify that all roof drains are unblocked before starting work. Report any such blockages to the owner's representative and manufacturer in writing.
- O. If any unusual or concealed condition is discovered stop work and notify the Architect and manufacturer immediately in writing.
- P. All areas affected by construction activities shall be cleaned.
- Q. The roofing contractor should take necessary precautions when using adhesives around air intakes. The smell of the adhesive could be a disturbance to the building occupants. It is the responsibility of the roofing contractor to coordinate equipment to be turned off and on, with the owner, if necessary to avoid such an occurrence.
- R. The degree to which the roof deck allows for air filtration into the roof assembly may

add to uplift forces on the roof system. Contact manufacturer for recommendations about buildings with large openings.

1.7 Bidding Requirements

Bidders need to visit the site and carefully examine the areas in question as to conditions that could possibly affect proper execution of the work. All dimensions and quantities shall be determined or verified by the roofing contractor.

1.8 Warranty

Provide Commercial 25 year Limited Labor and Material NDL Warranty*: The manufacturer will warranty the material, plus the labor for the reinstallation of new materials if the material becomes defective and leaks and the contractors workmanship.

*The Roof Contractors will be responsible for (workmanship) labor for the first two years after the project has been accepted.

PART 2 - PRODUCTS

2.1 Torch Applied Modified Bitumen Roofing System, Nailable Decks

A. Provide this system where indicated on the Drawings and otherwise where so required.

B. Acceptable products:

1. Product: Dibiten Poly/4.5 or equal.

Applicable Specification: Specification 415

Manufacturer: Dibiten USA
4301 E Firestone Blvd.
South Gate, CA 90280
(800) DIB-ITEN

2. Products of other manufacturer's including but not limited to those listed below will be considered for substitution by the Architect provided that all warranty provisions are identical:

- a. Product: Flintlastic

Manufacturer: GS Commercial Roofing Products
3825 Hopyland Road
Pleasanton, CA 94588

- b. Product: Tar Mac

Manufacturer: Tarmac Roofing System, Inc.
1401 Silverside Road
Wilmington, DE 11981

C. System description;

1. This description, and the installation procedures described in Part 3 of this Section, are based on use of the indicated system:
 - a. Underlayment:
For plywood or wood plank decks: *U.L. approved fiberglass base sheet type G-2 (25 lbs. per 100 sq. ft. or heavier).
 - b. Flashing Membrane: Dibiten Poly/4:
Smoothed surfaced APP modified bitumen membrane reinforced with nonwoven polyester fabric. Method of application: Torch applied only.
 - c. Surface Membrane: Dibiten Poly/4.5 Granular:
Granular (slate flake) finished APP modified bitumen membrane reinforced with nonwoven polyester fabric. Method of application: Torch Applied Only.
 - d. Fasteners:
As recommended by Manufacturer. Use nails or fasteners appropriate to the deck. Provide fasteners specifically approved for use under the conditions of the use of the Work by the governmental agencies and insurance rating bureaus having jurisdiction.
 - e. Materials required per 100 sq. ft. of roof area:
Base Sheet: 108 sq. ft.
Dibiten Poly/4: enough to Accomplish Flashing Details
Dibiten Poly/4.5 Granular: approx. 112.63 sq. ft (Approx. 1.06 rolls)

PART 3 - EXECUTION

- 3.1 SURFACE CONDITIONS: Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- 3.2 INSTALLATION, GENERAL
 - A. Verify that substrata are dry, smooth, clean, and free from sharp projections and depressions, properly graded to outlets, and that metal fittings are in proper place prior to start of roofing installation.
 - B. For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, adhesives, special fittings, or other specialty items called for in the installation instructions in order to assure proper

installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.

3.3 ROOFING APPLICATION

1. Beginning at the low point of the roof, apply base sheet in accordance with manufacturer, U.L. 580 and F.M. 190 requirements, mechanically fastened. Nailing pattern is every 9" on center on sidelaps and every 18" o.m. in two staggered rows in the field. Overlap base sheet 2" at side laps and 4" at endlaps.
2. Again starting at the low point of the roof, apply one layer of Dibiten Poly/4.5 Granular over the base sheet, using the torch method of application. Overlap sidelaps 4" and endlaps 6".

3.4 FIELD QUALITY CONTROL

- A. During progress of the Work of this Section, make visual inspections as necessary, and verify that:
1. All materials used comply with the specified requirements;
 2. All materials are properly stored and handled;
 3. The proper number and types of piles are installed, with the specified overlaps;
 4. The proper number, type, and spacing of fasteners are used;
 5. Associated flashings and sheet metal are installed in a timely manner in accordance with the specified requirements;
 6. All elements of the Work of this Section are completed on the same day and not installed in phase.

3.5 WARRANTIES:

At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion. Provide full 12 year warranty against defects in materials and workmanship.

SECTION 07550 - MEMBRANE ROOFING (Contractor's Option #2)**PART 1 - GENERAL CONDITIONS****1.1 Description**

- A. Scope: Install a mechanically attached PVC Single-Ply membrane with prefabricated flashings and other items to comprise a complete, watertight roofing system.
- B. Related Work: The work includes, but is not necessarily limited to the installation of:
 - 1. Vapor Barrier
 - 2. Insulation
 - 3. Separation Sheet
 - 4. Fasteners
 - 5. Roof Membrane
 - 6. Prefabricated Flashings for Protrusions of Pipes
 - 7. Walkways and Decking materials
 - 8. Clad Metal/Edge Metal and Detail Metal
 - 9. Sealants and Adhesives
 - 10. Fire Barrier (Fire Sheet, DensDeck, or Securock)

1.2 Quality Assurance

- A. This roofing system shall be applied only by a contractor authorized by roofing manufacturer prior to bid.
- B. The roofing membrane shall be a product of a manufacturer having over 20 years of experience in the manufacturing of roofing membrane.
- C. Upon completion of the roofing project, the roofing contractor shall submit, to manufacturer, a Request for Inspection Form or Notice of Completion Form, certifying that all work has been done in accordance with the contract specifications and manufacturer's requirements. If a Manufacturer's Labor and Materials Warranty was requested, an inspection shall be made by a representative of the manufacturer, to observe the roofing system.

- D. There shall be no deviation made from the contract specification or the approved shop drawings without prior written approval from the owner and manufacturer. If any items are found to be deficient and cannot be corrected at the time of inspection a punch list will be made and sent to the roofing contractor for correction. Upon completion of the punch list items, the roofing contractor will inform the manufacturer in writing.

1.3 Code Requirements

- A. The roofing contractor is responsible for installing a system that will meet California Building Code most recent edition with current State and local amendments.

Note: If the referenced manufacturers guidelines and local codes or industry standards are in conflict, the more restrictive shall govern.

1.4 Submittals

- A. The roofing contractor shall submit to the Architect the following:
 - 1. Copies of specifications.
 - 2. Written approval by the insulation manufacturer (as applicable) for use and performance of the product in the proposed system.
 - 3. Specimen copy of Warranty.
 - 4. Copies of Product Data Sheets.
 - 5. Copies of Material Safety Data Sheets (MSDS)
 - 6. Dimensioned shop drawings, which should include:
 - a. Outline of roof/s, dimensions and height of each building.
 - b. Special details not in the manufacturer's Specification Manual, submit for approval (use the System/Detail Deviation Request Form).
 - c. Technical acceptance from manufacturer.
 - 7. Certifications by producers of roofing materials that all materials supplied comply with all requirements of the identified ASTM and industry standards.
 - 8. Certification that the system specified meets all the identified code and insurance requirements.
 - 9. Calculations showing distribution and locations of fasteners, all loading

conditions and pullout requirements for all fasteners. Calculations shall prove that fastening system meets or exceeds all roof fastener requirements of CBC and manufacturer's installation instructions.

- B. The roofing contractor shall submit to manufacturer's Technical Department.
 - 1. For a Labor and Material Warranty a completed Notice of Award, Roof Plan and non-standard details prior to starting the project for technical approval.
 - 2. For a Material Warranty, the commercial Material Request form is the only form required to submit to manufacturer.

1.5 Product Delivery, Storage, and Handling

- A. All products delivered to the job site shall be in the original unopened containers or wrappings.
- B. Handle all materials to prevent damage. Place all materials in the pallets and fully protect from moisture. (Do not lay the materials directly on existing roofing)
- C. Membrane rolls shall be stored lying down on pallets and fully protected from moisture.
- D. Bonding adhesives shall be stored at temperatures above 40 F.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on container or supplied by IBRS.

1.6 Job Conditions

- A. Only install as much new roofing and flashings as can be made watertight each day.
- B. All roofing shall be completed without exposing the building interior, its contents, or employees to inclement weather. Relative to the roofing project, the roofing contractor assumes all responsibility for maintaining the building in a dry condition during the project.
- C. All surfaces to receive new insulation, membrane, or flashings shall be thoroughly dry. If surface moisture occurs, the roofing contractor shall provide the necessary equipment to dry the surface prior to installation.
- D. Manufacturer requires the owner's representative or the roofing contractor to run pullout tests of fasteners to verify condition of deck/substrate, and to confirm pullout values to meet all Code and manufacturer's installation requirements. Testing methodology to conform with CBC requirements.
- E. Temporary waterstops shall be installed at the end of each work day, and shall be

- removed before proceeding with the next day's work.
- F. The roofing contractor is cautioned that certain PVC membranes are incompatible with asphalt and oil-based materials and cements. Creosote and penta-based materials are also incompatible. Such materials should not come into contact with IB membranes at any time. If such contacts occur, materials shall be cut out and discarded. The roofing contractor should consult IBRS with respect to material compatibility, precautions, and recommendations.
 - G. Arrange work sequence to avoid use of newly constructed roofing for storage, walking surface, and equipment movement. Where such access is absolutely required, the roofing contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas.
 - H. Prior to and during application, all dirt, debris, and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air, and/or similar methods.
 - I. All new and existing roofing, insulations, flashings, adhesive cans, metal work, and general construction debris shall be properly disposed of following all applicable local, state, and federal regulations.
 - J. The roofing contractor shall follow all safety regulations as recommended by OSHA (Occupational Health & Safety Administration).
 - K. The roofing contractor should take care during application and storage that overloading of the deck and structure does not occur.
 - L. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks, and excessive heat.
 - M. Until the roofing is completed, contaminants, such as grease, fats, oils, and solvents, should not be allowed to come into contact with the roofing membrane.
 - N. The roofing contractor shall verify that all roof drains are unblocked before starting work. Report any such blockages to the owner's representative and manufacturer in writing.
 - O. If any unusual or concealed condition is discovered stop work and notify the Architect and manufacturer immediately in writing.
 - P. All areas affected by construction activities shall be cleaned.
 - Q. The roofing contractor should take necessary precautions when using adhesives around air intakes. The smell of the adhesive could be a disturbance to the building occupants. It is the responsibility of the roofing contractor to coordinate equipment to be turned off and on, with the owner, if necessary to avoid such an occurrence.

- R. The degree to which the roof deck allows for air filtration into the roof assembly may add to uplift forces on the roof system. Contact manufacturer for recommendations about buildings with large openings.

1.7 Bidding Requirements

Bidders need to visit the site and carefully examine the areas in question as to conditions that could possibly affect proper execution of the work. All dimensions and quantities shall be determined or verified by the roofing contractor.

1.8 Warranty

Provide Commercial 25 year Limited Labor and Material NDL Warranty*: The manufacturer will warranty the material, plus the labor for the reinstallation of new materials if the material becomes defective and leaks and the contractors workmanship.

*The Roof Contractors will be responsible for (workmanship) labor for the first two years after the project has been accepted.

PART 2 - PRODUCTS

2.1 Manufacturer

- A. IB Roofing Systems, PVC single ply membrane roofing system or equal products of other manufacturers.
- B. This Section is a performance specification written based upon IB Roofing Systems (IBRS) PVC single ply membrane roofing system. Dimensions and details in the Drawings indicate IBRS components.

2.2 Substitutions

- A. It shall be the contractor's responsibility to demonstrate that a substitute product meets or exceeds the performance and warranty standards of the product specified.
- B. In making a proposal for "or equal" substitution, the Contractor guarantees that the proposed substitution shall meet the performance and quality standards of this specification.

2.3 General

- A. The roofing membrane Manufacturer shall have over 20 years experience in producing PVC Single-Ply Membrane.
- B. Any roofing system components other than those supplied or manufactured by IBRS must be submitted for review and acceptance.

2.4 Approved Membrane

- A. IB PVC Single Ply 80 mil. nominal thickness, polyester-reinforced membrane.
- B. Even thickness Top and Bottom film.
- C. Acrylic top Finish
- D. IB PVC Single-Ply Membrane shall conform to ASTM D4434-96 Standard for polyvinyl chloride sheet roofing. Classification: Type 3
- E. Membrane Color: White (Solarwise)
- F. IB PVC White (Solarwise) Single-Ply Membrane shall meet or exceed the below rating from Cool Roof Rating Council (CRRC) and is an Energy Star rated product.

CRRC Rating			
Solar Reflectivity		Thermal Emittance	
Initial	3 year	Initial	3 year
0.87	0.74	0.88	0.89

- G. Sheet Size:
 - 1. 80 mil 6X90 (360 square feet)
- H. As manufactured, the membrane shall conform to the physical properties noted on the following page.

IB PVC Roofing Membranes: Typical Properties

Property	Method	Requirement	80 mil
Thickness [in]	ASTM D751	0.045	0.080 (+/- 10%)
Breaking Strength [lbf/in.]			
MD	ASTM D751	200	540
XMD	A-Grab Method	200	480
Elongation @ Break [%]			
MD	ASTM D751	15 ^A	40
XMD	A-Grab Method	15 ^A	38
Retention of Properties after Heat Ageing:			
Breaking Strength [%]	ASTM D3045	90%	Pass
Elongation @ Break [%]	80°C for 56	Original	Pass
Tearing Strength [%]			Pass

days				
Tearing Strength [lbf]		ASTM D751		
	MD	B-Tongue Tear	45	74
	XMD	Method	45	70
Low Temperature Bend [°C]		ASTM D2136		
		-40°C	Pass	Pass
Accelerated Weathering				
	Cracking (7x Magnification)	ASTM G53	None	None
		5,000 h min	None	None
	Crazing (7x Magnification)		Negligible	Negligible
	Discoloration (Visual)			
Linear Dimensional Change[%]		ASTM D1204		
		80°C for 56 days for 6 hours	0.5	-0.4
	MD		0.5	0.0
	XMD			
Change in Weight After Immersion in Water [%]		ASTM D570		
		70°C for 168 hours	3	1.2
Static Puncture Resistance		ASTM D5602		
		33 lbf @ 23°C	Pass	Pass
Dynamic Puncture Resistance		ASTM 5635		
		20J @ 23°C	Pass	Pass
Seam Strength		D751		
			75%	100%
Warranty (years non-prorated)				25 Material

For reinforcing fabric only; elongation of PVC material shall be 250% MD and 220% XMD

The table presents typical properties of IB PVC roofing membranes. Requirements are taken from ASTM D4434-96.

Note: As well as ASTM D4434-96, IB PVC roofing membranes meet the following standards:

1. Factory Mutual 4470
2. UL/ULC Class A
3. CAN/CGSB 37.54-95

2.5 Acceptable Substrates

A. Insulations

1. Polyisocyanurate
 - a. IB ISO Energy Board
 - b. Any IBRS approved Polyisocyanurate
2. Expanded Polystyrene
 - c. EPS with poly, glass, or foil facer

B. Cover Board

1. 1/4" thick DensDeck or approved equal.

C. IB Separation Sheet

1. Provide separation sheet recommended by manufacturer's installation instructions. Separation sheet shall provide Class 'A' fire rating. Provide separation sheet at all locations except where DensDeck underlayment is specified.

D. Plywood

1. CDX or better, only permitted when used in combination with separation sheet.

2.6 Acceptable Structural Decks

- A. Plywood, 1/2" minimum
- B. OSB, 5/8" minimum

2.7 Acceptable Fasteners

Acceptable Fasteners Table	Stand ard Insul ation Faste ner	Heavy Duty Memb rane Fasten er	Extra Heavy Duty Membra ne Fastener
Plywood 1/2"	•	•	•
OSB 5/8"	•		•

It is the roofing contractor's responsibility to verify pullout values to meet all Code and manufacturer's installation requirements. before roofing installation begins.

