

**SUBMITTAL TO THE BOARD OF SUPERVISORS  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



913

FISCAL PROCEDURES APPROVED  
 PAUL ANGULO, CPA, AUDITOR-CONTROLLER  
 BY: Samuel Wong 4/26/12  
 SAMUEL WONG  
 Departmental Concurrence  
 FORM APPROVED COUNTY COUNSEL  
 4/23/12  
 DATE  
 MARSHAL VICTOR

**FROM:** Economic Development Agency

**SUBMITTAL DATE:**  
April 26, 2012

**SUBJECT:** Department of Mental Health, 14<sup>th</sup> Street Office Tenant Improvements - Plans and Specifications and Project Budget

**RECOMMENDED MOTION:** That the Board of Supervisors:

1. Approve the plans and specifications for the construction of the Department of Mental Health, 14<sup>th</sup> Street Office Tenant Improvements Project and authorize the Clerk of the Board to advertise for bids;

(Continued)

**REVIEWED BY CIP**  
*Christopher Hans*  
Christopher Hans

*Robert Field*  
Robert Field  
Assistant County Executive Officer/EDA

<b>FINANCIAL DATA</b>	Current F.Y. Total Cost:	\$ 300,000	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	No
	Annual Net County Cost:	\$ 0	For Fiscal Year:	2011/12

**COMPANION ITEM ON BOARD OF DIRECTORS AGENDA:** No

<b>SOURCE OF FUNDS:</b> 100% State Funds	<b>Positions To Be Deleted Per A-30</b>	<input type="checkbox"/>
	<b>Requires 4/5 Vote</b>	<input type="checkbox"/>

**C.E.O. RECOMMENDATION:**

APPROVE

County Executive Office Signature *Jennifer L. Sargent*  
BY: Jennifer L. Sargent

Policy  Policy  
 Consent  Consent  
 Dept's Recomm.:  Per Exec. Ofc.:

**MINUTES OF THE BOARD OF SUPERVISORS**

On motion of Supervisor Stone, seconded by Supervisor Tavaglione and duly carried, IT WAS ORDERED that the above matter is approved as recommended.

**Ayes:** Buster, Tavaglione, Stone and Benoit  
**Nays:** None  
**Absent:** Ashley  
**Date:** May 8, 2012  
**xc:** EDA, Auditor, CIP, COB

Kecia Harper-Ihem  
 Clerk of the Board  
 By: *Kecia Harper-Ihem*  
 Deputy

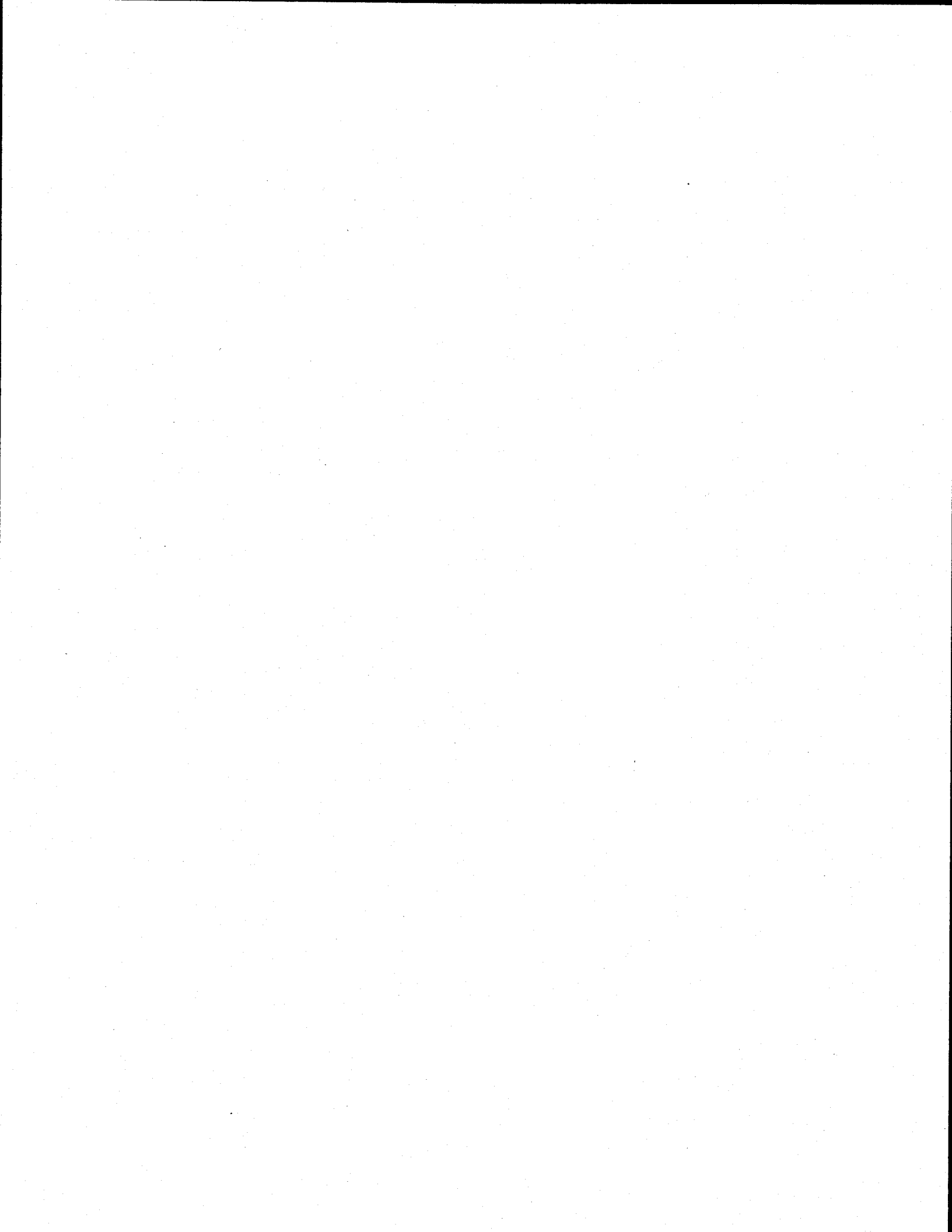
Prev. Agn. Ref.: N/A

District: 2/2

Agenda Number:

**3.6**

ATTACHMENTS FILED  
WITH THE CLERK OF THE BOARD



**RECOMMENDED MOTION:** (Continued)

2. Upon completion of the bid process, authorize the Assistant County Executive Officer/EDA to submit the contract for award of the bid to the lowest responsive and responsible bidder to the Chairman of the Board, and authorize the Chairman to execute the agreement on behalf of the Board; provided that, if any of the following occur, the award will be submitted to the Board for action: there is a bid protest, the lowest bid exceeds the estimated construction budget, the low bidder is disqualified, two or more bids are the same and are the lowest, or a bidder requests relief from its bid due to an error;
3. Approve the total project budget of \$2,166,214; and
4. Delegate project management authority for this project to the Assistant County Executive Officer/EDA in accordance with applicable Board policies.

**BACKGROUND:**

On October 6, 2009, the Board of Supervisors approved a pre-qualified list of architectural and engineering firms to be retained on an as-needed basis. The Economic Development Agency (EDA) has selected Heery International from the pre-qualified list to provide architectural and engineering design services for the Department of Mental Health, 14<sup>th</sup> Street Office Tenant Improvements Project.

Heery International has completed the drawings and specifications, and EDA requests approval to solicit bids for construction of this project. In order to keep the project moving and meet project schedule commitments, staff recommends the Board of Supervisors authorize the Assistant County Executive Officer/EDA to determine award of the project in accordance with Board Policy B-11, and authorize the Chairman of the Board to execute the agreement on behalf of the Board of Supervisors, provided that the lowest bid falls within the allotted project budget amount for construction.

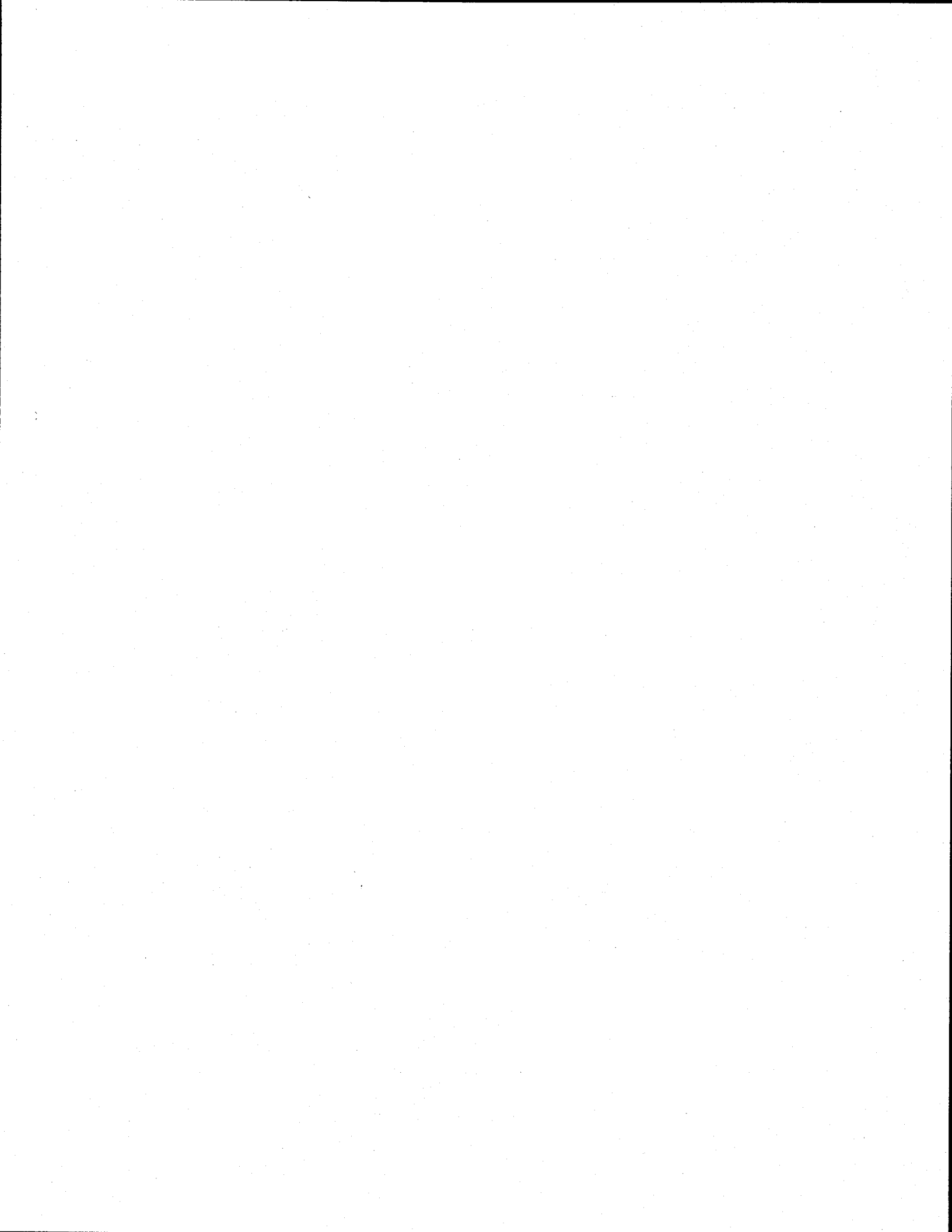
EDA staff recommends that the Board of Supervisors approve the plans and specifications and authorize the Clerk of the Board to advertise the Notice Inviting Bids for the project.