2.8 Related Materials

A. Wood nailers

1. Wood nailers should be treated for fire and rot resistance, #2 or better lumber. Creosote or asphaltic-treated lumber is not acceptable.
2. Wood nailers shall conform to Factory Mutual's Loss Prevention Data Sheet 1-49.
3. All wood shall have a maximum moisture content of 19% by weight on a dry weight basis.

B. Insulation

1. See Specification Section 07200.

C. Insulation attachment

1. Fasteners and 3" plates shall be Factory Manual approved and meet FM Standard 4470 for corrosion resistance.
Note: IBRS does not accept plastic plates.

D. Fasteners for attachment of IB PVC Single-Ply Membrane

The following fasteners are accepted for use in steel and wood decks:

1. Corrosion-resistant screw and membrane plates, as supplied by IBRS.

E. Sealants and Pitch Pan Fillers

1. The following caulking/sealants are acceptable to use with the IB PVC Single-Ply Membrane:
 - a. IB Polyurethane Caulking
 - b. IB Water Stop
 - c. IB Pitch Pan Filler

F. Miscellaneous Fasteners and Anchors

1. All fasteners shall be the same type as the metal being secured. In general, all fasteners, anchors, nails, and straps shall be of zinc or cadmium plated steel, galvanized, or stainless steel. All fasteners and anchors shall have a minimum embedment of 1" into the acceptable substrate and shall be approved for such use by fastener manufacturer. Fasteners for attachment of metal to wood blocking should be angular ring shank nails with 1" minimum penetration. Fasteners for

attachment of metal to masonry should be expansion type fasteners. All fasteners shall meet Factory Manual Standard 4470 for corrosion resistance.

PART 3 - EXECUTION

3.1 General

- A. The roofing contractor has inspected and found the substrate suitable for the installation of the IB PVC membrane system.
- B. The roofing contractor should coordinate the installation so that each area is made watertight at the end of the day.

3.2 Deck Preparation

The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. If insulation is being fastened to the substrate, IBRS requires fastener pullout tests to verify deck condition and fastener pullout values.

A. New Construction

- 1. Wood deck: The roof deck shall be a minimum nominal 1 ½ "for lumber and ½" for plywood. The decks shall conform to Factory Mutual's requirements for Class 1 impregnated decks. Deck shall be installed according to Factory Mutual and/or local code requirements.
- 2. Cementitious wood fiber deck: The surface shall be smooth, level, and free from moisture or frost.

3.3 Substrate Preparation

- A. A proper substrate shall be provided to receive the IB PVC Single-Ply Membrane and mechanically attached system.
- B. The roofing contractor shall inspect the substrate for defects, such as, excessive surface roughness, contaminated surfaces, structurally unsound substrates, and anything that will adversely affect the quality of work.
- C. The substrate shall be clean, smooth, dry, and free from flaws, sharp edges, loose and foreign material, oil, and grease. Roofing shall not start until all defects have been corrected.
- D. All roof surfaces shall be free from water, ice, or snow.
- E. The IB PVC Single-Ply Membrane shall be directly applied over compatible and acceptable substrates only.

3.4 Wood Nailers

- A. Install continuous treated wood nailers at the perimeter of the entire roof and around roof projections and penetrations as specified on project drawings.
- B. Nailers shall be anchored to resist a minimum force of 175 pounds per lineal foot in any direction. Fastener spacing shall be a maximum of 3' O.C. fasteners shall be installed within 6" of each end. Spacing and fastener embedment shall conform to Factory Mutual Loss Prevention Data Sheet 1-49.
- C. Thickness shall be required to match substrate or insulation height.
- D. Any existing woodwork that is to be reused shall be firmly anchored in place (it shall resist a minimum force of 175 pounds per lineal foot in any direction) and free from rot. Only woodwork designated to be reused in detail drawings shall be left in place, all other woodwork shall be removed.

3.5 Vapor Barrier Installation

- A. General Criteria
Interior and/or exterior conditions (inside temperature/relative humidity) may warrant the use of a vapor barrier. The design professional shall, based upon information supplied by the owner, decide whether or not a vapor barrier is necessary. It is the design professional's responsibility to determine the type and location of a vapor barrier. A vapor barrier can also act as an overpressure barrier should interior air pressure be a concern. IBRS requires the use of an acceptable vapor barrier/overpressure barrier over non-monolithic decks (steel, wood, precast, etc.) in lieu of the vapor barrier. Overpressure barrier, a double layer of insulation with staggered joints can be used. In a retrofit situation, the existing roofing is considered to be an adequate vapor barrier/overpressure barrier. Consult IBRS for special conditions such as cold storage freezers and high-humidity occupancies.
- B. New Construction
A vapor barrier shall be installed over suitable substrate (Deck or insulation) with all side laps, end laps, and penetrations sealed in accordance with the vapor barrier manufacturer instructions. The vapor barrier may be fastened or adhered with an adhesive supplied by the same manufacturer.

3.6 Insulation / DensDeck Installation

The prepared substrate shall be smooth, clean, dry, and free of defects. The insulation shall be laid out on the substrate in parallel rows. All joints shall be staggered a minimum of 6" with no gaps larger than 1/8". If positive drainage is a requirement, tapered insulation should be considered.

A. Mechanical Attachment

1. IBRS requires pullout tests to be done to verify deck conditions and actual pullout values.
2. Insulation shall be mechanically attached to the structural deck using corrosion-resistant screw and insulation plates, as supplied by IBRS. Fastening rate and pattern shall conform to insulation manufacturer, Factory Mutual, and IBRS recommendations.
3. Fasteners are to be installed in accordance with the fastener manufacturer's recommendations. Fasteners are to have minimum penetration into the structural deck recommended by the fastener manufacturer and IBRS.
4. Use fastener tools with a depth locator, as recommended or supplied by the fastener manufacturer, to ensure proper installation.
5. Insulation shall be laid on acceptable substrate or vapor barrier with tight joints in parallel courses with end joints staggered. If more than one layer is used, the second layer of insulation shall be laid transverse to the first layer with joints staggered.
6. Insulation shall be secured in accordance with Factory Mutual Technical Bulletin 1-28.
7. Install tapered insulation in accordance with the insulation manufacturer's shop drawings.
8. Install tapered insulation around drains to create a drain sump.
9. Do not install more insulation board than can be covered with IB membrane by the end of the day or onset of inclement weather.
10. Multi-Layer Insulation: If mechanically-attached, the first layer can be loose-laid, while the second layer would require mechanical attachment, as directed by IBRS Technical Department.

3.7 Separation Sheet Installation

- A. Separation sheet, if required, shall be applied over non-compatible, or irregular substrate. Overlap separation sheets a minimum of 2".
- B. Separation sheet must be secured with corrosion-resistant screw and insulation plates, as supplied by IBRS, so as to prevent movement from wind or traffic.

- C. The installation of separation sheet is to be followed immediately by the installation of IB PVC Single-Ply.

3.8 Clad Edge Metal

- A. All flashings shall be installed concurrently with the roof membrane as the job progresses.
- B. Clad metal flashings shall be formed and installed per detail drawings.
- C. Install clad metal and metal cleat in accordance with Factory Mutual's Loss Preventions Data Sheet 1-49.
- D. Position the IB PVC Single-Ply Membrane over the roof edge and down the outside face of the wall or wood nailer. Fasten membrane 12" o.c. with galvanized roofing nails.
- E. The fastening flange of the clad metal shall be a minimum of 2 ½" in width. Install fasteners a minimum fastener 1" from the outside edge of the clad metal so the 6" cover strip can be welded to the clad metal, completely covering all fasteners by a 1" minimum.
- F. Clad metal shall be spaced ¼" apart. The joint shall be covered with 2" wide foil tape and then a 5" wide strip of flashing membrane shall be hot-air welded over the center of the joint.
- G. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion/contraction.
- H. Clad metal may be painted with exterior latex paint after roofing project is completed. Caution should be taken to prevent over spray of paint on roofing or building surfaces.

Note: All clad metal shall be IB 24 ga. clad metal (available in white only).

3.9 Installation of IB PVC Single-Ply Membrane

- A. General
 - 1. The surface installation if the insulation or substrate shall be inspected prior to installation of the IB PVC Single-Ply Membrane. The substrate shall be clean, dry, and smooth with no excessive surface roughness, contaminated surfaces, or unsound surfaces, such as broken or delaminated insulation boards.
 - 2. IB PVC Single-Ply Membrane is to be attached with fasteners and plates according to IBRS specifications and details.
 - 3. Membrane overlaps shall be shingled with the flow of water where possible.
- B. Perimeter and Corners

1. Over the properly installed and prepared substrate surface, perimeter half sheets are to be installed parallel with the entire perimeter edge. Half sheets are to be laid out in an approved pattern. Sheets shall be overlapped by a minimum of 5". Fasteners shall be installed according to IBRS instructions. Fasteners shall secure IB PVC Single-Ply Membrane tightly to substrate.
2. Consult the Mechanical Attached guidelines in the warranty section of the IBRS Division 7 Binder for specific fastening requirements. Perimeter area is defined as the outer boundary of the roof. If the roof is broken into different levels, each roof area shall be treated as an individual roof with its outer boundary being treated as a perimeter.

C. Interior-field sheets

1. The standard-sized IB PVC Single-Ply membrane is to be unrolled. Interior sheets shall run perpendicular to the direction of the steel and wood plank decks. Sheets shall be overlapped a minimum of 5".
2. Fasteners and plates are to be installed along the edge of the membrane.
3. Consult the Mechanical Attached guide in the warranty section of the IBRS Division 7 Binder for specific fastening requirements.

D. Attachment around Perimeter and Rooftop Penetration

1. Around all perimeters, at the base of walls, drains, curbs, vent pipes, or any other roof penetrations. Fasteners and plates shall be installed according to perimeter rate of attachment. Fasteners shall be installed according to IBRS instructions. Fasteners will clamp IB PVC Single-Ply Membrane tightly to the substrate.
2. IB PVC Single-Ply Membrane flashings shall extend 2" past the plate line and be hot-air welded to the IB PVC Single-Ply Membrane with AUTOMATIC 220 volt welding equipment, approved by IBRS.

3.10 Membrane Flashing

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the project manager and IBRS. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the new roofing due to incomplete flashings, the affected area shall be removed and replaced at the roofing contractor's expense.

A. Vertibond Contact Adhesive for Flashings

1. Over the properly installed and prepared substrate surface, Vertibond Adhesive

shall be applied using approved solvent resistant paint rollers. The adhesive shall be applied to an approved substrate at a rate of approximately 120 sf per gallon. The adhesive shall be applied in smooth, even coatings with no holidays, globs, puddles, or similar irregularities. Only an area that can be covered completely in the same day's operation shall be coated with adhesive. The surface with adhesive coating shall be allowed to dry completely prior to installing the membrane.

- a. Drying time increases with cooler temperatures and high humid conditions. The roofing contractor shall check with the IBRS technical representative prior to roof operations on such days.
 - b. The roofing contractor shall count the amount of adhesive used per square, and the number of buckets of adhesive used per area per day to verify that he is conforming to the specified adhesive rate.
 2. When the surface is dry, the IB flashing membrane is cut to a workable length and the underside shall be coated evenly with Vertibond adhesive at a rate of 120 sf per gallon. **NO BONDING ADHESIVE SHALL BE APPLIED IN LAP AREAS.** While the adhesive is active (produces strings when touched with a dry finger), the coated membrane shall be rolled carefully onto the previously coated substrate to avoid wrinkles. Do not allow adhesive on the underside of the IB membrane to dry completely. The amount of membrane that can be coated with adhesive before applying to substrate will be determined by ambient temperature, humidity, and manpower. Adjacent sheets shall be overlapped a minimum of 4". IB flashings shall extend 5" onto the roofing membrane. The bonded sheet shall be pressed firmly into place with a hand roller.
 3. No bonding adhesive shall be applied in lap areas that are to be welded to flashings or adjacent sheets. All sheets shall be applied in the same manner, lapping all sheets as required by welding techniques.
- B. Mechanically attached for flashings
1. Over a properly installed substrate surface. Apply IB PVC membrane flashings on the wall and fasten to the outside edge of the nailer. (For wall less than 18" high).
 2. For walls taller than 18" fasten the membrane to the wall 12" o.c. with fasteners and 2" plates. 6" up from the roof to wall transition and then every 18".
 3. The next adjacent sheets should be overlapped 4" over previous installed flashings and should extend 5" onto the deck membrane. Heat weld in place.
- C. All flashings shall extend a minimum of 8" above roofing level unless previously accepted by the owner's representative and IBRS.
- D. All interior and exterior corners and miters shall be cut and hot air welded into place.

- E. All flashings shall be hot air welded at their joints and at their connections with the roof membrane.
- F. IB flashings shall be terminated according to IBRS recommended details.

3.11 Hot-air Welding of Seams & Overlaps

A. General

1. Adjacent sheets shall be welded in accordance with the manufacturer's written instructions. All side and end laps shall be hot-air welded.
2. Overlap is to be 5" when the plates are installed in overlap.
3. Welding equipment shall be provided by or approved by IBRS.
4. All surfaces to be welded shall be clean according to IBRS recommendations. No adhesive or other contaminants shall be present within the lap area.

B. T-Seams

1. The point where two perpendicular lap seams intersect.
2. For 50 mil and 60 mil membrane T-Seams patches are not required, unless it has not been properly welded.
3. 80 mil membranes require the use of a 5" round reinforced membrane patch.

C. Hand Welding

1. IBRS requires automatic welders to be used as much as possible. We encourage hand welding kept detail work and smaller seams.

D. Machine Welding

1. IBRS automatic welding equipment will help to ensure the proper field seams are made. When using this equipment, the manufacturer's instructions shall be followed and local codes for electric supply, grounding, and over current protection observed. The automatic welding machines require 218 to 230 volts at 20 amps. The use of a portable generator is recommended.

E. Quality Control of Welded Seams

1. The roofing contractor shall check all welded seams, after cooling, for continuity

by use of the seam probe. The roofing contractor shall make a final probing of all welded seams and details at the conclusion of each day. When automatic welding equipment is first started or any time that the equipment is cooled and restarted a minimum of 2 seam test cuts is required. The test cut shall be approximately 2" wide, cross cutting the seam. These test cuts shall be dated, marked for location, and turned into the IBRS Technical Representative at the time of inspection.

3.12 Walkway Installation

A. General Criteria

Walkways shall be provided for regular maintenance of rooftop equipment and for roof areas subject to foot traffic.

B. Walk Tread Installation

1. Roofing membrane to receive Walk Tread shall be clean and dry.
2. Hot-air weld the perimeter of the Walk Tread to the IB PVC Single-Ply Membrane. Check all welds with a seam probe. Re-weld any inconsistencies.

3.13 Miscellaneous Metal Flashings

- A. Metal, other than that supplied by IBRS, not covered under IBRS warranty.
- B. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.
- C. All fabrication practices and installation procedures shall conform to the applicable requirements of the following, unless otherwise specified and/or detailed.
 1. Sheet Metal and Air-Conditioning National Association Inc. (SMACNA-latest edition).
 2. Factory Mutual Loss Prevention Data Sheet 1-49 (or latest edition).
 3. National Roofing Contractors Association (NRCA-latest edition).

3.14 Temporary Cutoff

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. When a break in the day's work occurs in the central area of a roof, a temporary waterstop shall be constructed to provide a 100% watertight seal. When work on the new system is suspended, the stagger of the insulation joints shall be maintained by installing partial fillers. The new membrane shall be carried into the waterstop. The waterstop shall be sealed to the deck and/or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of roof cement of 6" in width. When work resumes, the contaminated membrane shall be cut out. All sealant,

- contaminated membrane, insulation fillers, etc. shall be removed from the work area and disposed of off-site. None of these materials shall be used in the new work.
- B. If inclement weather occurs while a temporary waterstop is in place, the roofing contractor shall provide the necessary labor to monitor the situation and maintain a watertight condition.
 - C. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the roofing contractor's expense.

3.15 Completion

- A. Prior to leaving the site, the owner/project manager and the roofing contractor shall review the work. All defects noted, non-compliances with the specifications, and the recommendations of the manufacturer shall be itemized in a punch list. The roofing contractor must immediately correct these items to meet the satisfaction of the owner/project manager and manufacturer.
- B. All warranties, as required in section 1.00 of this specification, shall be submitted to manufacturer for approval. All materials purchased from manufacturer shall be paid in full prior to the issuance of any warranty.

SECTION 07600 - FLASHING AND SHEET METAL

PART I - GENERAL

1.1 THIS SECTION includes metal flashings, roof jacks, splash pans, downspouts, and other miscellaneous sheet metal items.

1.2 QUALITY ASSURANCE:

A. Building Code: California Building Code most recent edition with current State and local amendments.

B. In addition to complying with pertinent codes and regulations of all governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect, comply with the recommendations contained in the most recent editions of the following publications:

Architectural Sheet Metal Manual

published by:

Sheet Metal and Air Conditioning Contractors National Association

P.O. Box 22130

Chantilly, VA 22022

(703) 803-2980

The NRCA Construction Details

published by:

The National Roofing Contractor's Association

O'Hare International Center

10255 W. Higgins Road, Suite 600

Rosemont, IL 60018

(708) 299-9070

PART 2 - PRODUCTS

2.1 FLASHING: 16 oz. copper or stainless steel unless otherwise noted on the drawings. Fold, bead or return exposed edges for rigidity and appearance. Fabricate with flat-lock seams.

2.2 ROOF JACKS: Performed neoprene or 16 oz. copper.

2.3 NAILS, SCREWS, BOLTS, CLIPS: Of a material that will not support galvanic action.

- 2.4 GUTTERS: 6" deep nominal custom fabricated 16 oz. Copper fascia gutters, solder all joints..
- 2.5 DOWNSPOUTS: 3" (min.) square custom fabricated 16 oz. Copper downspouts, solder all joints. Size downspouts to flow.
- 2.6 LEAF GUARDS CONTINUOUS AT ALL GUTTERS: Amerimax Home #8519812 "Amerimax Gutter Guard" insert debris filter, black, plastic.
- 2.7 SPLASHBLOCKS: Precast concrete, one at each downspout outlet which is not connected to the rainwater leader system.

PART 3 -EXECUTION

- 3.1 EXPANSION JOINTS: Provide where shown and otherwise as necessary to properly compensate for thermal expansion and contraction.
- 3.2 JOINTS AND SEAMS: Form and/or solder to provide watertight work throughout.
- 3.3 The use of pop rivets in any condition, which will be exposed on the finish surface of the project, is not allowed unless approved by the Architect in advance.
- 3.4 SEPARATE dissimilar metals and protect against galvanic action with a minimum 15-mil coating of bituminous mastic.
- 3.5 ANCHOR WORK permanently in place with non-corrosive fasteners.
- 3.6 INSTALLATION: For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- 3.7 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. In addition, provide a 5-year warranty, in writing, to replace any or all joints failing within the warranty period at no cost to the Owners, labor and material inclusive. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 07900 - SEALANTS**PART 1 - GENERAL**

- 1.1 THIS SECTION includes all general sealing work required throughout the project.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
 - C. Comply with provisions of most recent edition of "Sealants and Caulking Spec Guide G07920" published by Construction Specifications Institute.
- 1.3 WARRANTY: Provide a 5-year warranty, in writing, to replace any or all joints failing within the warranty period at no cost to the Owners, labor and material inclusive.

PART 2 - PRODUCTS

- 2.1 Materials, General
 - A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
 - B. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by the Architect from manufacturer's standard colors.
 - C. Exterior joints
 - 1. Between metal frames and cast concrete, brick, masonry use Mono (acrylic terpolymer) manufactured by Tremco Commercial Construction Sealants, 3735 Green Road, Beachwood, OH 44122, (800) 321-7906 or equal.
 - 2. Expansion and control joints in concrete, use Vulkem 45 (polyurethane) by Mameco or equal.
 - 3. Exterior sills, jambs, heads of windows, doors, openings, trim, etc., wood to wood connections, use Vulkem 116 or equal.
 - 4. Glass to wood, use Mono or equal.
 - 5. Glass to glass, glass to metal, or glass to concrete: use Spectrem 2 by Tremco or equal. Note: For maximum expansion conditions use Spectrem 1 by Tremco.
 - 6. Glazing tape: Tremco 440 (polyisobutylene)
 - D. Interior:

1. Tile to masonry, tile to tile: Hydroment/Chem-Calk 900 (urethane) manufactured by Bostik, Inc. Boston Street, Middleton, MA 01949 or equal.
 2. Tile to tile, horizontal joints in water exposed situations: Hydroment/Chem-Calk 550 or equal.
 3. Expansion joints: Sonolac (acrylic latex) manufactured by Sonneborn Building Products, A Division of Chemrex Inc., 7711 Computer Avenue, Minneapolis, MN 55435, (800) 433-9517 or equal.
 4. Acoustical caulking: Sonolac or equal.
 5. Sealing cracks, baseboards, window frames, plumbing fixtures to tile, wood, etc.: Lexel (copolymer rubber) as manufactured by Sashco Sealants Inc. 10300 East 107th Place, Brighton, Colorado 80601, (800) 767-5656 or equal.
- E. Concrete waterproofing: Clear Seal: Sonneborn Penetrating Sealer #20 or equal.

PART 3 - INSTALLATION

3.1 GENERAL:

- A. Use and install per manufacturer's instructions to achieve effective adhesion and secure the work against penetration by water.
- B. Clean joint surfaces and prime as recommended by manufacturer.
- C. Accurately apply in one continuous operation to full depths and widths of joints or pockets. Surface shall have a thoroughly neat, extruded appearance when complete.
- D. Joint Width: As shown or 1/4" minimum and 1" maximum. Joint depth approximately one-half of joint width with a minimum depth dimension of 1/4".
- E. Support sealants from back with construction as shown or with backer rod.
- F. Sealant work shall precede asphaltic work, or painting.
- G. Clean adjacent surfaces free from caulking and sealant smears.

3.2 INSTALLATION: For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.

3.3 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. In addition, provide a 5-year warranty, in writing, to replace any or all joints failing within the warranty period at no cost to the Owners, labor and material inclusive. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 08210 - WOOD DOORS

PART 1 - GENERAL

- 1.1 THIS SECTION includes wood doors and frames.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
 - C. COMPLY with the most recent edition of the "Architectural Woodwork Standards" published by the Architectural Woodwork Institute.
Meet all requirements for Premium Grade Wood Doors.
 - D. COMPLY with requirements of NWMA I.S.I. for flush doors.
 - E. COMPLY with requirements of NWMA I.S.6 for Style and Rail Doors.
- 1.3 WARRANTY: All doors shall have manufacturer's one-year standard door warranty commencing with the date of substantial completion.

PART 2 - PRODUCTS

- 2.1 Provide doors as specified in the Door Schedule contained in the Drawings.
 - A. Fire rating: Provide manufacturers certification for fire ratings as specified in the plans or as required to meet prevailing codes.
 - B. Style and Rail layout: see Interior Elevations
 - C. Species: See door schedule.
 - D. Finish: See door schedule.

PART 3 - INSTALLATION

- 3.1 INSTALLATION:
 - A. Install work in this section as specified in the most recent edition of the "Architectural Woodwork Standards" published by the Architectural Woodwork Institute, and provide, to the Architect, a Woodwork Institute Certified Compliance Certificate for Installation at the completion of project installation.
 - B. Condition doors to average prevailing humidity in installation area prior to hanging.
 - C. Fit doors to frames and machine for hardware to extent not previously worked at factory.

- D. Clearance: 1/8" at jambs, heads and meeting stiles, 1/2" from bottom of door to top of finish floor for interior doors and clearance required by threshold hardware at exterior doors.
- 3.2 ADJUST AND CLEAN: Rehang or replace doors which do not swing or operate freely. Refinish or replace doors damaged during installation.
- 3.3 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 08520 - VINYL WINDOWS

PART 1 - GENERAL

- 1.1 THIS SECTION includes vinyl windows.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
 - B. Windows shall comply with air leakage requirements of the California Administrative Code, Title 24.
 - C. Comply with applicable standards of ANSI/AAMA/101/I.S.2 for the classifications or grades of vinyl windows.
 - D. Overall Standards: Comply with ANSI/AAMA/101/I.S.2
 - E. Insulated glass units are certified to ASTM E2188/E2190 per the Associated Laboratories Incorporated (ALI) guidelines.
 - F. AAMA: Windows shall be Gold Label certified with label attached to frame per AAMA requirements.
 - G. NFRC: Windows shall be NFRC certified with temporary U-factor label applied to glass and an NFRC tab added to permanent AAMA frame label.
 - H. The Quality Assurance Standard for installation of replacement windows shall be AAMA-2410-03: "Standard Practice for Installation of Windows with an Exterior Flush Fin over an Existing Window Frame" published by the American Architectural Manufacturer's Association.

PART 2 - PRODUCTS

- 2.1 Vinyl windows: Milgard Tuscany Series 8000T Z-bar (no nail-on fin) vinyl replacement windows with dual, Low E, tempered glazing or equal.
- 2.2 Product Specifications:
 - A. Nail fin, 2"
 - B. Frame: 3-1/4" minimum depth. Multi-chambered vinyl profile.
 - C. Sash: 2-5/8" minimum depth. Multi-chambered vinyl profile.
 - D. Structural Class:

- a. 32" x 71-1/2": C-C55
- b. 35-1/2" x 60": C-C60

E. Hardware:

- a. Dual stainless steel arm rotary operator with standard fold-down nesting handle.
- b. Single lever, multi-point locking mechanism.
- c. Two bar adjustable stainless steel hinge.

- 1. Weatherstripping: Foam filled bulb (interior), flexible leaf (middle).

PART 3 -EXECUTION

- 3.1 **INSTALLATION** : For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. all such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- 3.2 **SECURE** all units in place with permanent separations to prevent electrolytic corrosion. Seal entire perimeter of each unit.
- 3.3 **ADJUST AND LUBRICATE** operating sash and hardware for proper operation.
- 3.4 **APPLY HARDWARE** and adjust operating panels for smooth operation and weathertight closure.
- 3.5 **REPLACE BROKEN** and damaged glass prior to substantial completion. Clean and polish glass inside and outside before owners acceptance.
- 3.6 **INSTALL REPLACEMENT WINDOWS** in conformance with the recommendations contained in AAMA-2410-03: "Standard Practice for Installation of Windows with an Exterior Flush Fin over an Existing Window Frame" published by the American Architectural Manufacturer's Association.
- 3.7 **WARRANTIES:**
 - A. **MANUFACTURER'S WARRANTY:** At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.
 - B. **CONTRACTOR'S WARRANTY:** Warrant installation labor against defective workmanship, to remain fully operable, watertight and weatherproof with normal usage for five (5) years following Project Substantial Completion date.

SECTION 08710 - FINISH HARDWARE

PART 1 - GENERAL

- 1.1 THIS SECTION includes finish hardware where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Accessibility Requirements: All materials and workmanship shall comply with all the requirements for accessibility as set forth in the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Federal Americans with Disabilities Act in effect at the time of construction.
- 1.3 SUBMITTALS:

Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.

PART 2 - PRODUCTS

- 2.1 GENERAL
 - A. Numbers indicating hardware items are those of the manufacturer listed, or as otherwise indicated. Hardware finish, unless otherwise noted to be Polished Chrome.
 - B. Furnish hardware with all necessary screws, bolts or other fastenings as recommended by the hardware manufacturer.
 - C. Examine drawings to determine proper hand and other location requirements for hardware.
- 2.2 Shelf standards and brackets: K-V 82-NAT standards with 182 brackets; K-V 333ZC shelf rests.
- 2.3 LOCKS, CYLINDERS AND KEYING
 - A. COUNTY STANDARD LATCHSETS
Best-Stanley 9K series, Lever style 15, finish 626, AB function unless noted otherwise. Provide construction cores, final cores and keying by owner.
- 2.4 HARDWARE GROUPS:
 - A. Provide all items identified in the Door Schedule in the Drawings.
 - B. In addition to providing all hardware specified in plans, provide the following items unless noted otherwise:
 - 1. All exterior doors:

- a. Weather-stripping: Futura Door Weather Stripping, #WS-639 TC-80 in Copper, MacMurrey Pacific (415) 552-5500 or equal.
 - b. Door bottom: Pemko #411PKL or equal full mortised drop shoe mortised into bottom of door at all Entry doors and at other locations specifically noted on the Drawings.
 - c. Door bottom at other exterior doors: Macklanburg-Duncan or equal, bronze anodized extruded aluminum door bottom with integral drip and neoprene seal at bottom. .
 - d. Accessible Thresholds: Macklanburg-Duncan or equal, bronze anodized extruded aluminum accessibility code compliant threshold, full width of door frame.
 - e. Non-Accessible Thresholds: Macklanburg-Duncan or equal, bronze anodized extruded aluminum threshold, full width of door frame.
2. All swinging doors (interior and exterior):
 - a. Door stops: Baldwin #4045 or equal base mount door stop OR Baldwin #4010 or equal floor mount dome door bumper. Finish to match lockset. Where base mount door stop or floor mount dome door bumper cannot be installed, use Hager #CD-212 series hinge pin door stop. Finish to match lockset.
 3. Alternate Bid - Electric Strike: Adams Rite 7110 Electric Strike or equal at south entry door.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Mount hardware units at heights indicated in NWWDA I.S. 1.7-87 "Hardware Location for Wood Flush Doors," except lock/latch location shall be located to comply with Handicapped Accessibility Regulations.
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb and true to line and location.
- D. Fasteners:
 1. Furnish necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
 2. Where necessary, furnish fasteners with toggle bolts, expansion shields, sex bolts, and other anchors approved by the Architect, according to the material to which the hardware is to be applied and according to the recommendations of the hardware manufacturer.
 3. Provide fasteners which harmonize with the hardware as to finish and material.
 4. Where butts are required to swing 180 degrees, furnish butts of sufficient throw to clear the trim.

E. Keying:

1. Factory key and master key locks and cylinders as directed by the Architect.
2. Furnish three keys for each lock and three master keys.

F. Adjust and Clean:

1. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
2. Final Adjustment: Prior to acceptance or occupancy of the work make final check and adjustment of all hardware. Clean operating items as necessary for proper function and finish of hardware and doors. Adjust door control devices.
3. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

- 3.2 WARRANTIES : At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 08750 - CARD READER ACCESS SYSTEM

PART 1 - GENERAL

- 1.1 THIS SECTION includes Card Reader and electronic lock equipment where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. California Plumbing Code, most recent edition with current state and local amendments.
 - C. California Mechanical Code, most recent edition with current state and local amendments.
 - D. California Electrical Code, most recent edition with current state and local amendments.
 - E. California Fire Code, most recent edition with current state and local amendments.
 - F. Follow utility supplier instructions for hookups. Provide all work necessary to meet hookup requirements of individual utility suppliers.
- 1.3 SUBMITTALS: Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the work of this Section.

PART 2 - PRODUCTS

- 2.1 Provide all raceway, wiring, devices, equipment, connections and programming as identified on the plans and required to install one card reader to activate the front door latch interfaced with the existing Secura Key SK-ACPE control panel for the gate operator. The work of this section shall be included as follows:
 - A. **Base Bid:** Provide conduit with pull string from a new junction box at ground level on north wall, in the wall and attic space to a new single gang exterior facing junction box on the latch side of the door. Provide a weathertight blank cover.
 - B. **Alternate Bid:** Trench from existing gate control card reader to the Junction box on the north wall of the building, provide wiring in ¾" schedule 40 PVC conduit and conduit provided in base bid to card reader location at south door. Backfill trench and patch surfaces to match adjacent. Provide new card reader and electric strike at south door, make all connections and perform all programming required for a complete and operational system.

- 2.2 Manufacturer's literature for the existing card reader system used in this portion of the Work are included at the end of this Section.