**PROJECT BUDGET:**

The approximate allocation of the project budget is as follows:

Design	98,317
Construction	1,527,273
Fire Life Safety	375,000
Project Management	61,175
Project Contingency	104,449
<b>TOTAL</b>	<b>\$ 2,166,214</b>

(Continued)

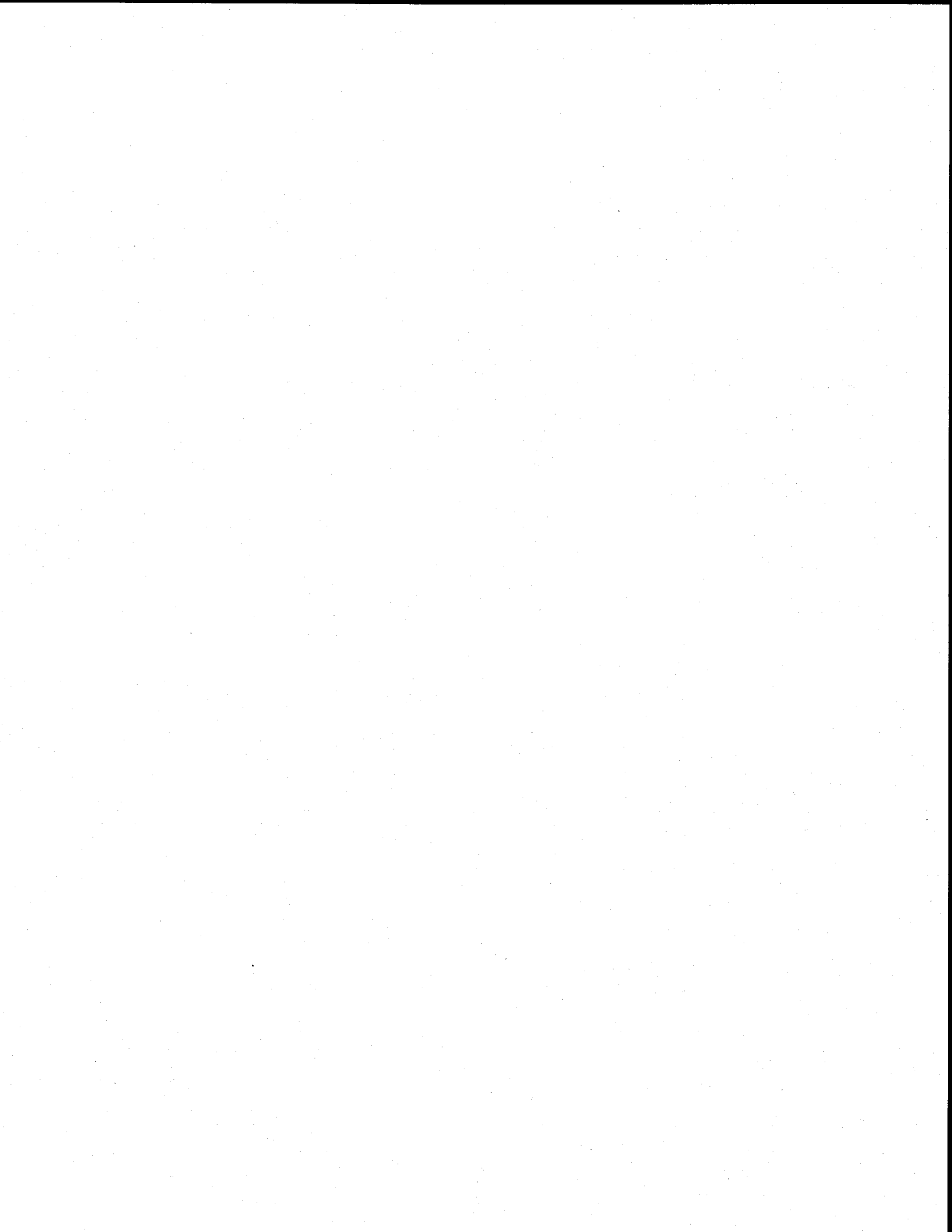


**FINANCIAL IMPACT:**

Project related expenditures for FY 2011/12 are estimated at \$300,000; expenditures for FY 2012/13 are estimated at \$1,866,214. All costs associated with this project will be fully funded through 100% State Funds, thus no net county cost will be incurred as a result of this agreement.

Attachment:

Specifications



SPECIFICATIONS AND CONTRACT DOCUMENTS  
FOR

MENTAL HEALTH 14TH STREET OFFICE TENANT IMPROVEMENT  
PROJECT NO. FM08720000015



PREPARED BY

COUNTY OF RIVERSIDE  
ECONOMIC DEVELOPMENT AGENCY

*Seal* MAY -8 2012

FORM APPROVED COUNTY COUNSEL  
BY: *MS Victor* 4/23/12  
MARSHAL VICTOR DATE

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## NOTICE INVITING BIDS

**NOTICE IS HEREBY GIVEN** that the County of Riverside ("County") invites sealed Bids for the construction of the following project ("Work"):

Department of Mental Health, 14th Street Office Tenant Improvement

Bids shall be prepared in conformance with the Instructions to Bidders and other Bidding Documents. Bids must be received, by hand delivery or mail, by the Clerk of the Board located on the 1<sup>st</sup> floor of the County Administrative Center, 4080 Lemon Street, Riverside, CA 92501, no later than the Bid Closing Deadline of **11:00 a.m. on June 21, 2012**, to be thereafter on said date and at said location publicly opened and read aloud. The Bidder assumes sole responsibility for timely receipt of its Bid.

On and after May 14, 2012 and up to forty-eight (48) hours prior to the Bid Closing Deadline, copies of Bidding Documents will be available to Bidders for pick-up by Bidder at, or for mailing to Bidder upon written request by Bidder submitted to, A&I Reprographics, 898 Via Lata, Ste. L, Colton, CA 92324, 909-514-0704 or <http://dfs.aandirepro.com>. At the time of such pick-up or request for mailing, a non-refundable fee of one hundred and twenty three dollars (\$123.00) for each set of Bidding Documents shall be paid by Bidder by cash or by check or money order made payable to A&I Reprographics. The Bidding Documents may also be viewed in person between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday (except Holidays) at A&I Reprographics, 898 Via Lata, Ste. L, Colton, CA 92324.

A mandatory Pre-Bid Conference will be conducted **on Thursday, May 31, 2012**, commencing promptly at **9:00 a.m.**, at **3625 14th St., Riverside, CA 92501**. **Attendance at the mandatory Pre-Bid Conference is required as a condition of bidding.** Sign language services are available for the Pre-Bid Conference upon written request received by **email** at **[rmedellin@rivcoeda.org](mailto:rmedellin@rivcoeda.org)** at least three (3) business days prior to the Pre-Bid Conference.

The Bidder receiving the Award by the County is required:

- (1) to furnish a Performance Bond and Payment Bond as provided in the Instructions to Bidders and other Bidding Documents;
- (2) both at the time Bidder submits its Bid and other Bid Submittals and at the time of Award, to: (a) hold a contracting license, active and in good standing, issued by the Contractors State License Board for the State of California for the following license classification(s): B - General Building; and (b) hold, or designate a Subcontractor that holds, the certification(s) required by Applicable Laws to perform the following work: Electrical, Mechanical, Plumbing, Fire Protection ; and
- (3) to comply with the provisions of the California Labor Code, including, without limitation, Sections 1773.1, 1774, 1775 and 1776 of the California Labor Code and including, without limitation, the obligations to pay the general prevailing rates of wages in the locality in which the Work is to be performed and comply with Section 1777.5 of the California Labor Code governing employment of apprentices. Copies of the prevailing rates of per diem wages are on file at the Economic Development Agency – Project Management Office, 3403 10th St., 4<sup>th</sup> Floor, Riverside, CA 92501, and are available to any interested party on request.

Substitution of securities for any moneys withheld by County shall be permitted as provided for by Section 22300 of the California Public Contract Code.

Capitalized terms used herein shall have the meanings assigned to them in the Bidding Documents.

For further information, contact:  
Economic Development Agency  
Riverside Centre  
3403 Tenth Street, 4th Floor  
Riverside, CA 92501

# **INSTRUCTIONS TO BIDDERS**

## **ARTICLE 1 GENERAL PROVISIONS**

### **1.1 DEFINITIONS**

Capitalized terms used on the Bidding Documents shall have the meanings assigned to them in the forms of Construction Contract and General Conditions that are included in the Bidding Documents. Capitalized terms not so defined shall have the meanings assigned to them in, or if none is assigned as reasonably interpreted according to the context of, the portion of the Bidding Documents where such terms are used.

### **1.2 SUMMARY OF PROJECT**

**1.2.1 Project Description.** The Project to be constructed generally consists of the following: Tenant Improvements. The identifying name of the Project is Department of Mental Health, 14th Street Office Tenant Improvement.

**1.2.2 Contract Time.** Substantial Completion of the Work must be achieved within one hundred eighty (180) Days from the Date of Commencement. Final Completion must be achieved within forty five (45) Days after the occurrence of Substantial Completion.

**1.2.3 Liquidated Damages.** The Construction Contract includes provisions: (1) permitting the County to assess liquidated damages to the Contractor of \$750 per Day for each Day after the expiration of the Contract Time for Substantial Completion that the Work is not Substantially Completed by Contractor; and (2) for payment by County to Contractor of liquidated damages to Contractor of \$750 per Day for each Day of Compensable Delay for which Contractor is entitled to a Contract Adjustment of the Contract Time and Contract Price.

**1.2.4 County Furnished Materials.** County reserves the right to elect to furnish the following County Furnished Materials for incorporation by Contractor as part of the Work pursuant to an assignment of one or more County Materials Contract(s) in accordance with Section 2.5 of the General Conditions: n/a. Said County Materials Contract(s) are available for review by Bidders at n/a. Bidder is solely responsible to familiarize itself prior to submission of its Bid with the terms and conditions of such County Materials Contract(s). County shall notify the successful Bidder prior to Award if the County elects to assign any of such County Materials Contracts to Contractor for incorporation Contractor of the County Furnished Materials as part of the Work.

**1.2.5 Licensing.** The Bidder to whom the Construction Contract for the Work is Awarded by the County is required, both at the time of the Bid Closing Deadline and at the time of Award, to: (1) hold a contracting license, active and in good standing, issued by the Contractors State License Board for the State of California for the following license classification(s): B - General Building; and (2) hold, or designate in the Designation of Subcontractors a Subcontractor that holds, the certification(s) required by Applicable Laws to perform the following work: Electrical, Mechanical, Plumbing, Fire Protection.

**1.2.6 No Warranty by County.** Bidders are solely responsible to satisfy themselves as to the suitability of any estimates, projections, budgets, criteria, surveys, reports, test data, recommendations, opinions, and other information provided by County relating to the Site, Work or Project (including, without limitation, all information contained in any Reference Documents) and nothing stated in the Bidding Documents, Contract Documents or in any other information provided by the County shall be construed as implying the creation or existence of any warranty, express or implied, on the part of the County with respect to the completeness, accuracy or sufficiency thereof.

**ARTICLE 2  
BIDDER'S REPRESENTATIONS**

**2.1 THE BIDDER BY SUBMITTING ITS BID REPRESENTS THAT:**

**2.1.1 Bidding Documents.** The Bidder has, in its capacity as contractor and not a design professional, carefully and thoroughly examined, compared and understood the Bidding Documents (including, without limitation, the Drawings, Specifications and Reference Documents identified in the Bidding Documents), and acting in that capacity has satisfied itself that the Bidding Documents are free of any errors, conflicts, ambiguities, lack of coordination and violations of Applicable Laws that might affect the Bidder's ability to complete the Work for the amount of its Bid and within the time period(s) for construction required by the Bidding Documents.

**2.1.2 Site Information.** In order to fully acquaint itself with all conditions, restrictions, obstructions, difficulties and other matters which might affect the Bidder's ability to complete the Work for the amount of its Bid and within the time period(s) for construction required by the Bidding Documents, the Bidder has carefully and thoroughly inspected: (1) the Site and its surroundings; (2) all Existing Improvements on the Site and their existing uses by the County, its invitees and the public; (3) routes of ingress and egress to and from the Site; (4) local conditions in the vicinity of the Site (including, without limitation, sources and availability of labor, materials and equipment); (5) the status of construction, if any, that is in-progress at the Site; and (6) all reports, data, as-built drawings and other information (including, without limitation, the Reference Documents identified in the Bidding Documents) concerning visible and concealed conditions (including, without limitation, locations and capacities of utility sources and lines) above and below the surface of the ground and in Existing Improvements that have been made available by the County to Bidders or that are disclosed by public records of the County of Riverside or the City in which the Project is located, and has correlated its observations with the requirements of the Bidding Documents.

**2.1.3 Bid Compliance.** The Bid and other Bid Submittals are in compliance with the Bidding Documents.

**2.1.4 No Exceptions.** The Bid is based upon the materials, equipment, systems and other work required by the Bidding Documents, without any exception, exclusion or qualification.

**2.1.5 Legal Status.** If the Bidder is a corporation, or if one or more of the partners or joint venturers of the Bidder (where the Bidder is a partnership or joint venture) is a corporation, such corporation(s) is(are) duly incorporated, authorized to do business and in good standing under the laws of the State of California.

**2.1.6 Licensing.** Bidder currently holds and, if and when an Award is made to Bidder, Bidder will hold at the time of Award, a license, active and in good standing, issued by the Contractors State License Board for the State of California authorizing the Bidder to contract to perform work in the requisite license classification(s) stated in the Notice Inviting Bids and/or in these Instructions to Bidders.

**2.1.7 Due Authorization.** The person or persons signing the Bid and other Bid Submittals on behalf of the Bidder are authorized to do so on behalf of the Bidder.

**2.1.8 Balanced Bid.** Cost breakdowns of the Bid that are provided by the Bidder are balanced, reflecting in each line item category of Work a reasonable estimate of the Bidder's cost commitments to perform that category of Work and a proportionate share of overhead and profit.

**2.1.9 Labor Compliance.** The Bid includes sufficient funds to enable Bidder to comply with, and Bidder will comply with, all of the applicable provisions of the California Labor Code, including, without limitation, payment of prevailing wages, maintenance and submission of weekly certified payrolls and hiring of apprentices.

## 2.2 MISREPRESENTATION BY BIDDER

The County may determine as unresponsive any Bid in which any statement or representation made or incorporated by reference in the Bid, including any Bid Submittal comprising the Bid, is false, incorrect or materially incomplete and misleading.

## ARTICLE 3 BIDDING DOCUMENTS

### 3.1 COPIES

**3.1.1 Availability.** Copies of Bidding Documents will be available, on and after May 14, 2012 and up to forty eight (48) hours prior to the Bid Closing Deadline, for pick-up by Bidder at, or for mailing to Bidder upon written request by Bidder submitted to, A&I Reprographics, 898 Via Lata, Ste. L, Colton, CA 92324, 909-514-0704 or <http://dfs.aandirepro.com>. At the time of such pick-up or request for mailing, a non-refundable fee of one hundred and twenty three dollars (\$123) for each set of Bidding Documents shall be paid by Bidder by cash or by check or money order made payable to A&I Reprographics. The Bidding Documents may also be viewed in person between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday (except Holidays) at A&I Reprographics, 898 Via Lata, Ste. L, Colton, CA 92324. Bidders may retain their copies of Bidding Documents.

**3.1.2 Sub-Bidders.** Unless otherwise stated in the Notice Inviting Bids, the County assumes no obligation to distribute Bidding Documents directly to Sub-Bidders.

**3.1.3 Complete Sets.** The Bidder shall use complete sets of Bidding Documents in preparing its Bid. The County assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

**3.1.4 No License.** No license to Bidder is intended or conferred by the County's issuance to Bidders of copies of the Bidding Documents.

### 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

**3.2.1 Examination by Bidder.** The Bidder shall, with reasonable care and diligence in its capacity as a contractor and not a design professional, carefully and thoroughly examine the Bidding Documents and prior to the Bid Closing Deadline report to the County in writing by means of a request for clarification provided in accordance with Paragraph 3.2.3, below, any information contained in the Bidding Documents constituting an error, conflict, ambiguity, lack of coordination or violation of Applicable Laws that might affect the Bidder's ability to complete the Work for the amount of its Bid and within the time period(s) for construction required by the Bidding Documents. Failure by the Bidder to do so shall not relieve the Bidder from its representations set forth in these Instructions to Bidders nor serve as the basis for any claim by the Bidder that it was mistaken or misled in connection with the preparation of its Bid or its planning for construction of the Work.

**3.2.2 Pre-Bid Conference.** A mandatory Pre-Bid Conference will be conducted on Thursday, May 31, 2012, commencing promptly at 9:00 a.m., at 3625 14th St., Riverside, CA 92501. Attendance at the mandatory Pre-Bid Conference is required as a condition of bidding. Sign language services are available for the Pre-Bid Conference upon written request received by email at [rmedellin@rivcoeda.org](mailto:rmedellin@rivcoeda.org) at least three (3) business days prior to the day of the Pre-Bid Conference. Regardless of whether the Pre-Bid Conference is described in the Bidding Documents as mandatory or optional, Bidder shall be deemed charged with knowledge of all facts, circumstances and other information that were apparent, available or provided to Bidders at the Pre-Bid Conference, including, without limitation, any and all of the physical conditions of the land and Existing Improvements at the Site that were visible or available for inspection or review by the Bidders attending the Pre-Bid Conference.

**3.2.3 Requests for Clarification.** If the Bidder requires clarification or interpretation of the Bidding Documents, it shall make a written request to County by a request for clarification. All requests for clarification of the Bidding Documents must be submitted, in writing, between the hours of 8:00 a.m. and 4:00 p.m. on any Day, Monday through Thursday (except Holidays) up to, including and no later than the five (5) Day prior to Bid Closing Deadline, by hand delivery, mail, fax or e-mail to the following: EDA-PMO, 3403 10th St. 4th Floor, Riverside, CA 92501, 951.955-4890 fax, rmedellin@rivcoeda.org. No response will be made to requests for clarification received after that time.

**3.2.4 Addenda.** Interpretations, corrections and changes of the Bidding Documents will be made by Addenda. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding and the Bidder shall not rely upon them.

**3.2.5 Communications.** The Bidder shall not, at any time during the bidding process following advertisement of the Notice Inviting Bids and prior to issuance of the Notice of Intent to Award, communicate with the County, Architect, County Consultants or any employee or representative of any of them, concerning the Project except by means of a written requests for clarification submitted by Bidder in accordance with Paragraph 3.2.3, above.

### **3.3 SUBSTITUTIONS**

**3.3.1 Requests for Substitutions.** The Bidder shall make requests for Substitutions on the County's Request for Substitution form included in the Bidding Documents. Such requests shall comply with the requirements of the Bidding Documents, including without limitation, the Plans and Specifications. Without limitation to the other requirements of the Request for Substitution form, requests for Substitutions shall include: (1) a description of the material, equipment or other work that is to be replaced or eliminated by the Substitution; (2) a description of any other changes to the Work, Existing Improvements, the Site or the work of Separate Contractors that would be necessary if the proposed Substitution were incorporated as part of the Work; (3) a statement that the Bidder accepts responsibility for the inclusion in its Bid of all of the costs of implementing the Substitution, including, without limitation, the costs of any related changes to the Work, Existing Improvements, the Site or the work of Separate Contractors; (4) all drawings, performance and test data and other information necessary for an evaluation of the Substitution by the County, Architect and County Consultants; and (5) a statement that the Bidder understands and agrees that if the Substitution is not approved and the Bidder submits a Bid, Bidder will provide the Work as specified in the Bidding Documents without such Substitution. The burden of proof of the merit of a proposed Substitution is entirely upon the Bidder requesting the Substitution.