PART 3 - EXECUTION

- 3.1 **INSTALLATION:** For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, utility hookups, vents, ducts, dampers, flashing systems, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. The Contractor at no additional cost shall provide all such items required by the installation instructions to the Owner.
- 3.2 **WARRANTIES:** At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products using in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECURA KEY SK-ACPE Advanced Control Panel

INTRODUCTION

The SK-ACPE Advanced Control Panel is a highly sophisticated, yet simple to use, two door access control unit with built-in Ethernet communications. The unit accepts readers of almost any technology, with a Wiegand output up to 40 bits, including Proximity, Touch Card, Wiegand, Magnetic Stripe, Bar Code, Optical, and Biometric. Each of the two passageways controlled by the unit is completely independent of the other and is configured, programmed and viewed separately.

Up to 100 SK-ACPE Panels may be linked together on a twisted pair (plus signal ground) RS-485 bus. When used with SK-NET™ software, a highly featured, easy to use, distributed intelligence access control system can be created.

Each of the two passageways controlled by the SK-ACPE has two programmable inputs which may be programmed by the user to function as a Door Monitor, Tamper Monitor, Remote Open, Remote Inactive, Bell, Arming Circuit, or User Defined Input.

Each of the two passageways controlled by the SK-ACPE has two outputs. One output is the “Latch Relay,” which operates the door locking or operating device. The other “Auxiliary Output” is programmable by the user to activate under one of several possible alarm or special conditions.

SK-ACPE will control access for up to 65,535 individuals in 15 weekly time schedules (Time Zones) independently for each of the two passageways. Time Zones include a holiday schedule that is followed when one of the 32 user programmable holidays occur.

Any Access Card may be designated as a “Limited Use” card, and its use may be restricted to allow access for a given number of days or weeks or for a given number of times.

The SK-ACPE may be programmed with a PC. Transaction information is stored by the unit and may be downloaded to a PC, or serial printer. Up to 10,000 transactions are stored.

Since the SK-ACPE has nonvolatile memory, reprogramming after a power loss is unnecessary.

CARD ID NUMBERS AND FACILITY CODES

Access cards used with the SK-ACPE have two encoded numbers: the ID number which is different on each card, and the Facility Code, (also called a system or site code) which is normally the same for all cards at a given site. When a card is read, the system first verifies the Facility Code, then it checks the ID Number against its internal “card list” in memory to see if the card is void or valid. It also checks the Time Zone, the card’s Antipassback status, and the Limited Use count.

SETTING THE FACILITY (SYSTEM) CODE

IMPORTANT: Before programming or using a new unit, the correct Facility Code must be set.

When power is first applied, or when the reset button is pushed (see Figure 3) the LED on each of the two readers will flash red and green alternately. While the LED is flashing, present an Access Card with

the proper facility code to one of the readers and remove it (note LED turns solid green for about 1 second and the beeper beeps to indicate that the card has been read). The SK-ACPE will “remember” the facility code and retain it until reprogrammed. It is not necessary to present the access card to the second reader since it is automatically set for both passageways. After setting the facility code, wait for the LED to stop flashing before attempting to use the reader.

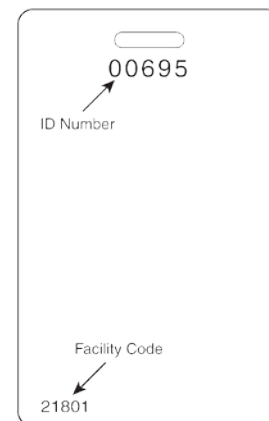
To change a facility code (or to set the facility code if the LED is not flashing red/green), momentarily depress the reset button. The LED indicator will flash red and green alternately. If the reset button is pushed, but no card is presented to the reader before the LED indicator times out, the facility code will be unchanged.

In some cases it may be necessary for the unit to recognize more than one facility code. Typical instances are when it is necessary to read cards that work in two independent locations that already have different facility codes or when two different reader technologies are used in the same system, each of which has a different facility code.

The SK-ACPE can be set to recognize up to sixteen different facility codes. To program multiple facility codes, follow the procedure above for programming a single facility code, but present a card with the second facility code (and additional facility codes if necessary) to the reader before the red/green LED indicator times out.

Note that it is not generally recommended to combine sets of cards with different facility codes, because the unit cannot distinguish between access cards having different facility codes and the same ID number. It is also important to distinguish between ID numbers and the facility code when programming. See Figure 1 for examples of the numbering location.

For example, if you have two sets of cards numbered 1-100, with facility codes 12345 and 23456, and you delete cards 1 - 10 from the reader’s internal “card list,” then cards 1 - 10 with either facility code will be denied entry at the reader.



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INSTALLATION

CAUTION SHOULD BE TAKEN NOT TO TOUCH CIRCUIT BOARD OR ELECTRONIC COMPONENTS PRIOR TO AND DURING INSTALLATION TO AVOID ELECTRO-STATIC DISCHARGE (ESD) DAMAGE.

INSTALLING THE SK-ACPE

1. Select a location for the SK-ACPE unit that is secure and sheltered from weather and extreme humidity. Choose a location that facilitates access to power and is reasonably close to the doors that are to be controlled (no further than 500 feet).
2. Using the unit as a template, mark on the mounting surface the location of the four mounting holes.
3. Install appropriate mounting hardware (anchors, retainers, etc.) to the mounting surface if necessary.
4. Screw #6 or #8 mounting screws into the top 2 mounting holes of the mounting surface, leaving about 1/4" clearance.
5. Place panel top key-way mounting holes over installed mounting screws and slide panel down.
6. Tighten top mounting screws.
7. Install two bottom mounting screws (see figure 2).
8. Route cables into the enclosure through knockouts in sides or back of box, being careful not to nick or scrape insulation on any rough edges.

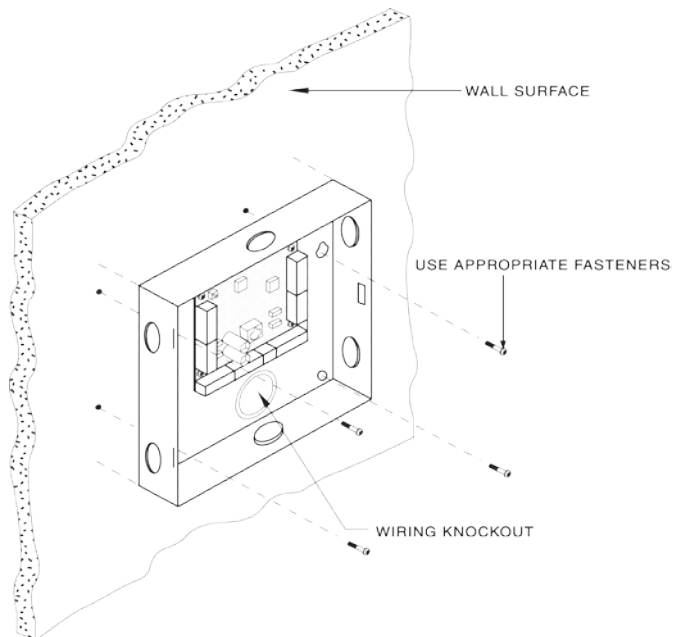
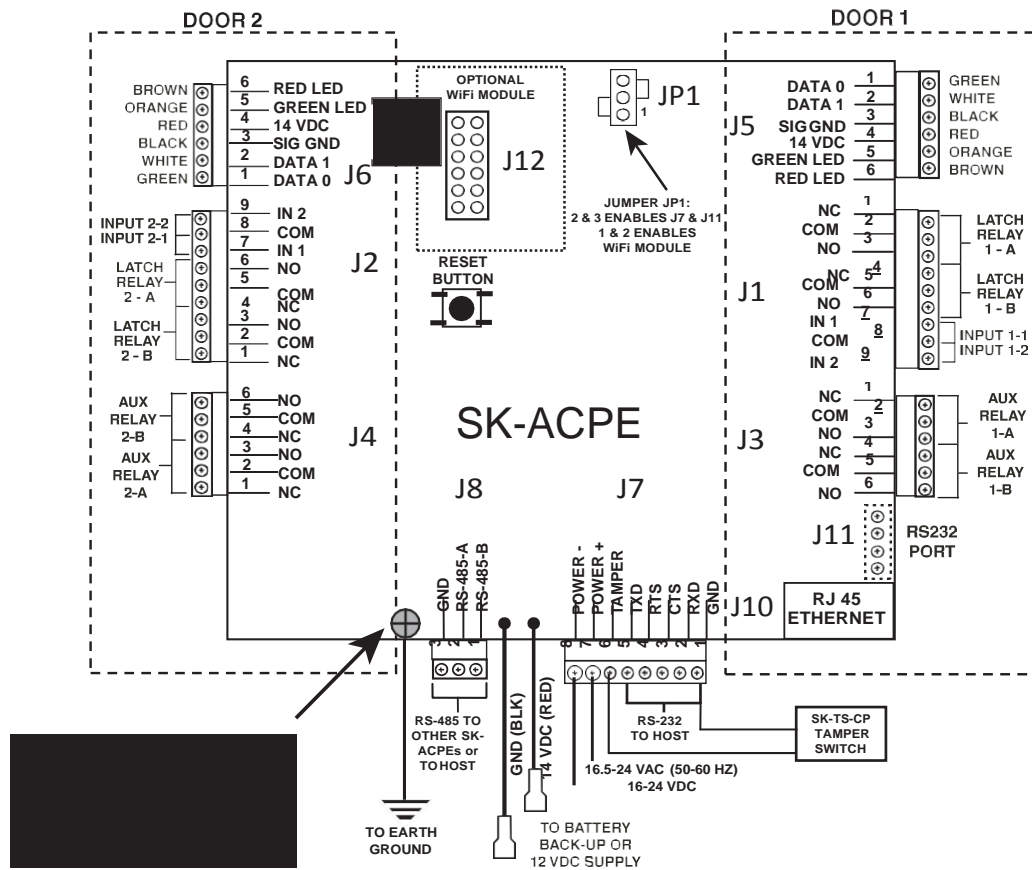


figure 2

WIRING

The SK-ACPE unit is organized so that the wiring for door #1 is on the right side of the panel and the wiring for door #2 is on the left side of the panel (see figure 3).



SECTION 08800 - GLAZING

PART 1 - GENERAL

- 1.1 THIS SECTION includes glass and glazing.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
 - C. Comply with recommendations of the latest edition of the "Glazing Manual" by Flat Glass Marketing Association, except where stricter requirements are otherwise indicated or recommended by product manufacturer.
 - D. Comply with applicable standards of the Woodwork Institute of California "Manual of Millwork," most recent edition.

1.3 SUBMITTALS

Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.

PART 2 - PRODUCTS

- 2.1 GLASS: Thicknesses listed below are minimum. Provide thickness as listed on the drawings or as determined by the CBC most recent edition with current State and local amendments, local code requirements or manufacturer's recommendations whichever is the thicker.
 - A. Primary Glass:
 - 1. Type: Type 1 - Transparent Glass, Flat.
 - 2. Class: Class 1 - Clear.
 - 3. Quality: q³ - Glazing select.
 - 4. Emissivity: Manufacturer's standard Low 'E' glazing units.
 - B. Tempered: Primary glass, fully tempered to 4x normal strength in accordance with ASTM C 1048; thickness as indicated above. Install fully tempered glass with waves horizontal.
 - C. Mirrors: 1/4" polished plate glass, silver quality, free from defects, sized as shown on drawings.
- 2.2 GLAZING MATERIALS:

- A. Provide all setting materials recommended by glass manufacturer.
- B. Install glass with glazing compound according to manufacturer's written Installation Instructions. Include all cleaning agents, glazing points, stops or other materials needed for complete and proper installation according to the manufacturer's printed Installation Instructions.
- C. Glass set in wood sash with putty and stops shall comply with W.I.C. Premium Grade Standards for glass.
- D. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Clean glazing channels, stops, and rabbets to receive the glazing materials, making free from obstructions and deleterious substances which might impair the work.
 - 1. Remove protective coatings which might fail in adhesion or interfere with bond of sealants.
 - 2. Comply with manufacturers' instructions for final wiping of surfaces immediately prior to application of primer and glazing compounds or tapes.
 - 3. Prime surfaces to receive glazing compounds in accordance with manufacturer's recommendations.

3.2 INSTALLATION

- A. Glaze in accordance with referenced standard and recommendations of window assembly manufacturer.
- B. Inspect each piece of glass immediately prior to start of installation.
 - 1. Do not install items which are improperly sized, have damaged edges, or are scratched, abraded, or damaged in any other manner.
 - 2. Do not remove labels from glass until so directed by the Architect.
 - 3. Install glass so distortion waves, if present, run in the horizontal direction.
- C. Locate setting blocks at sills one quarter of the width of the glass in from each end of the glass, unless otherwise recommended by the glass manufacturer.
 - 1. Use blocks of proper size to support the glass in accordance with the manufacturer's recommendations.
 - 2. Provide spacers to separate glass from stops; except where continuous glazing gaskets or felts are provided.

- a. Locate spacers no more than 24" apart, and no closer than 12" to a corner.
- b. Place spacers opposite one another.
- c. Make bite of space on glass 1/4" or more.

D. Miter-cut and seal the joints of glazing gaskets in accordance with the manufacturer's recommendations, to provide watertight and airtight seal at corners and other locations where joints are required.

3.3 SAFETY GLAZING:

- A. Hazardous locations; All glazed lights in hazardous locations as defined in the most recent edition of the CBC shall be tempered.
- B. Certain windows: All glazing in windows whose edge is within 12" horizontally of a door shall be tempered. All glazing whose lowest edge is less than 18" above the finished floor or walking surface shall be tempered.

3.4 PROTECTION, REPLACEMENT and CLEANING

- A. Protect glass from breakage after installation by promptly installing streamers or ribbons, suitable attached to the framing and held free from glass.
- B. Replace Glass which is broken or otherwise damaged just prior to substantial completion. Wash and polish glass inside and out just prior to owners acceptance.

3.5 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 09250 - GYPSUM BOARD

PART 1 - GENERAL

- 1.1 THIS SECTION includes gypsum wallboard and related work where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

- 1.2 QUALITY ASSURANCE:

QUALITY ASSURANCE:

- A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Comply with requirements of the most recent edition of GA-216 "Recommended Levels of Application and Finishing of Gypsum Board" published by the Gypsum Association, 810 First Street NE, #510, Washington, D.C. 20002
 - C. Comply with requirements of the most recent edition of GA-214 "Recommended Specifications of Gypsum Board Finish" published by the Gypsum Association, 810 First Street NE, #510, Washington, D.C. 20002.
- 1.3 SUBMITTALS:
Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.

PART 2 - PRODUCTS

- 2.1 GYPSUM BOARD:

- A. Type/Thickness: See Room Finish Schedule.
- B. Manufacturer: US Gypsum, Georgia Pacific.

- 2.2 ACCESSORIES:

- A. Corner and Edge Trim: Manufacturer's standard galvanized steel, beaded units with flanges for concealment in joint compound.
- B. Joint Compound, Tape, Miscellaneous Materials: As manufactured or recommended by gypsum board manufacturer for the application indicated.
- C. Screws: As recommended by gypsum board manufacturer.
- D. Sealant: Waterproof compound made or recommended by gypsum board manufacturer.

PART 3 - EXECUTION

- 3.1 COMPLY with applicable requirements of referenced quality standards, except where more detailed or more stringent requirements are indicated by the manufacturer.
- 3.2 WALL/PARTITION BOARDS: Install vertically to avoid butt end joints wherever possible. At high walls or other conditions where butt end joints are unavoidable, install boards horizontally with end joints staggered over studs.
- 3.3 SCREWING: As recommended by manufacturer.

- 3.4 TRIM:
 - A. Install metal corner beads at all exterior corners.
 - B. Install metal edge trim wherever edge of gypsum board would otherwise be exposed or semi-exposed.
- 3.5 SEALING: Fully seal all edges and penetrations through gypsum board in bathrooms, kitchen and other areas subject to moisture or water. Clean and pre-treat surfaces to receive sealant in accordance with manufacturer's instructions.
- 3.6 FINISHING:
 - A. All gypsum board surfaces to achieve Level 5 finish as per GA-214 specifications.
 - B. Apply treatment at all joints, trim flanges, penetrations and fasteners as required to provide smooth flat, true surface for painting.
- 3.7 WARRANTY: During the first year of occupancy, the Contractor shall inspect the gypsum board finish for cracks, nail pops and other finish imperfections and shall repair and repaint all such imperfections in the finish at no cost to the Owner.

SECTION 09610 - CONCRETE MOISTURE CONTROL SYSTEM FOR APPLIED FLOORING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section includes: Provision of concrete moisture and alkalinity control system to new and existing interior concrete surfaces scheduled to receive moisture sensitive floor coverings.
- B. Testing for concrete moisture-vapor emission and alkalinity levels.
 - 1. All testing to be conducted by Owners independent 3rd party testing lab. Conduct testing per ASTM F1869 and ASTM F 2170 standard.

1.2 QUALITY ASSURANCE:

- A. Building Code: California Building Code most recent edition with current State and local amendments.
- B. Source Limitations: Obtain specified products from one source from a single manufacturer with resources to provide products of consistent quality in appearance and physical properties without delaying the work.
- C. Manufacturer Qualifications: Company with minimum of 5 years in manufacturing modified polymer-based (non-silicate) concrete moisture-vapor emission and alkalinity control products, and capable of providing field service representation during construction. Company is to be the exclusive manufacture of specified moisture control system, underlayment primer and underlayment. Resellers are not permitted as to ensure single source responsibility of product utilized.
- D. Installer Qualifications: Manufacturer direct installation or certified applicator to have a minimum of 3 years of successful experience in applying concrete moisture-vapor emission control systems; all personnel trained and approved in writing by manufacturer.
 - 1. Provide certified installer certificate.
 - 2. Provide job history depicting installation experience and jobs completed. Provide a minimum of 5 projects of like scope and size.
 - 3. Provide copy of warranty request document to be submitted to moisture control system manufacturer for specified project.
- E. Regulatory Requirements: Comply with the rules of the governing air quality management district covering architectural coatings. Product shall meet volatile organic compound (VOC) requirements applicable at time of application.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's literature for each type of membrane including Manufacturer's technical data, MSDS, installation instructions for concrete moisture-vapor control system.

- B. Product Performance Test Reports: From a qualified independent testing agency indicating concrete moisture-vapor control system complies with specified performance requirements for ASTM E96, D1308, D4541 and V.O.C. Content.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials in a dry, secure area protected from exposure to harmful weather conditions and at temperature levels as recommended by manufacture

1.5 PROJECT CONDITIONS

- A. Conduct moisture-vapor emissions, relative humidity and alkalinity testing within temperature and conditions as recommended per ASTM F 1869 and F 2170 standards.
- B. Environmental Limitations: Comply with concrete moisture-vapor control system manufacturer's written instructions for substrate temperature, ambient temperature, humidity, ventilation, and other conditions affecting system installation.
- C. Close spaces to traffic during application of concrete moisture-vapor control system and for not less than 12 hours afterwards, unless manufacturer recommends longer period.

1.6 WARRANTY

- A. Extended Warranty: Written warranty as provided by manufacturer against failure of finish flooring system due to excess concrete moisture-vapor emission and alkalinity. Warranty is to include replacement of finish flooring material, flooring adhesive, concrete moisture-vapor control system, and all associated labor costs.
 - 1. Warranty Period: Minimum 10 years. Coverage includes the following:
 - a. Manufacturing defects.
 - b. Warranty to be additionally signed by certified applicator for Installation defects and workmanship.
 - c. Single-source warranty for systems consisting of moisture control barrier and underlayment by one manufacturer when utilized.

PART 2 - PRODUCTS

2.1 CONCRETE VAPOR EMISSION CONTROL SYSTEM

- A. Products: Subject to compliance with requirements, provide one of the following Systems:
 - 1. Vapor Emission System: "Vapor-Green FC"
by Advanced Moisture Control, Inc.,
www.vaporsafe.com, (949) 788-1490
- B. Moisture-Vapor Control System: Two-component, synthetic polymer chemistry capable of meeting specified performance requirements.

1. Microbial Resistance: Polymer formulation shall be resistant to the growth of mold, mildew and micro-organisms.
2. Environmental Properties: Non-corrosive, non-marine pollutant, non-flammable and Shall not contain harmful fumes or vapors when in a wet mixed or unmixed state.
3. Compatibility: All floor finishes, adhesives and primers.
4. Physical Properties:

Physical Property	Test Method	Acceptable Value
Concrete Adhesion	ASTM D4541	Min. 500 psi
Water Vapor Trans.	ASTM E96	Min. 85% Reduction
Alkali & Acid Resistance	ASTM D4541	14pH, No effect
Volatile Organic Content	EPA Method24	70 g/liter or less
Hydrostatic Pressure		.45 psi
Relative Humidity	ASTM F2170	Resistant to 100%

5. Acrylic, latex, silicate formulations, moisture tolerant adhesives, and other single-component products are not acceptable.

2.2 MOISTURE TEST KITS

A. Calcium Chloride, Relative Humidity and pH Testing kits.

1. Moisture-Vapor Emission: Prepackaged anhydrous calcium chloride test kits conforming to requirements of ASTM F 1869.
2. Alkalinity: Concrete pH test using calibrated digital 1 – 14 wide range pH meter to determine alkalinity level in accordance with ASTM F 710.
3. Relative Humidity: Relative humidity concrete moisture testing equipment that conforms to ASTM F 2170 standard.

2.3 ACCESSORY MATERIALS

A. Cement Overlay: Portland cement-based cement compound, compatible with flooring adhesive for scheduled finish flooring material, and applied to areas as recommended by moisture control manufacturer. Gypsum based products are not acceptable. Minimum underlayment cured strength: 4100 psi.

1. Cementitious Underlayment: “Syment SC”
by Advanced Moisture Control, Inc.
www.vaporsafe.com , (949) 788-1490

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Pre installation Moisture Testing: Conduct pre installation concrete moisture-vapor emissions, relative humidity and alkalinity testing of existing concrete slabs, on all interior concrete slab areas to receive finish flooring.

- B. Examine concrete substrates, with Installer present, for compliance with requirements for installation of concrete moisture-vapor and alkalinity control system. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Preparation: Scarify concrete slab surfaces to receive system treatment by mechanical means as recommended by manufacturer of moisture-control system (no exceptions). Acid etching is not allowed. Treat surface irregularities after application of moisture vapor emission control system with approved manufacturers cement underlayment material.
- B. Cleaning Surfaces: Remove all defective material and foreign matter such as dust, adhesives, leveling compounds, paint, dirt, floor hardeners, bond breakers, oil, grease, curing agents, form release agents, efflorescence, laitance, metal shot, drywall mud, crack and joint compounds, etc. Use of an industrial auto-scrubber may be necessary on prepared slabs with excess dust.
- C. Crack and Joint Preparation: Vacuum, clean and seal all cracks and joints with moisture-control system. Utilize a paint brush to coat the interior walls of the prepared crack, and then fill with a flexible sealant recommended by manufacturer.

3.3 APPLICATION

- A. Coordinate with work of Section 09650-Resilient Flooring.
- B. Apply system in accordance with manufacturer's written instructions. Saturate concrete surfaces, cracks, and joints.
 - 1. Apply vapor barrier by squeegee and roller application to saturate concrete surfaces.
 - 2. Conform with manufacturer's requirements for coverage rates and number of applications as needed to meet specified performance requirements.

3.4 FIELD QUALITY CONTROL

- A. Conduct post-installation moisture testing for moisture-vapor emissions and alkalinity, at areas receiving concrete moisture-vapor control system. Verify the following results:
 - 1. Maximum moisture levels of 3.0 lbs per 1000 sq ft per 24 hours or less
- B. If test results do not meet specified levels, apply additional moisture-vapor emission control material, or take other corrective action as recommended by manufacturer of concrete moisture-vapor control system to meet requirements at no additional cost to Owner. Retest and take corrective action, at no additional cost to Owner, until test results meet the specified results.

3.5 PRIMER AND CEMENT OVERLAY

- A. After application and curing of moisture-vapor control material, and post-installation moisture testing with satisfactory results is complete, install manufacturer recommended primer and cement overlay at areas to receive resilient finish flooring materials. Install to minimum thickness required to provide a smooth and continuous substrate suitable to receive finish flooring as necessary.

3.6 PROTECTION

- A. Protect moisture-vapor control system, and cementitious underlayment, from damage and surface moisture, during time prior to installation of finish flooring materials.

SECTION 09650 - RESILIENT FLOORING**PART 1 - GENERAL**

- 1.1 THIS SECTION includes provision and installation of resilient flooring and accessories where shown on the Drawings, as specified herein, and as needed for a complete and proper installation, including, but not limited to:
 - A. Mendocino County has selected specific flooring products and adhesives as county standards to ensure uniformity in our maintenance and replacement programs. Unless specifically stated, no other products will be accepted.
 - B. Preparation of slab surface.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. All resilient flooring and base shall meet or exceed the requirements of ASTM E-84-70 for flame spread, fuel contribution and smoke density.
 - C. All resilient flooring and base shall be of the same mill run. Normal manufacturing tolerances on colors are acceptable.
 - D. Fire Test Performance: When tested in accordance with ASTM E648, Flooring Radiant Panel Test, resilient flooring shall have a Critical Radiant Flux of not less than 0.45-watts per sq. cm. When tested in accordance with ASTM E662 resilient flooring shall develop a smoke density less than 450.
 - E. Installers Qualifications: A minimum of three installations of an extent comparable to that of this Project.
 - F. All materials shall comply with the requirements of Air Quality Management District (AQMD) Rule 1168 governing the emission of Volatile Organic Compounds.
- 1.3 SUBMITTALS:
 - A. Product data: Within 60 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 2. Four 12" x 12" samples of sheet flooring, and accessories of each type, color, and pattern required in the specified grades from the proposed manufacturers;
 3. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.
 - B. Seaming Diagram: Submit a seaming diagram for all seams proposed in sheet products.

- C. Maintenance Practices: Two copies of manufacturer's recommended cleaning and maintenance procedures, materials and suggested schedule for cleaning, stripping and re-waxing.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.
- B. Flooring material in anyone room or area shall be from one manufacturer's run. Containers shall be clearly marked with run number.
- C. Store all materials at the job site at a minimum temperature of 70 degrees F. for not less than 72 hours before installation.
- D. Materials shall not be delivered to the site until they can be stored and installed in a closed in, air-conditioned space

1.5 TESTING

- A. Water Vapor Emission: Calcium Chloride testing meeting the requirements of ASTM F1869 to yield 3 lb. water vapor emission rate (maximum).
- B. Relative Humidity: Relative Humidity testing meeting the requirements of ASTM F2170 to yield moisture content of:
 - 1. Internal Testing: 85% (maximum).
 - 2. Surface Testing: 75% (maximum).

PART 2 - PRODUCTS

2.1 COUNTY STANDARD FLOORING PRODUCTS

- A. Resilient tile shall be the county standard product, Armstrong Standard Excelon vinyl 12" x 12" x 1/8" Imperial Texture, Pearl White #51803 unless color selection is noted on the plans. No substitutions.
- B. Slip resistant tile shall be the county standard product, Armstrong Safety Zone Slip-retardant vinyl 12" x 12" x 1/8", Stone Beige #57005 where specified unless color selection is noted on the plans. No substitutions.
- C. Seamless flooring shall be the County standard Armstrong Connection Corlon Inlaid Sheet Vinyl. Color selection shall be 88713 unless noted otherwise No substitutions.
- D. Carpet shall be the county standard, Shaw Contract Group. Style Name: Charisma, Style Number 59561, Carpet Tiles, color; legend, unless color selection is noted on the plans. No substitutions.
- E. Resilient base shall be the county standard Burke Base Thermoset Rubber type TS wall base, 4" coved, 523 brown black. No substitutions.
- F. Edge strips shall be Mercer or equal, color as selected. Reducer to be Mercer Stock No. 73A.

- G. Underlayment as needed or required to assure a quality blemish-free installation per the manufacturer's recommendation.
- H. Adhesives. The following adhesive products have been selected as the county standard products for installing any of the above flooring products. No substitutions.
 - 1. Vinyl Tile adhesive shall be Mapei Ultrabond ECO 300 Professional Solid Vinyl Flooring Adhesive.
 - 2. Carpet adhesive shall be Mapei Ultrabond ECO 85 Standard Quick-Grab Carpet Adhesive.
 - 3. Resilient base adhesive shall be Mapei Ultrabond ECO 575 Premium Wall Base Adhesive.
- I. Concrete Sealer: Under all resilient flooring products. See Specification Section 09610 - Concrete Moisture Control System for Applied Flooring.
- G. Cleaning and Curing compounds: as recommended by manufacturer.
- H. Other Materials: Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

- 3.1 TESTING: Perform testing for Moisture Vapor Emission and Relative Humidity on a slab floor areas scheduled to receive resilient flooring. Do not install any flooring until testing results meet the requirements of Paragraph 1.6 of this Section. Contractor must provide test reports certifying that required test results have been achieved prior to commencing installation of resilient flooring.
- 3.2 IF NECESSARY, REMEDIATE excess vapor emission or moisture content identified by testing procedures using methods approved in advance by the flooring manufacturer.
- 3.3 RETEST after remediation work and obtain testing results with acceptable results before installation of resilient flooring. Contractor must provide test reports certifying that required test results have been achieved prior to commencing installation of resilient flooring.
- 3.4 SURFACE CONDITIONS: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
 - A. Depressions and projections that may be visible in the finished work shall be filed and removed. Foreign matter that may destroy bond shall be removed.
 - B. Starting of work by flooring contractor will be considered as acceptance of existing conditions as suitable for his work.

3.5 JOB CONDITIONS

- A. Environmental Requirements: Maintain the temperature in spaces to receive resilient flooring materials between 70-deg. F. and 90-deg. F. for a minimum of 48-hours prior to, curing, and after installation. After installation, maintain a minimum temperature of 55-deg. F.
- B. Flooring shall not be laid until a sufficient length of time has elapsed after the heat has been turned on to insure that the moisture in or under the slab has vaporized sufficiently that the installation will not be affected.
- C. Install resilient flooring and accessories after other finishing operations have been completed.
- D. Do not install over uncured concrete slabs.
- E. Provide for continuous ventilation during installation using as close to 100-percent outside air as possible.
- F. Use adhesives in strict accordance with manufacturer's recommendations, and ventilate area with maximum outside air for a period of not less than 48-hours after installation.

3.6 PREPARATION

- A. Verify that substrate is smooth, level, at required finish elevation and without more than 1/8" in 10'-0" variation from level or slopes shown on the Drawings.
- B. Verify that sub-surfaces are clean, dry, and free of grease, construction films, and other coatings that would interfere with adhesive or smoothness of finish flooring.
- C. Prior to laying materials, clean the surfaces to be covered, and inspect the subfloor. Wash, broom clean or vacuum surfaces to be covered with vinyl flooring as per the recommendations of the manufacturer's installation instructions, and inspect subfloor. Clean and inspect wall surfaces scheduled to receive rubber base as per the recommendations of the manufacturer's installation instructions.
- D. Apply, trowel, and float filler to leave a smooth, flat, hard surface.
- E. Prohibit traffic from area until filler is cured.
- F. Vacuum clean substrate.
- G. Apply concrete slab primer, if recommended by resilient-flooring manufacturer and adhesive manufacturer. Apply according to manufacturer's recommendations.
- H. Provide concrete sealer as listed in Paragraph 2.3 of this Section at all concrete slab areas to receive resilient flooring. Apply per manufacturer's recommendations.

3.7 INSTALLATION - GENERAL:

- A. Install materials only after finishing operations, including painting, have been completed and after permanent heating system is operating.

- B. Verify that moisture content of concrete slabs, building air temperature, and relative humidity are within the limits recommended by the manufacturers of the materials used.
- C. Maintain reference markers, holes, and openings that are in place or plainly marked for future cutting by repeating on the finish surface as marked in the sub-floor. Use chalk or other non-permanent marking device.

3.8 APPLICATION OF ADHESIVES

- A. Mix and apply adhesives in accordance with manufacture's instructions.
- B. Provide safety precautions during mixing and applications as recommended.