**3.3.2 Deadline for Submission.** Any completed Request for Substitution form that Bidders wishes to have considered by County must be submitted, between the hours of 8:00 a.m. and 5:00 p.m. on any Day, Monday through Thursday (except Holidays) up to, including and no later than the seventh (7th) Day prior to the Bid Closing Deadline, in writing, by hand delivery, mail, or fax to the following: EDA-PMO, 3403 10th St. 4th Floor, Riverside, CA 92501, 951.955-4890 fax, rmedellin@rivcoeda.org. No response will be made to any Requests for Substitution form received after that time.

**3.3.3 Review by County.** To the maximum extent permitted by Applicable Laws, approval or disapproval of a Substitution proposed by a Bidder is in the sole and absolute discretion of the County. The County's decision to approve or disapprove of a proposed Substitution shall be final and binding. An Addendum shall be issued to all Bidders describing any Substitution properly and timely requested prior to the Bid Closing Deadline that is approved by the County. Failure by County to respond to a properly and timely submitted Request for Substitution prior to 11:00 a.m. of the second (2nd) working day before the Bid Closing Deadline shall be automatically deemed to be a disapproval by County thereof.

**3.3.4 Standards.** In evaluating a Request for Substitution form submitted by a Bidder, the materials, products and equipment described in the Bidding Documents are generally viewed by the

County as establishing the standards for function, dimension, appearance and quality to be met by the requested Substitution.

**3.3.5 Performance by Bidder.** In the event the Bidder has submitted a Request for Substitution form and the request for Substitution is denied, or deemed denied, by the County and the Bidder thereafter submits a Bid and receives the Award, then the Bidder shall execute the Construction Contract and provide the Work as specified, without such Substitution and at no additional cost or expense to the County.

**3.3.6 No Postponement.** Delays associated with the review, processing or approval of a Request for Substitution form submitted by Bidder shall not entitle Bidder to a postponement of the deadlines set forth in the Bidding Documents.

**3.3.7 No Bid Adjustment.** Neither approval nor disapproval of a Request for Substitution form shall be grounds for adjustment of a Bid.

### **3.4 ADDENDA**

**3.4.1 Transmittal.** Addenda will be transmitted by County to all prospective Bidders who (1) attended and signed in at the Pre-Bid Conference (if any) or (2) have submitted a written request to County for notice of Addenda at text, including in such request the Bidder's name and address for mailing.

**3.4.2 Inspection.** Copies of Addenda will also be made available for in-person inspection wherever Bidding Documents are on file for that purpose.

**3.4.3 Issuance.** Without limitation to the County's right to withdraw its request for Bids, Addenda may be issued up to, but not later than, seventy-two (72) hours prior to the Bid Closing Deadline; provided, however, that an Addendum withdrawing the request for Bids or one which postpones the Bid Closing Deadline may be issued at any time prior to the Bid Closing Deadline.

**3.4.4 Receipt by Bidder.** Failure of the Bidder to receive any Addendum shall not relieve the Bidder from any of its obligations under its Bid Submittal. The costs of performance by Bidder of all items of Work and other obligations contained in all Addenda issued by County shall be deemed included in the amount of the Bidder's Bid. The Bidder shall identify and list in its Bid all Addenda received and included in its Bid. The Bidder's failure to so acknowledge the receipt of all Addenda in its Bid may be asserted by the County as a basis for determining its Bid non-responsive.

## **ARTICLE 4 BIDDING PROCEDURES**

### **4.1 PREPARATION OF BIDS**

**4.1.1 Bid Form.** Bidder shall state its Bid price using the Bid Form included in the Bidding Documents. A Bid presented on other forms shall be disregarded.

**4.1.2 Blanks.** All blanks on the Bid Form shall be legibly executed in a nonerasable medium.

**4.1.3 Figures.** Sums shall be expressed in a Bid in both words and figures. In case of discrepancy, the amount written in words shall govern.

**4.1.4 Alterations.** Interlineations, alterations and erasures in a Bid must be initialed by each and all of the signer(s) of the Bid.

**4.1.5 Alternative Bids.** Alternative Bids will not be accepted unless specifically requested in the Bidding Documents.

**4.1.6 Multiple Bids.** Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the Bid Security, state in its Bid the Bidder's refusal to accept the Award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on or conditions to its Bid Form nor qualify its Bid in any other manner.

**4.1.7 Name of Bidder.** Each copy of the Bid shall state the legal name of the Bidder and its legal form of business (i.e., sole proprietor, partnership, joint venture or corporation). Bids shall be submitted in the name of Bidder that appears in the Bidder's license issued by the State of California Contractors State License Board for the license classification(s) that the Bidder is required to hold pursuant to the Notice Inviting Bids. Each Bid shall bear the longhand signature and printed name and title of the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

**4.1.8 Bid Submittals.** Each Bid shall include the following Bid Submittals executed in the manner required by the Bidding Documents:

- .1 Bid Form, in the form specified in the Bidding Documents;
  - .2 Bid Security, consisting of either (a) a Bid Bond, in the form specified in the Bidding Documents, or (b) such other form of Bid Security as is permitted by these Instructions to Bidders;
  - .3 Bid Security Receipt, in the form specified in the Bidding Documents;
  - .4 Designation of Subcontractors, in the form specified in the Bidding Documents;
- and
- .5 Non-Collusion Affidavit, in the form specified in the Bidding Documents.
  - .6 Iran Contracting Act Certification

**4.1.9 Modifications by Bidder.** Changes or additions to the Bid Form, recapitulations of the Work bid upon, conditions or limitations on the Work to be done, alternative proposals or any other modification of the Bid Form not specifically called for by the Bidding Documents may result in the County's rejection of the Bid as being non-responsive. No oral, telephonic, electronic, facsimile or telegraphic modification of any Bid submitted will be considered.

**4.1.10 Designation of Subcontractors.** The Bidder shall submit, on the Designation of Subcontractors form specified in the Bidding Documents, a list of the proposed Subcontractors and the portion of Work to be done by each Subcontractor as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code Sections 4100 et seq). Unless the Notice Inviting Bids expressly states otherwise, any information requested in the Designation of Subcontractors other than a Subcontractor's name and location of business must be submitted as part of the Bid and may not be submitted after the Bid Closing Deadline. If additional sheets are needed to provide the information requested in the Designation of Subcontractors, they shall be included by Bidder as part of its Bid and shall accompany the Designation of Subcontractors. If bidding of Alternates is called for by the Bidding Documents and the Bidder intends to use different or additional Subcontractors or if acceptance of the Alternate by County would cause the value of the Work to be performed by a Subcontractor not identified in the Designation of Subcontractors accompanying the Base Bid to exceed the threshold dollar amount required by Applicable Law for listing of Subcontractors, then a separate Designation of Subcontractors form must be submitted for each such Alternate. If the Bidding Documents require the performance of

Work for which the Bidder or a Subcontractor must hold a certification required by Applicable Laws to perform the work, and if the Bidder intends to use a Subcontractor holding such certification to satisfy said requirement and to perform such Work, then Bidder shall, without limitation to any other information that may be required by Applicable Laws, include in the Designation of Subcontractors the name of such Subcontractor and a description of the Work requiring such certification that the Subcontractor will be performing.

**4.1.11 Builder's All Risk (Course of Construction) Insurance.** The Bid Form states whether the Bidder shall include Builder's All Risk (Course of Construction) Insurance for the Project. If the Bid Form states that such insurance shall be included by the Bidder in its Bid, then Contractor shall provide a policy of Builder's All Risk (Course of Construction) insurance coverage that conforms to the requirements set forth in Subparagraph 11.1.1.5 and the other applicable provisions of Article 11 of the General Conditions. NOTWITHSTANDING THE FOREGOING, COUNTY RETAINS THE RIGHT exercised at any time prior to award TO ELECT TO USE ITS OWN BUILDER'S ALL RISK (COURSE OF CONSTRUCTION) INSURANCE and in the event County so elects to deduct the price for such insurance that is stated in Contractor's Bid, or if not so stated the amount included by Contractor for such insurance in the preparation of the Contractor's Bid, from the Contract Price by means of a Contract Adjustment pursuant to Change Order or Unilateral Change Order. If the County so provides the All Risk (Course of Construction) insurance for the Project, then Contractor shall assume the cost of any and all applicable policy deductibles (currently, \$50,000 per occurrence) and shall insure its own machinery, equipment, tools, etc. from any loss of any nature whatsoever.

**4.1.12 Interested Bidder.** No person, partnership, joint venture, corporation or other association of persons or entities submitting a Bid shall be allowed to submit more than one Bid or be interested in a Bid submitted by any other Bidder. A person, partnership, joint venture, corporation or other association of persons or entities that, in the capacity as a Subcontractor to a Bidder, has quoted a bid price to a Bidder is not disqualified from submitting a proposal or quoting prices to other Bidders or making a Bid as a general contractor for the entirety of the Work. For the purpose of this Paragraph, "interested in" means having a managerial or financial interest in another Bidder.

**4.1.13 Prequalification.** If the County has stated in the Notice Inviting Bids that bidding is limited only to bidders that were prequalified pursuant to a Prequalification conducted by County, and if Bidder was previously prequalified pursuant to that process to submit a Bid for the Project, then in addition to the requirements of the Bidding Documents the Bidder must comply with any additional requirements for bidding that are set forth in the Prequalification Documents, including, without limitation, compliance by Bidder with any continuing responsibilities for disclosure of any changes in ownership, management or financial condition. If the Bidder has been prequalified to submit a Bid for the Project it shall, if requested by County, submit prior to or with its Bid any certification(s) that the County is authorized to request by the terms of the Prequalification Documents governing the Bidder's prequalification.

**4.1.14 Applicable Laws.** All Bids must be submitted, filed, made and executed in accordance with Applicable Laws relating to bids for contracts of the nature provided for by the Bidding Documents, whether such Applicable Laws are expressly referred to herein or not.

**4.1.15 Non-Transferable.** A Bid is non-transferable.

## **4.2 BID SECURITY**

**4.2.1 Forms of Bid Security.** Each Bid shall be accompanied by a Bid Security in the form of (1) cash, (2) a certified or cashier's check made payable to the County or (3) a Bid Bond (using the form of Bid Bond included in the Bidding Documents) issued by an Admitted Surety, in an amount equal to at least ten percent (10%) of the Bid Amount, as a guarantee that the Bidder, if awarded the Construction Contract, will enter into a Construction Contract with the County and furnish the Performance Bond, Payment Bond and other Post-Award Submittals required by the Bidding Documents. Should the Bidder



refuse to enter into the Construction Contract or fail to furnish the Performance Bond, Payment Bond or any other Post-Award Submittal, then the Bid Security shall be forfeited to the County in an amount equal to the difference between the amount of Bidder's Bid Amount and the amount for which the County may procure the work from another Bidder plus the costs to the County of redrafting, redrawing and republishing the Bidding Documents.

**4.2.2 Retention by County.** The County will have the right to retain the Bid Security of any Bidder to whom an Award is being considered until either (1) the Construction Contract has been executed and the Performance Bond, Payment Bonds and other Post-Award Submittals have been furnished, or (2) all Bids have been rejected.

**4.2.3 Return by County.** Bid Security of an unsuccessful Bidder will be returned no later than sixty (60) Days after the Award by the County. Bid Security of the successful Bidder will be returned upon signing of a Construction Contract by the Bidder and County and submission by Bidder to the County of the Performance Bond, Payment Bond and other Post-Award Submittals in accordance with the requirements of the Bidding Documents.

### **4.3 SUBMISSION OF BIDS**

**4.3.1 Sealed Envelope.** All copies of the Bidder's Bid, Bid Security and other Bid Submittals shall be enclosed by the Bidder in a sealed opaque envelope. Said envelope, as well as any other, outer envelope or packaging in which said envelope may have been placed by Bidder or the carrier for delivery, shall be addressed and delivered as provided in the Notice Inviting Bids and shall be clearly and conspicuously labeled with the Project name, the Bidder's name and address and the identifying name of the Project as set forth in Paragraph 1.2.1, above.

**4.3.2 Deposit.** Bids shall be hand delivered to, or received by mail at, the Clerk of the Board located on the 1st floor of the County Administrative Center, 4080 Lemon Street, Riverside, CA 92501, at any time Monday through Thursday (excepting Holidays) between the hours of 8:00 a.m. to 5:00 p.m., up to the Bid Closing Deadline of 11:00 p.m. on Thursday, June 21, 2012. Bids must be received at the designated location prior to the Bid Closing Deadline. Bids, or any Bid Submittal comprising a Bid, that is received after the Bid Closing Deadline will be returned unopened.

**4.3.3 Postponement.** The County reserves the right to postpone the Bid Closing Deadline by issuance of an Addendum to the Bidding Documents at any time prior to the Bid Closing Deadline.

**4.3.4 Timely Receipt.** The Bidder assumes full and sole responsibility for timely receipt of its Bid, including its Bid Security and all other Bid Submittals, at the location designated in the Bidding Documents for receipt of Bid.

**4.3.5 Delivery Methods.** Deposit of Bids shall be by hand delivery or mail, only. Oral, telephonic, telegraphic, facsimile or other electronic transmission is not permitted.

### **4.4 WITHDRAWAL OR RESUBMISSION OF BID**

**4.4.1 Before Bid Closing Deadline.** Prior to the Bid Closing Deadline, a Bid may be withdrawn by notice to the County at the place designated for receipt of Bids stated in the Notice Inviting Bids. Such notice shall be in writing and signed by the Bidder. Partial withdrawal of a Bid or any Bid Submittal is not permitted.

**4.4.2 After Bid Closing Deadline.** Except as otherwise permitted by these Instructions to Bidders, each Bid shall constitute an offer that shall remain open for a period of sixty (60) Days after the Bid Closing Deadline and during that period of time shall not, without the written consent of the County, be modified, withdrawn or canceled by the Bidder.

4.4.3 **Resubmission.** Withdrawn Bids may be resubmitted up to the Bid Closing Deadline.

4.4.4 **Bid Security.** If a Bid is withdrawn and re-submitted, the amount of Bid Security shall be based on the Bid Amount based on the Bid as resubmitted.

**4.5 BID ALTERNATES**

4.5.1 **Alternates.** The Bidding Documents  do  do not include Alternates.

4.5.2 **Bid Form.** If Alternates are included in the Bidding Documents, then a Bid amount for each and every such Alternate shall be included in the spaces provided in the Bid Form for that purpose. If the Bidder determines that the Alternate does not affect the amount of its Base Bid, then the Bidder shall enter "No Change" in the Bid Form.

4.5.3 **Basis for Award.** Where the Bidding Documents include Alternates, the method checked in the box provided below will be used to determine the lowest Bid price (only wording following a checked box applies):

**Award Method #1:** The lowest Bid price shall be the lowest Base Bid price without consideration of the Bidder's prices on the Alternates.

**Award Method #2:** The lowest Bid price shall be the lowest total of the Base Bid price and the following Alternates that will be used for the purpose of determining the lowest Bid price:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

**Award Method #3:** The lowest Bid price shall be the lowest total of the Base Bid price and the following Alternates taken in the order as shown below which, when the Bidder's amount for the Alternate is added to or deducted from such Base Bid price, are less than, or equal to, the funding amount publicly disclosed by the County before the first Bid is opened:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

**Award Method #4:** The lowest Bid price shall be determined in a manner that will prevent any information that would identify any of the Bidders or any of their Subcontractors from being revealed to the County before the ranking of Bidders from lowest to highest has been determined.

4.5.4 **Bid Escrow Provisions.** The following provisions apply only if Subparagraph 4.5.4.1, below, provides that a Bid Escrow will be used for the Project.

.1 **Bid Escrow.** A Bid Escrow  will  will not be used for the Project.

**.2 Escrow Bid Documents.** Escrow Bid Documents, as that term is defined in the General Conditions, shall: (1) be in English; (2) be legible; (3) be detailed and comprehensive, showing a complete breakdown of quantities, prices, productivity calculations, crew sizes, direct and repair labor, plant and equipment usage, general conditions (i.e., direct overhead) costs, indirect overhead and profit and contingencies, and all other numerical factors used to compute the Bid (provided, however, with respect to Bid items having an estimated cost under \$10,000, estimated unit costs are acceptable without detailed cost estimates provided that the indirect costs, contingencies and markups are shown and allocated); (4) if estimates are based, in whole or in part, on a Geological Baseline Report (GBR) or other report on surface or subsurface conditions at the Site, clearly reference any statements, data, opinions or recommendations used or relied upon from the GBR or such other report; and (5) if the Bidder's Bid is based on a price from a Sub-Bidder that exceeds five percent (5%) of the Bid Amount, provide documentation and electronic files from such Sub-Bidder relating to its bid submitted to Bidder that comply with all of the requirements herein for Escrow Bid Documents, in which case such documents and electronic files from such Sub-Bidder shall be considered and submitted by Bidder as part of the Escrow Bid Documents that are required to be submitted pursuant to this Paragraph 4.5.4.

**.3 Deposit with County.** Each of the Bidders submitting the apparent three (3) lowest Bid prices shall place its Escrow Bid Documents in a sealed container, marked on the outside with (1) the words "Escrow Bid Documents", (2) the name of the Project, (3) Bidder's name and (4) the date of submission. The sealed container with the Escrow Bid Documents shall be delivered by such Bidders to the County, at the place for submission of Bids, within twenty-four (24) hours after the Bid Closing Deadline.

**.4 Review by County.** County will review the Escrow Bid Documents of the apparent successful Bidder to ensure that the Escrow Bid Documents comply with the requirements of this Paragraph 4.5.4, and any other requirements of the Bidding Documents relating to use of a bid escrow. Such review shall not constitute approval or acceptance by County of the proposed means, methods, techniques or procedures of the Bidder, confirmation by County that the Escrow Bid Documents comply with the Bidding Documents, nor shall such review or alter any term or condition of the Contract Documents.

**.5 Noncompliance by Bidder.** Failure by Bidder to comply with any of the requirements of this Paragraph 4.5.4 or any other requirements of the Bidding Documents relating to use of a bid escrow shall be grounds for County to determine that the Bidder's Bid is non-responsive. Without limitation to the foregoing, County shall have the right, in the exercise of its sole and absolute discretion, if it finds that the Escrow Bid Documents submitted by a Bidder do not so comply to: (1) direct that the Bidder submit the required documentation and electronic files within twenty-four (24) hours of written request by County; and/or (2) discuss with the Bidder any questions that may exist concerning the Escrow Bid Documents in an effort to clarify and reconcile the information contained in the Escrow Bid Documents.

**.6 Escrow Procedure.** The Escrow Bid Documents of the successful Bidder receiving the Award shall be placed and held in storage at a safe and secure location, at the expense of County, for the duration of the performance of the Work and until the later of (1) ninety (90) Days after Final Completion is achieved or (2) final resolution by settlement or final judgment in legal proceedings of all disputes relating to the Construction Contract or Work (the "Escrow Bid Documents Storage Period"). Escrow Bid Documents of the unsuccessful Bidders will be returned to them within sixty (60) Days following Award. Upon expiration of the Escrow Bid Documents Storage Period, County shall destroy or return to Bidder, and shall not retain, copies of that Bidder's Escrow Bid Documents. County will take reasonable steps to protect and preserve the Escrow Bid Documents from damage; however, County shall not be liable for damage or loss occasioned by circumstances beyond the reasonable control of County, such as, without limitation, fire or Acts of God.

**.7 Bidder's Warranty and Representation.** Submission by a Bidder of its Escrow Bid Documents shall constitute a warranty and representation by such Bidder that it has no other written

documents or electronic files containing information used in computing its Bid that are within the definition of Escrow Bid Documents as defined in the Bidding Documents and that Bidder agrees, in the event it receives Award of the Construction Contract, that it shall have no right to submit or offer into evidence in any legal proceedings in support of any request for Contract Adjustment, Claim or other request for any legal remedy or relief, any documentation or electronic files constituting Escrow Bid Documents that were not included in the Escrow Bid Documents submitted by Bidder.

**.8 Not Contract Documents.** The contents of the Escrow Bid Documents shall not be considered part of the Contract Documents.

**.9 Property Rights, Confidentiality.** The Escrow Bid Documents are, and shall always remain, the property and confidential information of the Bidder, subject to rights of review by the County and Bidder and other Permitted Uses as further described below. To the maximum extent permitted by Applicable Laws, County shall safeguard the Escrow Bid Documents, and all information contained therein, against disclosure and in so doing shall not disclose the Escrow Bid Documents to anyone who is not an employee, attorney or consultant of the County having a reason and need to review the Escrow Bid Documents in connection with one or more of the Permitted Uses.