3.9 INSTALLATION OF SHEET FLOORING

- A. Lay sheet flooring to provide as few seams as possible, with pattern parallel to building lines to produce symmetrical pattern. Match edges for color shading and pattern at seams in compliance with manufacturer's recommendations.
- B. Adhere sheet flooring to substrate using method approved by flooring manufacturer for type of sheet flooring specified and substrate condition encountered.
- C. Prepare seams in vinyl sheet flooring in accordance with manufacturer's instructions for most inconspicuous appearance, sealing continuously with fluid-applied sealant or adhesive as standard with manufacturer.
- D. Provide integral flush cove base, 4" or 6" per Finish Schedule. Minimum radius 3/4". Provide cove support strip and metal top edge strip. Construct cove base in accordance with manufacturer's instructions.

3.10 INSTALLATION OF HEAT WELDED SEAM FLOORING

Install welded seam flooring to minimum of 1/3 full material width and with sheet parallel to length of room. Double cut sheet and continuously seal. Heat weld seams with color coordinated rod material in accordance with manufacturer's recommendations by experienced and competent installers.

3.11 INSTALLATION OF CONCRETE SEALER

Under the provisions of Specification Section 09610 - CONCRETE MOISTURE CONTROL SYSTEM FOR APPLIED FLOORING.

3.13 PROTECTION

Prohibit traffic on floor finish for 48 hours after installation.

- 3.14 DEFECTIVE WORK: Tile out of square, varying in dimension or color, cracked, broken defaced, pitted or soft-surfaced; or containing foreign matter will be considered as defective material. Material bleeding, loosening, or curling, inaccurate alignment or mismatching, will be considered as defective workmanship. Remove and replace all such defective work at no additional cost to the Owner.

- 3.15 **CLEAN UP:** After work is otherwise complete, mop and scrub floors clean, free of dirt, excessive adhesive, foreign matter, and other blemishes from exposed surfaces, using neutral cleaner recommended by the manufacturer of the resilient materials. Do not wax floors. Remove from the site all debris and waste resulting from work under this Section. Provide and maintain adequate protection of floor tile by covering with clean sheathing paper, or similar approved means until building is accepted by the Owner.
- 3.16 For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all cleaning agents, bonding agents, underlayment, fasteners, adhesives, mounting devices, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- 3.17 **WARRANTIES:** At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 09900 - PAINTING

PART 1 - GENERAL

- 1.1 THIS SECTION includes painting and finishing of all exposed interior and exterior surfaces where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- A. Definitions:
1. "Paint," as used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.
- B. Work included: Unless specifically noted otherwise, provide paint finish system for all building elements which are exposed to view in the completed Work.
- C. Work not included:
1. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred places, foundation spaces, utility tunnels, pipe spaces, and duct shafts.
 2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting under this Section except as may be so specified.
 3. Do not paint moving parts of operating units; mechanical or electrical parts such as valve operators; linkages; sensing devices; and motor shafts, unless otherwise indicated.
 4. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature.
- 1.2 QUALITY ASSURANCE:
- A. Building Code: California Building Code most recent edition with current State and local amendments.
- B. Paint coordination:
1. Provide finish coats which are compatible with the prime coats actually used.
 2. Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
 3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
 4. Provide barrier coats over noncompatible primers, or remove the primer and reprime as required.
 5. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime coatings supplied under other Sections.
- 1.3 SUBMITTALS:
- A. Provide Manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.
- B. Provide Manufacturer's recommended Installation Instructions and Finish System Specifications for use on each surface type scheduled to receive finishes. Maintain copy of Finish System Schedule at job site.

1.4 JOB CONDITIONS

- A. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45 degrees F. Unless otherwise permitted by the manufacturers' printed instructions as approved by the Architect.
- B. Weather conditions:
 - 1. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85%; or to damp or wet surfaces unless otherwise permitted by the manufacturers' printed instructions as approved by the Architect.
 - 2. Applications may be continued during inclement weather only within the temperature limits specified by the paint manufacturer as being suitable for use during application and drying periods.

1.5 EXTRA STOCK

- A. Upon completion of the Work of this Section, deliver to the Owner any extra stock equaling 10% of each color, type, and gloss of paint used in the Work, tightly sealing each container, and clearly labeling with contents and location where used.

PART 2 - PRODUCTS

2.1 SCOPE:

- A. Provide all products required for finishes described on Exterior Elevations of the drawings for exterior of building, as described in the Interior Room Finish Schedule of the Drawings for interior finishes or as required to fully coat and protect all exposed interior and exterior surfaces.
- B. Where no finish is specified for exposed surfaces on Exterior Elevations or Room Finish Schedule, use the finish system listed in the Painting Schedule in Part 2 of this Section which is specified for the type of material to be covered. Where the material to be covered is not listed in Part 2 of this Section, provide a paint finish system for the material which is recommended for use on that material as manufactured by the approved paint Manufacturer.

2.2 MANUFACTURERS

- A. Interior and Exterior Paint: Benjamin Moore or equivalent products of other manufacturers.
- B. Exterior Stain: Benjamin Moore or equivalent products of other manufacturers.
- C. Interior Lacquer Finish: U.S. Cellulose or equivalent products of other.
- D. Exterior Oil Finish: Benjamin Moore or equivalent products of other manufacturers.

2.3 UNDERCOATS and THINNERS:

- A. Provide undercoat paint produced by the same manufacturer as the finish coat.
- B. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits.
- C. Insofar as practical, use undercoat, finish coat, and thinner materials as parts of a unified system of paint finish.

2.4 FINISH COLORS:

A. Architect will select all finish top coat colors from the full range of the paint manufacturer's color line. A maximum of three exterior and four interior colors will be specified. Contractor may provide paint systems using one of the following options:

1. Use paint system of the manufacturer whose color was selected.
2. Specially mix the color chosen by Architects approval.

B. Interior Colors: To be chosen.

C. Exterior Colors: To be chosen.

2.5. APPLICATION EQUIPMENT

A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint, and as approved by the Architect.

Prior to use of application equipment, verify that the proposed equipment is actually compatible with the material to be applied, and that integrity of the finish will not be jeopardized by use of the proposed equipment.

2.6 FINISH SYSTEMS (Note: Paint Finish Systems referenced in this Schedule are products of Benjamin Moore Paint unless noted otherwise. Equivalent Paint Systems of other paint manufacturers will be considered for substitution.)

FINISH No. H-1

Clear Oil Finish for exposed Redwood decks and railings, wood siding or trim not scheduled for stain or paint finish. (Benjamin Moore C323-10product)

3 coats clear Benjamin Moore or equivalent penetrating oil finish. (Note: backprime all surfaces to receive clear oil finish prior to installation.)

FINISH No. H-2

Stain Finish for exterior siding and trim

1 coat 637-XX Benjamin Moore Arborcoat Semi-Transparent Stain

or

1 coat 640-XX Benjamin Moore Arborcoat Solid Coat Stain.

FINISH No. H-3

Opaque finish for exterior wood surfaces, Satin Finish

1 coat 023 Fresh Start Exterior Wood Primer

2 coats N103-XX Moorgard Low Lustre House Paint

FINISH No. H-4

Opaque finish for exterior wood surfaces, Semi-Gloss Finish

1 coat 023 Fresh Start Exterior Wood Primer

2 coats N096-XX Moorglo Soft Gloss House Paint

FINISH No. H-5

Painted finish for exposed ferrous metal

1 coat P06 Super Spec HP Alkyd Metal Primer

2 coats P29 DTM Acrylic Semi-Gloss

FINISH No. H-6

Painted finish for exposed galvanized metal: pretreatment as recommended by Manufacturer.

1 coat P04 Super Spec HP Latex Metal Primer

2 coats P29 DTM Acrylic Semi-Gloss

FINISH No. H-7

Opaque for gypsum board, flat finish, latex.

1 coat 372 Eco Spec WB Primer 0 VOC

2 coats N373 Eco Spec WB Flat 0 VOC

FINISH No. H-8

Opaque for gypsum board in bathrooms, kitchen, utility rooms, semi-gloss finish, latex.

1 coat 372 Eco Spec WB Primer 0 VOC

2 coats 376 Eco Spec WB Semi-Gloss 0 VOC

FINISH No. H-9

Opaque for wood paneling, wood trim, doors and cabinets, semi-gloss finish, acrylic latex.

1 coat 372 Eco Spec WB Primer 0 VOC

2 coats 376 Eco Spec WB Semi-Gloss 0 VOC

FINISH No. H-10

Clear Finish for interior wood surfaces

2 coats 422-00 Stays Clear Gloss

Or

2 coats 423-00 Stays Clear Satin

FINISH No. H-11

Clear Lacquer finish for interior cabinets, paneling and trim.

1 coat S157 Mac Lac Sanding Sealer

2 coats F231 Mac Lac High Solid Satin Clear

FINISH No. H-12

Stain and Lacquer finish for interior cabinets, paneling and trim.

1 coat 0234-XX Benwood Penetrating Stain

2 coats F231 Mac Lac High Solid Satin Clear

FINISH No H-13

Clear Urethane finish on wood floors, doors and trim.

2 coats 422-00 Stays Clear Acrylic Polyurethane Gloss

Or

2 coats 423-00 Stays Clear Acrylic Polyurethane Satin

FINISH No H-14

Stain and Urethane finish on wood floors, doors and trim.

1 coat 234-XX Benwood Penetrating Stain

2 coats 422-00 Stays Clear Acrylic Polyurethane Gloss

Or

2 coats 423-00 Stays Clear Acrylic Polyurethane Satin

FINISH No H-15

Clear Marine Spar Varnish on wood floors, countertops, doors and trim.

1 coat 650-08 Master Marine Spar Varnish (thinned 10%)

2 coats 650-08 Master Marine Spar Varnish

FINISH No. H-16

Clear Oil Finish for ceilings, beams and wood trim.

1 coat 50% Turpentine and 50% Boiled Linseed Oil

1 coat 25% Turpentine and 50% Boiled Linseed Oil

FINISH No. H-17

Oil Finish for Butcher Block Countertops

3 coats sterile mineral oil.

FINISH No. H-18

Wallpaper wall covering

Follow Manufacturer's Instructions for wall surface treatment and wallpaper installation.

FINISH No. H-19

Sealer over ceramic tile and stonework.

Obtain information for each tile or stone product used in the job from the Manufacturer of the product. Apply Manufacturer's recommended sealer product or products using the methods recommended by the Manufacturer. Provide sealer products to satisfy recommended coverages and thicknesses for each application.

Follow sealer manufacturer's written installation instructions for each product and application.

FINISH No. H 20

Opaque for gypsum board, eggshell finish acrylic latex.

1 coat 372 Eco Spec WB Primer 0 VOC

2 coats 374 Eco Spec WB Eggshell 0 VOC

2.4 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 MATERIALS PREPARATION

A. General:

1. Mix and prepare paint materials in strict accordance with the manufacturers' recommendations as approved by the Architect
2. When materials are not in use, store in tightly covered containers.
3. Maintain containers used in storage, mixing, and application of paint in clean condition, free from foreign materials and residue.

B. Stirring:

1. Stir materials before application, producing a mixture of uniform density.
2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain the material before using.

3.3 SURFACE PREPARATION

A. General

1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations as approved by the Architect.
2. Remove removable items which are in place and are not scheduled to receive paint finish; or provide surface-applied protection prior to surface preparation and painting operations.
3. Following completion of painting in each space or area, reinstall the removed items by using workmen who are skilled in the necessary trades.
4. Clean each surface to be painted prior to applying paint or surface treatment.
5. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200 degrees F, prior to start of mechanical cleaning.
6. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet newly painted surfaces.

B. Preparation of wood surfaces:

1. Clean wood surfaces until free from dirt, oil, and other foreign substance.
2. Smooth finished wood surfaces exposed to view, using the proper sandpaper. Where so required, use varying degrees of coarseness in sandpaper to produce a uniformly smooth and unmarred wood surface.

3. Unless specifically approved by the Architect, do not proceed with painting of wood surfaces until the moisture content of the wood is 12% or less as measured by a moisture meter approved by the Architect.
4. Trim and Siding: Back prime all trim and siding which is to receive paint, clear oil, or stain finish with one coat of sealant or stain as noted in the Finish System. Prime all edges and cut ends of trim and siding prior to installation.

C. Preparation of metal surfaces:

1. Thoroughly clean surfaces until free from dirt, oil and grease.
2. On galvanized surfaces, use solvent for the initial cleaning, and then treat the surface thoroughly with phosphoric acid etch recommended by Paint System manufacturer. Remove etching solution completely before proceeding.
3. Allow to dry thoroughly before application of paint..

3.4 PAINT APPLICATION

A. General

1. Touchup shop-applied prime coats which have been damaged, and touchup bare areas prior to start of finish coats application.
2. Slightly vary the color of succeeding coats.
 - a. Do not apply additional coats until the completed coat has been inspected and approved.
 - b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.
4. On removable panels and hinged panels, paint the back sides to match the exposed sides.

B. Drying

1. Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.
2. Do not proceed with initial painting or application of subsequent coats until surfaces to be coated are completely dry and prepared to receive the specified finish.

C. Brush applications

1. Brush out and work the brush coats onto the surface in an even film.
2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.

D. Spray application

1. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.
2. Do not double back with spray equipment to build up film thickness of two coats in one pass.

E. For completed work, match the approved Samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.

F. Miscellaneous surfaces and procedures:

1. Exposed mechanical items:

- a. Finish electric panels, access doors, conduits, pipes, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces, or as directed.
- b. Paint visible duct surfaces behind vents, registers, and grilles flat black.
- c. Wash metal with solvent, prime, and apply two coats of semi-gloss enamel.

2. Exposed pipe and duct insulation:

- a. Apply one coat of latex paint on insulation which has been sized or primed under other Sections; apply two coats on such surfaces when unprepared.
 - b. Match color of adjacent surfaces.
 - c. Remove band before painting, and replace after painting.
 3. Hardware: Paint prime coated hardware to match adjacent surfaces.
 4. Wet areas:
 - a. In toilet rooms and contiguous areas, add an approved fungicide to paints.
 - b. For oil base paints, use 1% phenolmercuric or 4% tetrachlorophenol.
 - c. For water emulsion and glue size surfaces, use 4% sodium tetrachlorophenate.
 5. Interior: Use "stipple" finish where enamel is specified.
 6. Exposed vents: Apply two coats of heat-resistant paint approved by the Architect.
 7. Touch up all damaged surfaces prior to final acceptance.
- 3.5 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 10400 - IDENTIFYING DEVICES

PART 1 - GENERAL

- 1.1 THIS SECTION includes all IDENTIFYING DEVICES where shown on the Drawings, as specified herein, and as required by governmental agencies having jurisdiction, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Electrical Code: California Electrical Code most recent edition with current State and local amendments.
 - C. Fire Code: California Fire Code most recent edition with current State and local amendments.
 - D. Handicapped Accessibility Requirements: The proposed facility shall conform to all requirements for handicapped accessibility as set forth in the editions of the Title 24 Handicapped Accessibility Standards of the California Administrative Code, and the Federal Americans with Disabilities Act in effect at the time of construction.
- 1.3 SUBMITTALS:
 - A. Provide Manufacturer's Literature describing all new manufactured products proposed for inclusion in the Work of this Section.
 - B. Samples: Provide one full size sample of each type of Identifying Device specified in this Section depicting size, lettering and color. Obtain approval of Architect prior to fabricating Identifying Devices.

PART 2 – PRODUCTS

- 2.1 GENERAL:
 - A. When new or additional signs and/or identification devices are provided, or when existing signs and/or identification devices are replaced or altered, the new or altered signs and/or identification devices shall comply as detailed.
 - B. All signs shall conform to the regulations concerning character proportion, pictograms, finish and contrast, and illumination levels and all other requirements contained in the Federal Americans with Disability Act.