**.10 Permitted Uses.** The Escrow Bid Documents may be opened, examined and used at any time by County or Bidder (including, without limitation, admission into evidence in any legal proceedings) for the purposes of aiding in an evaluation by County or Bidder, or a resolution by negotiation, settlement or legal proceedings, of a dispute between County and Bidder involving: (1) the submission or content of the Escrow Bid Documents submitted by Bidder; (2) a request by Bidder for relief from its Bid or for relief from any other obligation of Bidder in connection with the bidding process; (3) questions or disputes over the Bidder's right to, or the terms of, a Contract Adjustment; or (4) a Claim or other demand by County or Bidder for a legal remedy or recovery of money ("Permitted Uses"). Escrow Bid Documents shall not be used for any other purpose.

**.11 Examination.** Examination of the Escrow Bid Documents shall be in the presence of a representative of both County and Contractor unless a party fails, after reasonable notice from the party seeking to examine the Escrow Bid Documents, to arrange for a representative to be present, in which case the examination may take place by the requesting party alone. Copies of any portion of the Escrow Bid Documents may be made by either County or Bidder at the time of examination.

## **ARTICLE 5 CONSIDERATION OF BIDS**

### **5.1 OPENING OF BIDS**

All Bids shall be publicly opened and read aloud at the location for receipt of Bids on the Day of the Bid Closing Deadline. Without limitation to the County's right to reject all Bids, if two or more responsive Bids from responsible Bidders are the same and lowest, then the successful Bidder may be chosen by the County.

### **5.2 REJECTION OF BIDS**

**5.2.1 Rejection of Bid.** Any Bid that is in any way incomplete or irregular is subject to rejection by County.

**5.2.2 Rejection of All Bids.** The County has the right to reject all Bids, with or without extending the opportunity to any Bidder to re-bid.

### 5.3 WAIVER OF IRREGULARITIES

The County has the right to waive informalities and irregularities in a Bid received or in the bidding process.

### 5.4 AWARD

**5.4.1 Basis of Award.** It is the intent of the County to Award the Construction Contract to the responsible Bidder submitting a Bid in accordance with the requirements of the Bidding Documents for the lowest Bid Amount.

**5.4.2 Notice of Award.** Within fourteen (14) Days following public opening and reading of Bids, the County will issue a Notice of Intent to Award identifying the name of the Bidder to whom the County intends to Award the Construction Contract. Such notice will be mailed to all Bidders submitting a Bid. The County may, in its sole and absolute discretion, elect to extend the time for its issuance of its Notice of Intent to Award.

**5.4.3 Bid Protests.** Any Bidder submitting a Bid to the County may file a protest of the County's proposed Award of the Construction Contract provided that each and all of the following are complied with:

.1 The bid protest is in writing.

.2 The bid protest is both: (1) filed with and received by the Clerk of the Board at the following address, 4080 Lemon St. 1st Floor Riverside, CA 92501, not more than five (5) Days following the date of issuance of the Notice of Intent to Award. Failure to timely file and serve the bid protest as aforesaid shall constitute grounds for the County's denial of the bid protest without consideration of the grounds stated therein.

.3 The written bid protest sets forth, in detail, all grounds for the bid protest, including without limitation all facts, supporting documentation, legal authorities and argument in support of the grounds for the bid protest. Any grounds not set forth in the bid protest shall be deemed waived. All factual contentions must be supported by competent, admissible and credible evidence. Any bid protest not conforming to the foregoing shall be rejected as invalid.

.4 Provided that a bid protest is filed in conformity with the foregoing, the Assistant CEO/EDA, or such individual(s) as may be designated by the Assistant CEO/EDA in his/her discretion, shall review and evaluate the basis of the bid protest, and shall provide a written decision to the Bidder submitting the bid protest, either concurring with or denying the bid protest. The written decision of the Assistant CEO/EDA or his/her designee shall be final, unless overturned by the Board of Supervisors.

## ARTICLE 6 POST- AWARD

### 6.1 POST- AWARD SUBMITTALS

**6.1.1 Construction Contract.** The Bidder identified in the Notice of Intent to Award as the successful Bidder to receive Award by the County shall execute the Construction Contract and return it to the County within five (5) Days after issuance by County to Bidder of the Construction Contract from the County and prior to execution of the Construction Contract by County.

**6.1.2 Other Post-Award Submittals.** Within the time periods set forth below, the Bidder identified in the Notice of Intent to Award as the successful Bidder shall submit the following additional

Post-Award Submittals, completed and signed in the manner required by the Bidding Documents, to the County at text:

.1 within ten (10) Days after issuance by County to Bidder of the Notice of Intent to Award and prior to commencement of the Work, such Bidder shall submit to County the following:

- (1) Performance Bond and Payment Bond (issued by Surety);
- (2) Evidence of Insurance, in the form specified in the Bidding Documents;
- (3) Workers' Compensation Certificate, in the form specified in the Bidding Documents;
- (4) Declaration of Sufficiency of Funds (required only if the Bidder has not entered into a collective bargaining agreement covering the workers to be employed for performance of the Work), in the form specified in the Bidding Documents;

.2 within twenty-one (21) Days after issuance by County to Bidder of the Notice of Intent to Award, such Bidder shall submit to the County the following:

- (1) Construction Schedule, prepared by Bidder in the manner required by Section 3.9 of the General Conditions and Section text of the Specifications; and
- (2) Schedule of Values, prepared by Bidder in the manner required by Section 9.3 of the General Conditions and Section text of the Specifications.

**6.1.3 Failure to Submit.** Failure of the successful Bidder to submit any the Post-Award Submittals specified in Paragraphs 6.1.1 and 6.1.2, above, within the time periods specified therein shall be deemed to be a failure or refusal to execute the Construction Contract and shall be cause for forfeiture of such Bidder's Bid Security.

## **6.2 BIDDER RESPONSIBILITY**

County reserves the right to request that any Bidder submit, as a condition of Award, information demonstrating that the Bidder and/or any of the Subcontractors listed in the Designation of Subcontractors submitted by Bidder, is financially and in all other respects possessed of the attributes of trustworthiness, as well as quality, fitness, capacity and experience, to satisfactorily perform under the terms and conditions of the Bidding Documents, Contract Documents and its Bid. Bidder shall comply with such request by submitting the information requested within five (5) Days of receipt of County's request. Failure to do so may be treated by County as a grounds to reject Bidder's Bid. Failure by the County to make such a request shall not constitute a waiver of its right to determine that Bidder or any such Subcontractor is not responsible to perform the Work.

## **ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND**

### **7.1 BOND REQUIREMENTS**

**7.1.1 Performance and Payment Bonds.** The successful Bidder will be required to furnish: (1) a Performance Bond in the form included in the Bidding Documents guaranteeing faithful performance of all obligations under the Construction Contract; and (2) a Payment Bond that complies with the requirements of Civil Code Section 3248 in the form included in the Bidding Documents. The penal sums of the Performance Bond and Payment Bond shall each be initially in the amount of one hundred percent (100%) of the Contract Price. The penal sum shall be increased for Contract Adjustments increasing the Contract Price that are authorized by Change Order or Unilateral Change Orders.

**7.1.2 Cost of Bonds.** The cost of Performance Bonds and Payment Bonds shall be deemed included in the amount of a Bidder's Bid.

**7.1.3 Surety.** Both the Performance Bond and Payment Bond shall be issued by an Admitted Surety. The Surety on the Performance Bond shall have an A.M. Best's Insurance Rating of A:VIII (A:8) or better.

## **7.2 TIME OF DELIVERY AND FORM OF BONDS**

**7.2.1 Submission by Bidder.** Within the time period set forth in Subparagraph 6.1.2.1, above, the successful Bidder shall deliver the required Performance Bond and Payment Bond to the County fully executed and issued by the Bidder's Surety(ies).

**7.2.2 Execution of Bonds.** Notary acknowledgements of the signatures of the Bidder and Surety(ies) is required. The attorney-in-fact who executes the required Performance Bond or Payment Bond on behalf of a Surety shall affix thereto a certified and current copy of the power of attorney authorizing such attorney-in-fact to execute same on behalf of such Surety.

## **ARTICLE 8 CONSTRUCTION CONTRACT**

### **8.1 EXECUTION OF CONTRACT**

The successful Bidder shall execute the Construction Contract in the form included in the Bidding Documents.

### **8.2 BOARD APPROVAL**

The Construction Contract shall not be binding upon the County until it has been awarded by the Assistant CEO/EDA or Board of Supervisors, and executed by the Board Chair, or designee.

## BID FORM

**TO THE GOVERNING BOARD OF THE COUNTY OF RIVERSIDE:**

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

Bidder: \_\_\_\_\_

The undersigned Bidder, having carefully examined the Bidding Documents for the following Project:

Department of Mental Health, 14th Street Office Tenant Improvement,

including, without limitation, the Plans and Specifications made part thereof, and taking into consideration all matters disclosed thereby, all matters of which Bidder is charged with knowledge by the terms thereof and all matters that are reasonably ascertainable by Bidder in the exercise of its duties of inquiry or investigation created by the terms set forth in the Bidding Documents (including, without limitation, the terms of Section 3.2 of the General Conditions, proposes, agrees to furnish in strict accordance with the Contract Documents all of the following:

- labor, materials, equipment, services, transportation;
- permits, licenses and taxes,
- **Builder's Risk (Course of Construction) Insurance coverage in accordance with the terms of Subparagraph 11.1.1.5 of the General Conditions;** and
- all other work, services and other things necessary for the undersigned to perform its obligations under the Contract Documents, excepting only those that are expressly stated in the Bidding Documents to be the responsibility of County,

for the total Base Bid price of (state in figures) \$ \_\_\_\_\_ (state in words) \_\_\_\_\_ dollars  
and \_\_\_\_\_ cents.