- C. All Handicapped Accessible spaces shall display the international symbol of accessibility in the size, location, and position required by the above referenced Handicapped Accessibility Standards.
- D. Type Style: Helvetica Medium
- E. Message Type Size: Conform to the regulations contained in the above referenced Handicapped Accessibility Standards as indicated in the drawings.
- F. Numeral Type Size: Conform to the regulations contained in the above referenced Handicapped Accessibility Standards or as indicated in the drawings.
- G. Plaque color: Blue, equal to color No. 15090 in Federal Standard 595b.
- H. Type or numeral color: White.
- I. Sign material: Plastic
- J. Mounting: Double-sided 1/32" thick vinyl tape, silastic adhesive, or screw mounting, depending on mounting surface.
- K. The INTERNATIONAL SYMBOL OF ACCESSIBILITY shall be the standard used to identify facilities that are accessible to and usable by individuals with disabilities. Elements and spaces of accessible facilities which shall be identified by the International Symbol of Accessibility are:
 - 1. Accessible parking spaces.
 - 2. Accessible building entrance.
 - 3. Accessible sanitary facilities.
- L. COLOR OF SYMBOL: The International Symbol of Accessibility shall consist of a white figure on a blue background. The blue shall be equal to color No. 15090 in Federal Standard 595b.
- M. SIGNAGE AND STRIPPING AT ACCESSIBLE PARKING SPACES: Each parking space reserved for persons with disabilities shall be identified by a reflectorized sign permanently posted immediately adjacent to and visible from each stall or space, consisting of the International Symbol of Accessibility and have required surface stripping.
- N. EXTERIOR ROUTE SIGNAGE LEADING TO ENTRANCES: At every primary public entrance and at every major junction along or leading to an accessible route of travel, there shall be a sign displaying the international symbol of accessibility. Signs shall indicate the direction to accessible building entrances and facilities and shall comply with the requirements for directional and informational signage. See applicable requirements below.

- O. ENTRANCE SIGNS: All building entrances that are accessible to and usable by persons with disabilities shall be identified with at least one International Symbol of Accessibility and with additional directional signs, utilizing the symbol, at junctions, to be visible to persons along approaching pedestrian ways.

2.2 SITE ENTRANCE SIGNAGE:

- A. Warning signage regarding unauthorized use of disabled parking spaces shall be posted conspicuously at each entrance to off-street parking facilities, or immediately adjacent to and visible from each stall or space.
- B. Warning signage shall state: "Unauthorized vehicles parking in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed away at owner's expense. Towed vehicles may be reclaimed at (to be determined) by telephone (to be determined)".
- C. Blank spaces on sign shall be filled in with appropriate information as a permanent part of the sign.
- D. Size of lettering on signage is a minimum of 1" in height.
- E. Sign(s) is not less than 17" x 22" in size.

2.3 TACTILE EXIT SIGNAGE:

- A. Provide new 6" x 6" tactile exit signs at all accessible exterior exit doors.
- B. Tactile exit signage where provided or elsewhere required shall have the following attributes:
 - 1. Each grade-level exterior exit door shall be identified by a tactile sign with the word, "EXIT."
 - 2. Letters on signs are raised 1/32", sans serif uppercase characters and are accompanied by Grade 2 Braille.
 - 3. Raised characters are between 5/8" and 2" high.
 - 4. Braille dots are 1/10" on center in each cell with 2/10" space between cells, measured from the second column of dots in the first cell to the first column of dots in the second cell.
 - 5. Braille dots are raised a minimum of 1/40" above the background.

6. Characters, symbols and background of signs is eggshell, matte, or other non-glare finish.
7. Characters and symbols contrast with their background (light characters on a dark background, or dark characters on a light background.)
8. Letters and numbers on signs have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10.
9. Signs are installed on the wall adjacent to the latch side of the door. At double leaf doors and when there is no wall space at the latch side, signs shall be placed on the nearest adjacent wall, preferably on the right.
10. Mounting height is 60" from the finish floor to the centerline of the sign.
11. Mounting location allows a person to approach within 3" of the signage without encountering protruding objects or standing within the swing of a door.

2.4 OTHER SIGNAGE:

- A. Remove and reinstall existing signs as directed by the Owner, as specified herein, as required by governmental agencies having jurisdiction, or as needed for a complete and proper installation.
- B. Building Identification Signage shall be stock fabricated 8-1/2" tall painted aluminum letters mounted over new siding with neoprene washers at each corner. Font to be selected by the Architect; Text shall be:
LITTLE RIVER AIRPORT

PART 3 - EXECUTION

- 3.1 **INSTALLATION:** For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specification using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.

- 3.2 MOUNT all signs firmly into position, level, plumb and square with all surfaces to which they are attached.
- 3.3 WARRANTIES: At the conclusion of the job, the Contractor shall deliver to the Owner full Manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 10522 - FIRE EXTINGUISHERS AND CABINETS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. THIS SECTION includes all fire extinguishers, mounting brackets, cabinets and accessories where shown on the drawings, as specified herein, and as needed for a complete and proper installation.

1.2 QUALITY ASSURANCE

- A. Conform to NFPA 10 - Portable Fire Extinguishers for extinguishers and fire blankets.
- B. Building Code: California Building Code most recent edition with current State and local amendments.
- C. Handicapped Accessibility Requirements: The proposed facility shall conform to all requirements for handicapped accessibility as set forth in the editions of the Title 24 Handicapped Accessibility Standards of the California Administrative Code, and the Federal Americans with Disabilities Act in effect at the time of construction.
- D. Provide fire extinguishers, cabinets and accessories from a single manufacturer.

1.3 SUBMITTALS

- A. Submit product data under provisions of Section 01340.
- B. Include physical dimensions, operational features, color and finish, wall mounting brackets with mounted measurements, anchorage details, rough-in measurements, location, and details.
- C. Submit manufacture's installation instructions under provisions of Section 01340.

1.4 OPERATION AND MAINTENANCE DATA

- A. Submit manufacture's operation and maintenance data under provisions of Section 01340.
- B. Include test, refill or recharge schedules, procedures, and recertification requirements including requirements applicable to the Work.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Do not install extinguishers when ambient temperatures may cause freezing.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. J.L. Industries,
- B. Larsen's Manufacturing,
- C. Substitutions: Under provisions of Section 01340.

2.2 EXTINGUISHERS

- A. In Utility Room #107: Multi-Purpose Dry Chemical Type: steel tank, model "Cosmic 10E" manufactured by J.L. Industries; with pressure gage, 10 lb. capacity rated 4A-80BC with #MB846C wall bracket (cabinet not required).
- B. For Semi-Recessed Cabinet Applications at Kitchen #101 and Bunkhouse #201: Multi-Purpose Dry Chemical Type: steel tank, model "Cosmic 5E" Manufactured by J.L. Industries; with pressure gage, 5 lb. capacity rated 3A-40BC (see the following paragraph for cabinets).

2.3 CABINETS

- A. Semi-Recessed cabinet at Stud Walls: J.L. Industries "Ambassador Series 1017D10" with 3" rolled edge trim.

2.4 FABRICATION

- A. Form body of cabinet with tight inside corners and seams.
- B. Pre-drill holes for anchorage.
- C. Form perimeter trim and door stiles by welding, filling and grinding smooth.
- D. Hinge doors for 180 degree opening with continuous piano hinge. Provide nylon roller type catch.

2.5 FINISHES

- A. Extinguisher: Red enamel.
- B. Cabinet, Trim and Door:
 - 1. Semi-recessed - white epoxy primer finish. Field paint with appropriate finish system for surface to be painted as described in Specification Section 09900 - Painting. One color to be selected by Architect.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Prior to rough-in, field verify mounting locations with Fire Marshall, Architect and Project Manager and adjust locations as directed.
- B. Verify rough openings for cabinet are correctly sized and located.
- C. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

- A. For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all solid blocking in walls, fasteners, hardware, mounting devices, brackets, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- B. Install cabinets plumb and level in wall openings 36 inches from finished floor to inside bottom of cabinet.
- C. Secure rigidly in place in accordance with manufacturer's installation instructions.

- 3.3 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.

SECTION 15400 - PLUMBING**PART 1 - GENERAL**

- 1.1 THIS SECTION outlines the general requirements for the plumbing system. the plumbing system is to be provided complete, including but not limited to, installation of plumbing fixtures, piping, controls, trim and accessories, hangers, sleeves, and supports.
- 1.2 QUALITY ASSURANCE:
 - A. Comply with California Plumbing Code most recent edition with current State and local amendments and all other applicable codes and regulations unless stricter standards are indicated.
 - B. All plumbing fittings and fixtures must comply with California Code of Regulations, Title 24, Part 2, Chapter 53 (CCR Title 24) and rules and regulations of the California Energy Commission.
- 1.3 SUBMITTALS:
 - A. Plumbing Fixtures and Fittings: Manufacturer's Literature and color samples.

PART 2 - MATERIALS

- 2.1 GENERAL: Materials and equipment specified or scheduled by manufacturer's number shall include all accessories listed in manufacturer's catalogue as standard with equipment; furnish optional or additional accessories indicated. Where no specific make of material or equipment is mentioned, first class material of reputable manufacturer may be used provided it conforms to the requirements of the system and applicable codes.
 - A. Service: Size in accordance with requirements of Uniform Plumbing Code, for fixture unit demand and available supply flow and pressure.
 - B. Domestic Water Piping: PVC to house; copper Type L or "aquapex" inside building.
 - C. Waste and Vent Piping: ABS or cast iron.
 - D. Supply Fittings: Chrome plated brass. (All fixtures shall have separate stops in water supply unless integral with fitting.)
 - D. Gas Piping: Black steel pipe, in accordance with utility company requirements.
 - F. Provide exterior insulation blanket for all water heaters which provides a minimum R-12 insulation value.

- 2.2 **FIXTURES AND FITTINGS:** Provide all plumbing fixtures, fittings, valves and other items called for in the Specifications and any other piping, vents, drains, traps, fittings, valves, stops or other items required for a complete and proper installation.

PART 3 -EXECUTION

- 3.1 **COORDINATE** installation and connection of the work with other affected trades.
- 3.2 **PIPING:** All water supply piping shall be mounted with acoustic pipe isolators. All drain, waste and vent pipe shall be padded where piping at any point is closer than 1/2" to any structural member. Padding shall be a minimum of 1/4" thick resilient padding (carpet padding is acceptable).
- 3.3 **SET ALL** fixtures level and plumb.
- 3.4 **TEST AND ADJUST** system after installation as required by applicable codes.
- 3.5 **REMOVE ALL** labels and clean fixtures ready for use.
- 3.6 **THE PLUMBING** scope of work calls for combining valves and faucets of different manufacturers. The Contractor shall verify the compatibility of the components with each other to assure proper operation of the combined elements. Contractor shall contract manufacturers prior to ordering fixtures to assure that proper flow and pressure can be obtained using the components specified in the schedule. Where proper operation cannot be assured, report such information to the Architect and substitute fittings by a single manufacturer will be specified for use in the project.
- 3.7 **INSTALLATION:** For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.
- 3.8 **WARRANTIES:** At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.
- 3.9 **INTERFACE WITH EXISTING WORK:** The work involves remodeling of an structure and adding on to it. Prior to submitting a bid, it is the Contractor's responsibility to

examine the existing site and structures, and to verify the construction details as well as all other existing conditions which must mesh with new work. Include in the bid price a sum to cover costs of items necessary to perform work. No allowance will be made to a bidder because of a lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examinations.

3.10 EXISTING SERVICES

- A. Active Services: When encountered in work, protect, brace, support existing active gas, electric, other services where required for proper execution of work. If existing active services are encountered that require relocation make request in writing for determination. Do not proceed with work until written directions are received. Do not prevent or disturb operation of active services that are to remain.
- B. Inactive Services: When encountered in work, remove, cap, or plug inactive services. Notify utility companies or municipal agencies having jurisdiction; protect or remove these services as directed.

3.11 CUTTING, PATCHING, RESTORING

- A. Unless otherwise specified, each contractor shall do all cutting, drilling, patching, restoring that may be required in connection with his work, he shall restore work of other contractors damaged by him.
- B. No contractor shall do any cutting that may impair strength of building construction. No holes, except for small screws, may be drilled in beams or other structural members without prior approval.
- C. Patch and/or trim with materials that match existing to correct unsightly conditions caused by remodeling.

SECTION 16000 - ELECTRICAL**PART 1 - GENERAL**

- 1.1 THIS SECTION outlines the general requirements for the electrical system. The electrical system includes, but is not limited to, all wiring, devices, grounding, circuit protection, switches, outlets, panel boxes, meters, connectors, accessories and fixtures necessary for a complete installation with all equipment, appliances and controls connected and ready for use. The job entails new construction and interfacing with existing Work.
- 1.2 QUALITY ASSURANCE:
- A. Building Code: California Building Code most recent edition with current State and local amendments.
 - B. Electrical Code: California Electric Code most recent edition with current State and local amendments.
 - C. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
 - D. Comply with all applicable local codes and regulations unless stricter standards are indicated.
 - E. All equipment, materials, fixtures shall bear U/L label rating. All exterior components and those in bathroom areas shall bear U/L label rating for damp locations.
 - F. Accessibility Requirements: All materials and workmanship shall comply with the all requirements for accessibility as set forth in the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Federal Americans with Disabilities Act in effect at the time of construction.
- 1.3 SUBMITTALS:
- A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.
 - B. Submit electrical load calculations for review by Architect.

PART 2 - PRODUCTS**2.1 LOADCENTERS**

- A. Manufacturer: Square-D, Westinghouse, ITE, or equivalent.
- B. Construction: Boxes shall be made from cold rolled code gauge sheet steel having multiple knockouts and shall be factory assembled into a single rigid structure. Hinged doors covering all circuit breaker handles shall be included in all trims. Doors shall have a manually operated spring latch.
- C. Finish: Finish shall be medium light gray ASA49 enamel.
- D. Bussing: Bus bars for the mains and cross connectors shall be of copper or tin plated aluminum in accordance with UL standards. Bussing shall be braced throughout to conform to industry standard practice governing short circuit stresses in load centers. Neutral bussing shall have a suitable lug for each outgoing feeder requiring a neutral connection of same ampacity as branch.
- E. Overcurrent Devices: Plug-on type circuit breakers. All breakers shall be full-size. No “half-size”, or “wafer-size” breakers shall be allowed.

2.2 METER ASSEMBLIES

A. General

- 1. Meter Assemblies shall meet the enclosure requirements established by UL and shall be furnished with a UL label stating the switchboard is “Suitable for use as a Service Equipment” and shall meet the requirements of PG&E as service entrance equipment.
- 2. Metering sections shall be provided with 5-jaw meter sockets for 120/240V 1 phase 3 wire service. All meter sockets shall be UL approved for “continuous duty”.
- 3. Shall be as manufactured by Square-D, Westinghouse, ITE, GE or equivalent.
- 4. Underground Termination Facilities: Provide termination facilities in accordance with PG&E standards.

2.3 CONDUIT AND FITTING

A. Rigid Steel Conduit

- 1. Conduit, rigid steel: full weight, threaded, hot-dip galvanized, inside enameled, conforming to ANSI C80.1.

B. Electrical Metallic Tubing (EMT)

- 1. Conduit: Shall be formed of cold rolled strip steel, electrical resistance welded continuously along the longitudinal seam and hot-dip galvanized after fabrication. Conduit shall conform to ANSI C90.3 specifications and shall meet UL requirements.

C. Non-Metallic Conduit

1. Conduit: Carlon schedule 40 PVC.
2. All fittings solvent welded.

2.4 WIRE AND CABLE

A. General

1. Acceptable manufacturers: General Electric Co., Rome Cable, Southwire, Triangle, PWC Inc., or equivalent.
2. Conductor material: All wire and cable shall be insulated copper conductors for all wire sizes.
3. Insulation: Insulation shall be THWN-THHN for wire sizes through size 1/0 AWG. For larger sizes insulation shall be THWN, XHHW, THW or as required to suit application.
4. Fixture wire: Type AF
5. Non-metallic Sheathed Cable: Type NM with ground. Romex type.
6. Service-Entrance Cable: Type SE with ground.
7. Telephone and computer network cable to be Category Six type communications cable.
8. Minimum conductor size:

Power and lighting branch circuits:	#12 AWG
Small appliance circuits:	#12 AWG
Signal and control circuits under 100 volts:	#14 AWG

Provide low voltage wiring as required in the National Electrical Code.

2.5 OUTLET BOXES AND COVERS

- A. Standard Outlet Boxes: Galvanized, one-piece, drawn steel, knock-out type of size and configuration best suited to the application indicated on the plans. Minimum box size, 4 inch square by 1-1/2 inch deep.
- B. Switch Boxes: Two inch by 3 inches long, galvanized steel switch boxes shall be used only for the installation of single switches. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.

- C. Nonmetallic Outlet Boxes: PVC type nonmetallic boxes, and nonmetallic raised covers as manufactured by Carlon or equivalent may be used in lieu of standard steel boxes in conformance with the requirements of the National Electrical Code.

2.6 SWITCHES AND RECEPTACLES

A. General

- 1. All general purpose 15 and 20 ampere, 125-250 volt receptacles and 120-277 volt switches shall conform to NEMA WD-1 and applicable UL tests.

B. Receptacles:

- 1. Ground fault circuit interrupter receptacle: NEMA type 5-15R residential grade, LEVITON MFG. CO. #6599-W or equivalent.
- 2. Duplex receptacles; NEMA type 5-15R residential grade, LEVITON #5096-W or equivalent. NEMA type 5-20R for damp locations.
- 3. Floor receptacles: Carlon Co, 1-gang rectangular floor box # E976RFB and #E9761 cover with stainless steel finish.

- C. Switches: Fifteen and Twenty ampere, 120-277 volts, fast make-slow break, quiet type switch with silver cadmium alloy contacts, binding head terminal screws, back and side wired. All switches shall be of color approved by Architect.

- 1. Single pole, single throw, residential grade, LEVITON #53501-W or equivalent.
- 2. Three-way, residential grade, LEVITON 53503-W or equivalent.
- 3. Dimmer light switch, UL listed, built-in TV/radio interference filter and choke filter, LEVITON 'DECORA' series suitable for type of lamp.

2.7 DEVICE PLATES

- A. Flush Device Plates: residential areas, plates shall be smooth plastic, LEVITON #8600 series or equal, of color approved by Architect.

- 1. Outlets installed within the building on exterior walls shall have device plates provided with full-size 1/8" thick rubber neoprene closecell gaskets, with knockouts for receptacles or switches.

- B. Surface Mounted Devices, indoor: Galvanized metal or fit box.

- C. Outdoor, Weatherproof: PVC construction, corrosion resistant, heavy duty, hinged cover flap, and gasket.

2.8 PROTECTIVE DEVICES

- A. Circuit Breakers: Molded case, bolt-on, thermal magnetic type, 40 degrees C. Ambient temperature compensated, fixed mounting, with quick-make, quick-break switching mechanism mechanically trip-free from the operating handle and conforming to applicable codes.
- B. Ratings: Refer to drawings and prepare panel schedules for trip frame and poles required. Minimum short circuit rating for 120/240 volt breakers is 22,000 A.

2.9 IDENTIFYING DEVICES

- A. Panelboard Directories: Shall be typewritten, arranged in numerical order and shall show the number where the circuit is located. The room numbers used shall be verified with the Owner and shall not necessarily be those used in the drawings. Mount directories in a 6"x8" metal frame under glass inside each panelboard.
- B. Wire and Terminal Markers: Self-adhering, pre-printed vinyl with self-laminating wrap around strip. Brady B191 series, Thomas & Betts WSI series, or equivalent.

2.10 TELEPHONE/CATV SERVICE BOXES

- A. Provide recessed, mounted protector box as manufactured by Benner-Nawman, model BN1020 and BN1120W, constructed of galvanized steel, with weather resistant screwed on lid.
- B. Provide box with riser conduit and ground wire per Pac Bell requirements.

2.11 GROUNDING

- A. Enclosures of equipment, raceways, and fixtures shall be permanently and effectively grounded. Provide code sized (unless otherwise indicated) copper, insulated green equipment ground with non-metallic conduit runs. Equipment ground shall originate at panelboard ground bus and shall be bonded to all switch and receptacle boxes and electrical equipment enclosures.
- B. Building services shall be grounded using concrete encased electrode installed in footings, per NEC Article 250. Bonding shall be made to cold water pipe and gas pipe.

2.12 LIGHTING FIXTURES: See Lighting Fixture Schedule.

- 2.13 ALARM SYSTEM: Provide complete smoke detector system and fire alarm to meet all requirements of applicable codes.

PART 3 -- EXECUTION

3.1 CONDUIT AND RACEWAY APPLICATIONS

- A. Rigid Steel Conduit: For all exposed conduit exposed to mechanical damage.
- B. PVC Conduits: Schedule 40 PVC may be used underground with 3" sand under and 6" sand over when serving lighting circuits and power secondary circuits. PVC conduit may be used exposed at meter assemblies where protected from damage.

3.2 CONDUIT INSTALLATION

A. General

1. Conduit system shall be concealed unless exposed work is clearly called for on the drawings.
2. Conduits shall be tightly covered and well protected during construction using metallic bushings and bushing "pennies" to seal open ends.
3. In all empty conduits or ducts, install a 200-pound tensile strength polyethylene pulling rope.
4. Conduit systems shall be electrically continuous throughout. Install code size, insulated, copper, green grounding conductor in all conduit runs as required by code, or as indicated on drawings.

B. Layout

1. Locations of conduit runs as indicated on site and electrical plans.
2. Where practical, install conduits in groups in parallel, vertical or horizontal runs and at elevations that avoid unnecessary offsets.
3. Exposed conduit shall be run parallel or at right angles to the centerlines of columns and beams.
4. Conduits shall not be placed closer than 12 inches from a parallel hot water or steam line or 3 inches from such lines crossing perpendicular to the runs.

C. Supports

1. All raceway systems shall be secured to the building structures using specified fasteners, clamps and hangers spaced according to code requirements.
2. Support single runs of conduit using one hole pipe straps. Where run horizontally on walls in damp or wet location, install "clamp backs" to space conduit off the surface.

3.3 CABLE AND WIRE INSTALLATION

A. General

1. Conductors shall not be installed in conduit until all work of any nature that may cause injury is completed. Care shall be taken in pulling conductors that insulation is not damaged. UL approved non-petroleum base and insulating type pulling compound shall be used as needed.
2. All cables shall be installed and tested in accordance with manufacturer's requirements and warranty.

B. Splicing and Terminating

1. All aspects of splicing and terminating shall be in accordance with cable manufacturer's published procedures.
2. Make up all splices in outlet boxes with conductors as specified herein with separate tails of correct color to be made up to splice. Provide at least six (6) inches of tails packed in box after splice is made up.

C. Nonmetallic Sheathed Cable and Service Entrance Cable

1. Nonmetallic Sheathed Cable shall be used for feeder to unit loadcenter, as allowed by NEC Article 338.
2. Service Entrance Cable shall be used for feeder to unit loadcenter, as allowed by NEC Article 338.
3. Cables shall comply with NEC Section 300-4 where installed through studs, rafters and similar members.

3.4 INSTALLATION OF BOXES AND WIRING SERVICES

A. General

1. All outlets shall finish FLUSH with building walls and ceiling, except where exposed work is called for. There shall be no gap between box and wall or ceiling material. Any

opening between box and wall or ceiling shall be caulked airtight at party wall boxes shall be sealed with approved acoustic sealant.

2. Install raised device covers on all outlet boxes as required to finish flush with surface. Covers shall be of a depth to suit the wall or ceiling finish.
3. Exposed outlet boxes and boxes in damp and wet locations shall be cast metal with gasketed cast metal cover plates.

B. Box Layout

1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
2. Outlet boxes in stud walls and partitions shall not be mounted back-to-back nor shall through-wall boxes be permitted.

C. Mounting Heights: Mounting heights of devices as measured from the top of the faceplate shall be as follows:

Device	Height (Inches)
Convenience receptacles	12
Convenience receptacles above counters or at lavatories unless otherwise noted.	44
Switches, light + 46" at kitchen	48
Telephone Outlet	12

3.5 INSTALLATION OF MANUFACTURED ITEMS

For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. All such items required by the installation instructions shall be provided by the Contractor at no additional cost to the Owner.

- 3.6 COORDINATE installation and connection of the work with other affected trades.
- 3.7 TEST, ADJUST and balance system for proper operation
- 3.8 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.
- 3.9 INTERFACE WITH EXISTING WORK: The work involves remodeling of an structure and adding on to it. Prior to submitting a bid, it is the Contractor's responsibility to examine the existing site and structures, and to verify the construction details as well as all other existing conditions which must mesh with new work. Include in the bid price a sum to cover costs of items necessary to perform work. No allowance will be made to a bidder because of a lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examinations.
- 3.10 EXISTING SERVICES
- A. Active Services: When encountered in work, protect, brace, support existing active gas, electric, other services where required for proper execution of work. If existing active services are encountered that require relocation make request in writing for determination. Do not proceed with work until written directions are received. Do not prevent or disturb operation of active services that are to remain.
- B. Inactive Services: When encountered in work, remove, cap, or plug inactive services. Notify utility companies or municipal agencies having jurisdiction; protect or remove these services as directed.
- 3.11 CUTTING, PATCHING, RESTORING
- A. Unless otherwise specified, each contractor shall do all cutting, drilling, patching, restoring that may be required in connection with his work, he shall restore work of other contractors damaged by him.
- B. No contractor shall do any cutting that may impair strength of building construction. No holes, except for small screws, may be drilled in beams or other structural members without prior approval.
- C. Patch and/or trim with materials that match existing to correct unsightly conditions caused by remodeling.

SECTION 16821 - INTEGRATED FIRE ALARM and SMOKE DETECTION SYSTEM**PART 1 - GENERAL**

- 1.1 THIS SECTION includes all Fire Alarm Systems and related work where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 1.2 QUALITY ASSURANCE:
 - A. California Building Code most recent edition with most recent State and local amendments.
 - B. California Plumbing Code, most recent edition with most recent state and local amendments.
 - D. California Mechanical Code, most recent edition with most recent state and local amendments.
 - E. California I Electric Code, most recent edition with most recent state and local amendments.
 - F. California Fire Code, most recent edition with most recent state and local amendments.
 - G. Meet all requirements for NFPA 72 Fire Alarm System.
 - H. Energy Requirements: All materials and workmanship shall comply with the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Building Energy Efficiency Standards published by the California Energy Commission.
 - I. Accessibility Requirements: All materials and workmanship shall comply with the all requirements for accessibility as set forth in the most recent editions of the California Code of Regulations, Title 24 (California Building Standards Code) with current State and local amendments and the most recent edition of the Federal Americans with Disabilities Act in effect at the time of construction.
- 1.3 SUBMITTALS:
 - A. Provide manufacturer's Literature describing all manufactured products proposed for inclusion in the Work of this Section.
 - B, SHOP DRAWINGS: Submit shop drawings fully describing the scope of the proposed work to be provided under this Section. Submit four copies of shop

drawings showing details of all components of the Fire Alarm system. Manufacturer's standard drawings are acceptable except for non-standard features such as spacial zoning, control systems, coordination with other trades and required clearance to equipment.

1. WIRING LAYOUT: Submit layout diagram showing sizes, connection details, support brackets, and layout of all wiring that is a part of the Fire and Intrusion Alarm system.
- C. SUBMIT all instruction books, warranties, and parts listed to the Owner prior to final acceptance.

1.4 GENERAL INFORMATION

- A. This is a Performance Specification for Design and Installation of a complete Integrated Fire Alarm and Smoke Detection System. Locations of sensors, detectors, pull stations and alarms are the responsibility of the Alarm System Contractor. Final installed system. shall include all items necessary to obtain Code compliance.
- B. The installer shall be trained, properly licensed and experienced in the installation of Fire and Intrusion Alarm systems. It is the installer's responsibility to assure the system functions properly, safely, and meets all local, state and regional codes.
- C. Installer to supply and install all materials shown on this plan and all others needed to complete this Fire and Intrusion Alarm system. Also, provide any incidental work not shown or specified, which can be reasonably inferred as belonging to the work necessary to provide the complete system. Include all such items in Shop Drawing submittal.

1.5 JOB CONDITIONS

- A. Site Conditions: Examine the site and all mechanical, electrical, architectural and other drawings and verify all field conditions that will affect the Work. Make allowances for all such conditions in preparing the bid.
- B. Restoration of Damage: repair or replace, as directed by architect, materials and parts of premises that become damaged as a result of installation of work of this Section.

PART 2 - PRODUCTS

- 2.1 Provide all products required for a complete system as approved by all government agencies having jurisdiction over the Project and as required for a complete and proper installation.
- 2.2 PREFORMANCE CRITERIA: This is a performance specification written for design and installation of a State of California Fire Marshall approved and NFPA 72 approved Integrated Fire Alarm and Smoke Detection System. Pull Stations, Audible and Visual Alarms shall meet the requirements of the ADA and CBC. Contractor shall prepare plans

and calculations and obtain approval from the Fire Marshall having jurisdiction over the project prior to commencing with the Work. Contractor shall present approved plans to the Owner and to the Mendocino County Department of Planning and Building Services prior to commencing with the Work.

2.3 FIRE ALARM AND SMOKE DETECTION SYSTEM COMPONENTS

- A. In addition to complying with all code regulations, meet all requirements of Electrical Notes on sheet EM-1.
- B. All wiring for alarm system shall be concealed where possible.
- C. Provide integrated FACP and IACP control panel with separate readouts for each detection component type.

PART 3 – EXECUTION

3.1 DISCREPENCIES

- A. In the event of discrepancy, immediately notify the Architect.
- B. Do not proceed with the installation in areas of discrepancies until all such discrepancies have been fully resolved.

3.2 GENERAL

- A. Installation to follow all applicable state and local building codes and to be installed following conventional practice for Integrated Fire Alarm and Smoke Detection Systems.

3.3 INSTALLATION

- A. Provide all products required for a complete system as approved by all government agencies having jurisdiction over the project and as required for a complete and proper installation. Written approval of the installed and tested system by the Fire Marshall in charge shall be presented to the Owner at the conclusion of the job. Delivery of the signed off permit by the Contractor shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.
- B. For all manufactured products, follow manufacturer's installation instructions and details as specifically modified by the Drawings and Specifications using materials and methods described in the installation instructions. Contractor shall provide any and all fasteners, hardware, mounting devices, brackets, valves, special fittings, or other specialty items called for in the installation instructions in order to assure proper installation. The Contractor shall provide, at no additional cost all such items required by the installation instructions.

- 3.4 WARRANTIES: At the conclusion of the job, deliver to the Owner full manufacturer's warranties for all manufactured products used in the Work. It is the responsibility of the Contractor to contact manufacturer's representatives and to register the product purchases

- and installations. Warranties shall be registered in the Owner's name. Delivery of completed warranty papers shall be a requirement necessary for the issuance of the Certificate of Substantial Completion.
- 3.5 COORDINATE installation and connection of the Work with other affected trades.
- 1.6 TEST, ADJUST and balance system for proper operation.
- 3.7 INTERFACE WITH EXISTING WORK: The work involves remodeling of a structure and adding on to it. Prior to submitting a bid, it is the Contractor's responsibility to examine the existing site and structures, and to verify the construction details as well as all other existing conditions that must mesh with new work. Include in the bid price a sum to cover costs of items necessary to perform work. No allowance will be made to a bidder because of a lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examinations.
- 3.8 EXISTING SERVICES
- A. Active Services: When encountered in work, protect, brace, support existing active gas, electric, other services where required for proper execution of work. If existing active services are encountered that require relocation make request in writing for determination. Do not proceed with work until written directions are received. Do not prevent or disturb operation of active services that are to remain.
- B. Inactive Services: When encountered in work, remove, cap, or plug inactive services. Notify utility companies or municipal agencies having jurisdiction; protect or remove these services as directed.
- 3.9 CUTTING, PATCHING, RESTORING
- A. Unless otherwise specified, each contractor shall do all cutting, drilling, patching, restoring that may be required in connection with his work, he shall restore work of other contractors damaged by him.
- B. No contractor shall do any cutting that may impair strength of building construction. No holes, except for small screws, may be drilled in beams or other structural members without prior approval.
- C. Patch and/or trim with materials that match existing to correct unsightly conditions caused by remodeling.