The foregoing Base Bid is submitted based upon and taking into consideration all of modifications and additions to the Bid Documents and other information set forth in each Addendum listed below, receipt and review of which is hereby acknowledged by Bidder (state below each and every Addendum number and date):

Addendum No.		Date:	
Addendum No.		Date:	
Addendum No.		Date:	
Addendum No.		Date:	
Addendum No.		Date:	
Addendum No.		Date:	
Addendum No.		Date:	



Subject to County's acceptance of such Alternate(s) in the manner set forth in the Instructions to Bidders, the foregoing Base Bid shall be adjusted as hereinafter stated for the following Alternates set forth in the Bidding Documents and/or the above-listed Addenda:

State Amount (in words and figures)	State if Amount is an "Add" or "Deduct" to Base Bid or, if Base Bid is Not Affected, Enter "No Change"
<b>Alternate 1: Course of Construction Insurance</b>	
Figures: \$ _____	<input type="checkbox"/> Add <input type="checkbox"/> Deduct <input type="checkbox"/> No Change
Words: _____	
Dollars _____ Cents _____	
<b>Alternate 2: N/A</b>	
Figures: \$ _____	<input type="checkbox"/> Add <input type="checkbox"/> Deduct <input type="checkbox"/> No Change
Words: _____	
Dollars _____ Cents _____	
<b>Alternate 3: N/A</b>	
Figures: \$ _____	<input type="checkbox"/> Add <input type="checkbox"/> Deduct <input type="checkbox"/> No Change
Words: _____	
Dollars _____ Cents _____	
<b>Alternate 4: N/A</b>	
Figures: \$ _____	<input type="checkbox"/> Add <input type="checkbox"/> Deduct <input type="checkbox"/> No Change
Words: _____	
Dollars _____ Cents _____	
<b>Alternate 5: N/A</b>	
Figures: \$ _____	<input type="checkbox"/> Add <input type="checkbox"/> Deduct <input type="checkbox"/> No Change
Words: _____	
Dollars _____ Cents _____	
<b>Alternate 6: N/A</b>	
Figures: \$ _____	<input type="checkbox"/> Add <input type="checkbox"/> Deduct <input type="checkbox"/> No Change
Words: _____	
Dollars _____ Cents _____	

**THE UNDERSIGNED BIDDER HEREBY MAKES THE FOLLOWING REPRESENTATIONS AND COVENANTS:**

1. Except as otherwise permitted by the Instructions to Bidders, this Bid shall remain open for a period of sixty (60) Days after the Bid Closing Deadline (as defined in the Bidding Documents) and during that period of time shall not, without the written consent of County, be modified, withdrawn or canceled by the Bidder.

2. Bidder adopts and incorporates into this Bid all of the representations set forth in the Instructions to Bidders and hereby warrants that all such representations are true and correct.

3. The Bid Security submitted by Bidder is given as a guarantee that if Award of the Construction Contract that is the subject of this Bid is made to Bidder that Bidder will execute the Construction Contract and furnish the Performance Bond, Payment Bonds, evidence of insurance and other documents that Bidder is required to submit under the terms of the Bidding Documents, and in the event that the Bidder fails or refuses to execute and deliver same, such Bid Security shall be charged with the all losses and damages suffered by County as a result thereof and permitted by Applicable Law, including, without limitation, the difference between the amount of the Bid and amount for which the County may legally contract with another party to perform the Project (if such latter amount be greater than the Bid), costs of publication, and all other Losses suffered by County (including, without limitation, those associated with Delay to the Project).

4. Capitalized terms used in this Bid Form shall have the meanings assigned to them in the Bidding Documents.

**Individual Bidder**

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

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

(signature)

Print Name: \_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

Business Fax: \_\_\_\_\_

Business E-mail: \_\_\_\_\_

**Corporation Bidder**

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

State of Incorporation: \_\_\_\_\_

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

(signature)

Print Name: \_\_\_\_\_

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

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

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

\_\_\_\_\_

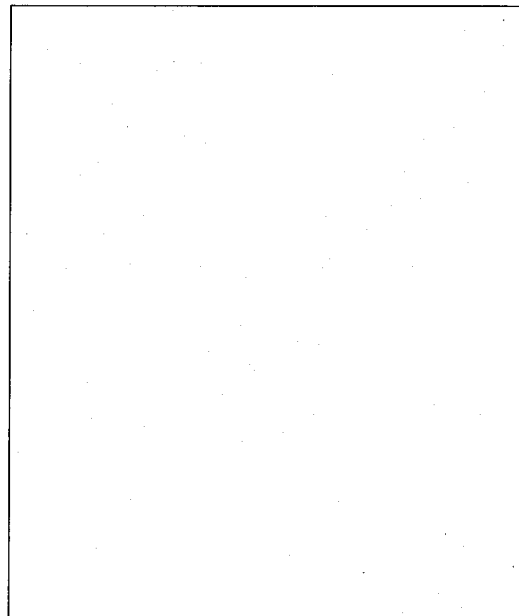
\_\_\_\_\_

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

Business Fax: \_\_\_\_\_

Business E-mail: \_\_\_\_\_

Space for Corporate Seal and Attestation



**Partnership Bidder**

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

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

(signature)

Print Name: \_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

Business Fax: \_\_\_\_\_

Business E-mail: \_\_\_\_\_

If additional partners are signing, attach additional sheets setting forth the above signature information for each signing partner.

If the partner or partners signing on behalf of the Bidder is/are a corporation, then for each such corporate partner complete the following (attach additional sheets, if necessary):

Corporate Name  
of Partner: \_\_\_\_\_

State of Incorporation: \_\_\_\_\_

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

(signature)

Print Name: \_\_\_\_\_

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

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

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

\_\_\_\_\_

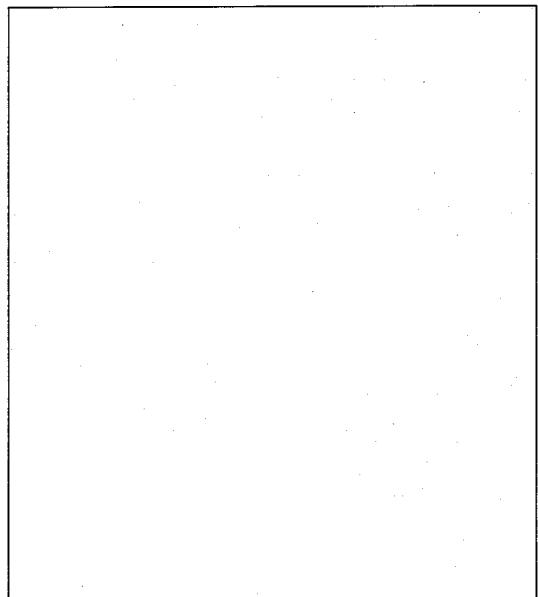
\_\_\_\_\_

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

Business Fax: \_\_\_\_\_

Business E-mail: \_\_\_\_\_

Space for Corporate Seal and Attestation



**Joint Venture Bidder**

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

By: \_\_\_\_\_  
(signature)

Print Name: \_\_\_\_\_

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

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

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

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

Business Fax: \_\_\_\_\_

Business E-mail: \_\_\_\_\_

If additional joint venture partners are signing, attach additional sheets setting forth the above signature information for each signing joint venture partner.

If the joint venture partner or partners signing on behalf of the Bidder is/are a corporation, then for each such corporate joint venture partner complete the following (attach additional sheets, if necessary):

Corporate Name  
of Partner: \_\_\_\_\_

State of Incorporation: \_\_\_\_\_

By: \_\_\_\_\_  
(signature)

Print Name: \_\_\_\_\_

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

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

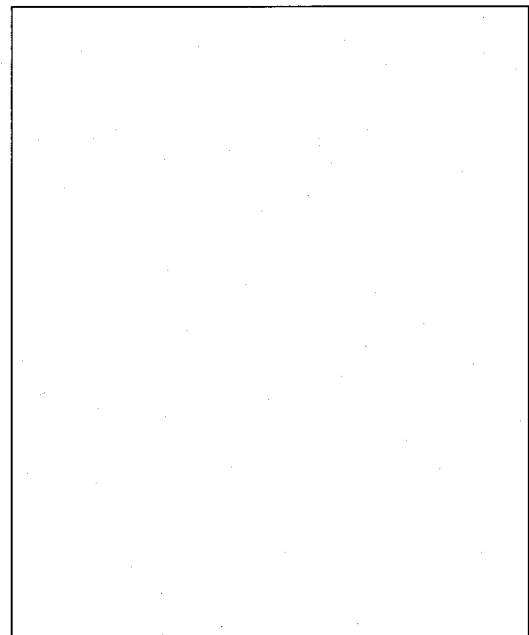
Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Business Fax: \_\_\_\_\_

Business E-mail: \_\_\_\_\_

Space for Corporate Seal and Attestation



Project No. \_\_\_\_\_

Bond No. \_\_\_\_\_

**BID BOND**

(Public Work – Public Contract Code Section 20129 (a))

KNOW ALL MEN BY THESE PRESENTS THAT:

WHEREAS, The undersigned \_\_\_\_\_ (“Principal”) is herewith submitting to the County of Riverside (“County”) a Bid dated \_\_\_\_\_ 20\_\_, in the amount of (\$ \_\_\_\_\_) [Enter amount of Principal’s Bid Amount, as defined in the Instructions to Bidders] (“Bid Amount”) for the award by County to Principal of a contract (“Contract”) for the following: Department of Mental Health, 14th Street Office Tenant Improvement (“Project”);

AND, WHEREAS, Principal is obligated as a condition of said Bid to submit security pursuant to Public Contract Code Section 20129 (a) in the amount of ten percent (10%) of the Bid Amount, which security may be in the form of a Bid Bond issued by an admitted surety insurer pursuant to Code of Civil Procedure Section 995.120 (“Admitted Surety”);

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

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that if Principal is awarded the Contract upon such Bid and thereafter within the period of time specified in County’s bidding documents governing the bidding process applicable to such Bid (“Bidding Documents”) enters into the Contract with County on the terms and conditions required by the Bidding Documents and furnishes the performance and payment bonds, evidence of insurance and other documents that Principal is required to submit under the terms of the Bidding Documents, then this obligation shall be null and void; otherwise, it shall remain in full force and effect and the sum guaranteed by this bond shall, at the option of County, be forfeited to County to pay all losses and damages suffered by County as a result thereof and permitted by applicable law, including, without limitation, the difference between the Bid Amount and amount for which the County may legally contract with another party to perform the Work (if such latter amount be greater than the Bid Amount), costs of publication, and all other losses and damages suffered by County (including, without limitation, those associated with delay to the Project); provided, however, that Surety’s liability shall not exceed the penal amount of this bond.

Surety, for value received, hereby agrees that no change, extension of time, alteration or addition to

the terms of the Contract or the Bidding Documents, or to the work to be performed thereunder, nor any withdrawal of the Bid in a manner not permitted by the requirements of the Bidding Documents shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

In the event any legal proceeding or arbitration is brought upon this bond by County and judgment or award is entered in favor of County as the prevailing party, Surety shall pay all costs and attorney's fees incurred by the County.

IN WITNESS WHEREOF the undersigned parties have executed this instrument under their several seals this day of \_\_\_\_\_, 20\_\_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**Affix Seal if Corporation**

\_\_\_\_\_  
**(Firm Name – Principal)**  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**  
\_\_\_\_\_

**By** \_\_\_\_\_  
**(Original Signature)**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**(Corporation Name – Surety)**  
\_\_\_\_\_  
\_\_\_\_\_

**Affix Corporate Seal**

\_\_\_\_\_  
**(Business Address)**  
\_\_\_\_\_

**By** \_\_\_\_\_  
**(Original Signature)**  
**ATTORNEY-IN-FACT**  
\_\_\_\_\_

**Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety's Power of Attorney, must be included or attached**

## BID SECURITY RECEIPT

The undersigned Bidder has submitted as Bid Security for its Bid in the form of (check appropriate box):

- Bid Bond executed by an Admitted Surety, made payable to the County of Riverside,
- cash,
- cashier's check payable to the order of the County of Riverside, or
- certified check payable to the order of the County of Riverside,

in the amount of \_\_\_\_\_  
dollars/\_\_\_\_\_ cents (\$\_\_\_\_\_), which amount is equal to ten percent (10%)  
of the Bidder's Bid Amount, as defined in the Instructions to Bidders.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name of Bidder

\_\_\_\_\_  
Print Name of Signer



## DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (Chapter 4, commencing at Section 4100, Division 2, Part 1 of the Public Contract Code of the State of California) and any amendments thereto ("Act"), Bidder sets forth below the information required by the Act for those Subcontractors who are required to be listed by Bidder pursuant to the provisions of the Act [Insert information requested. Attach additional sheets, if needed.]:

<u>Portion of Work</u>	<u>Subcontractor Name</u>	<u>Location</u>

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

\_\_\_\_\_  
(Name of Bidder)

By: \_\_\_\_\_  
(Signature of Bidder)

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

**NON-COLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND  
SUBMITTED WITH BID**

**(Public Contract Code Section 7106)**

The undersigned declares:

I am the \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder 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. 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.

All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price of any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on \_\_\_\_\_ [date], at \_\_\_\_\_ [city], \_\_\_\_\_ [state].

\_\_\_\_\_  
[Signature of Declarant]

\_\_\_\_\_  
[Printed Name of Person Signing]

\_\_\_\_\_  
[Name of Bidder]

\_\_\_\_\_  
[Office or Title]

## Iran Contracting Act (Public Contract Code sections 2200-2208)

In accordance with Public Contract Code Section 2204(a), prior to bidding on, submitting a proposal or executing a contract or renewal for a County of Riverside contract for goods or services of \$1,000,000 or more, a Contractor must either:

- a) Certify it is not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b) and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or
- b) Demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code section 2203(c) or (d).

To comply with this requirement, please insert your Contractor or financial institution name and Federal ID Number (if available) and complete one of the options below. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (Public Contract Code section 2205.)

### **Option #1 – Certification**

I, the official named below, certify I am duly authorized to execute this certification on behalf of the Contractor/financial institution identified below, and the Contractor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

<i>Contractor Name/Financial Institution (Printed)</i>		<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		
<i>Date Executed</i>	<i>Executed in</i>	

**Option #2 – Exemption**

Pursuant to Public Contract Code sections 2203(c) and (d), a public entity may permit a Contractor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enters into or renews, a contract for goods and services. If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

<i>Contractor Name/Financial Institution (Printed)</i>		<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		
<i>Date Executed</i>	<i>Executed in</i>	



**STANDARD FORM OF CONSTRUCTION CONTRACT BETWEEN  
COUNTY AND CONTRACTOR**

by and between

**CONTRACTOR'S NAME**

(the "Contractor")

And

**THE COUNTY OF RIVERSIDE**

(the "County")

FOR:

**MENTAL HEALTH 14TH STREET OFFICE TENANT IMPROVEMENT**

**3625 14TH STREET, RIVERSIDE, CA.**

**STANDARD FORM OF CONSTRUCTION CONTRACT**  
**BETWEEN COUNTY AND CONTRACTOR**

**THIS STANDARD FORM OF CONSTRUCTION CONTRACT BETWEEN COUNTY AND CONTRACTOR** ("Agreement") is entered into on this text day of July, 2012 by and between **THE COUNTY OF RIVERSIDE**, a political subdivision of the State of California ("County") and To Be Determined, a ("Contractor") whose principal place of business is located at To, Be, Determined.

**ARTICLE 1**  
**DEFINITIONS**

Capitalized terms used in the Contract Documents shall have the meanings assigned to them in the General Conditions. If not defined in the General Conditions, they shall have the meanings assigned to them elsewhere in the Contract Documents. If not defined in the General Conditions or elsewhere, they shall have the meanings reasonably understood to apply to them by the context in which they are used.

**ARTICLE 2**  
**PERFORMANCE OF WORK**

**2.1 SCOPE OF WORK**

Contractor shall execute the entire Work called for by the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

**2.2 STANDARD OF PERFORMANCE**

In addition to and without limiting Contractor's other obligations under the Contract Documents, Contractor shall at all times in its performance of its obligations under the Contract Documents conform to the following general standards of performance:

**2.2.1** the requirements of the Contract Documents;

**2.2.2** the requirements and conditions of Applicable Laws;

**2.2.3** the standard of care applicable to those who provide construction of the type called for by this Construction Contract for projects of a scope and complexity comparable to the Project;

**2.2.4** Contractor shall furnish efficient business administration of the Work, utilizing sufficient senior level management and other qualified personnel to manage the Work; and

**2.2.5** Contractor shall apply its best and highest skill and attention to completing the Work in an expeditious and economical manner, consistent with the expressed best interests of the County and within the limitations of the Contract Price and Contract Time.

**ARTICLE 3**  
**CONTRACT TIME**

**3.1 CONTRACT TIME**

**3.1.1 Substantial Completion.** Subject to Contract Adjustments permitted by the Contract Documents, Contractor shall achieve Substantial Completion of the entire Work not later than one hundred eighty (180) Days after the Date of Commencement.

**3.1.2 Final Completion.** Subject to Contract Adjustments permitted by the Contract Documents, Contractor shall achieve Final Completion of the Work not later than forty five (45) Days after the actual occurrence of Substantial Completion.

**3.1.3 Contract Adjustments.** The Contract Time shall be extended or shortened only in accordance with the provisions of the Contract Documents governing Contract Adjustments to the Contract Time.

### **3.2 LIQUIDATED DAMAGES TO COUNTY**

**3.2.1 County's Right.** County and Contractor acknowledge that if Contractor fails to Substantially Complete the Work within the Contract Time for Substantial Completion, County will suffer substantial Losses, which would be both extremely difficult and impracticable to ascertain. On that basis they agree, as a reasonable estimate of those Losses and not a penalty, to the assessment and recovery by County of liquidated damages under this Section 3.2.

**3.2.2 Per Diem Rate.** If Contractor fails to actually achieve Substantial Completion of the entire Work within the Contract Time for Substantial Completion, Contractor shall pay to County as liquidated damages the amount of seven hundred and fifty Dollars (\$750) per Day for each Day occurring after the expiration of the Contract Time for Substantial Completion until Contractor achieves Substantial Completion of the entire Work.

**3.2.3 Adjustment for Extensions of Time.** Subject to the provisions of Paragraph 8.2.8 of the General Conditions dealing with concurrency of Delays, liquidated damages shall not be charged to Contractor for a period of time for which the Contractor is entitled under the Contract Documents to a Contract Adjustment to the Contract Time for Substantial Completion.

**3.2.4 Partial Completion.** The liquidated damages provided for under this Section 3.2 shall not be reduced or apportioned: (1) for Substantial Completion of portions of the Work prior to Substantial Completion of the entirety of the Work; or (2) if portions of the Work are deleted pursuant to (a) the County's right to order Deleted Work; or (b) a termination by County of a portion of the Construction Contract or a deletion of portion of Work for the convenience of the County or due to an Event of Contractor Default.

**3.2.5 Remedies.** County may deduct any liquidated damages payable under this Section 3.2 from money due or to become due to Contractor under the Contract Documents, or pursue any other legal remedy to collect such liquidated damages from Contractor and/or its Surety.

**3.2.6 Not a Limitation.** County's rights under this Section 3.2 shall not be interpreted as precluding or limiting: (1) any right or remedy of County arising from an Event of Contractor Default other than a failure to achieve Substantial Completion of the Work within the Contract Time for Substantial Completion; or (2) County's right to order an acceleration, at Contractor's Own Expense, of performance of the Work to overcome Delay, including, without limitation, a Delay for which County has the right to assess liquidated damages under this Section 3.2.

### **3.3 LIQUIDATED DAMAGES TO CONTRACTOR**

**3.3.1 Contractor's Right.** County and Contractor acknowledge and agree that if Contractor is unable due to Compensable Delay to actually achieve Substantial Completion of the Work within the Contract Time for Substantial Completion, Contractor and its affected Subcontractors will suffer Losses that would be both extremely difficult and impracticable to ascertain. On that basis they agree, as a reasonable estimate of those Losses and not a penalty, to the payment by County to Contractor of liquidated damages under this Section 3.3.

**3.3.2 Daily Rate.** Subject to the provisions of Paragraph 8.2.8 of the General Conditions dealing with concurrency of Delays, the Contract Price shall be increased by Change Order or Unilateral Change Order in the amount of seven hundred and fifty Dollars (\$750) per Day as liquidated damages for each Day for which Contractor is entitled under the Contract Documents to a Contract Adjustment extending the Contract Time for Substantial Completion due to Compensable Delay, with no additional amount added thereto or calculated thereon for Allowable Markup or any other markup for overhead or profit to Contractor or any Subcontractor, of any Tier.

**3.3.3 Payment by County.** A Change Order or Unilateral Change Order setting forth a Contract Adjustment to the Contract Price for liquidated damages permitted by this Section 3.3 shall be executed following, and not before, actual Substantial Completion and prior to or contemporaneously with Final Completion. Notwithstanding any other provision of the Contract Documents to the contrary and without limitation to the County's rights of withholding payment to Contractor as permitted elsewhere in the Contract Documents or under Applicable Laws, any amounts due to the Contractor under this Section 3.3 shall be payable as part of, and not prior to the due date for payment of, Final Payment to Contractor.

**3.3.4 Deleted Work.** A Contract Adjustment shall be made pursuant to Subparagraph 8.2.6.2 of the General Conditions reducing the Contract Price and Contract Time in the event that the Contract Time is shortened due to (1) Deleted Work; or (2) a termination by County of a portion of the Construction Contract for convenience or due to an Event of Contractor Default.

**3.3.5 Termination.** County shall have no liability to Contractor to pay any liquidated damages under this Section 3.3, nor shall County have any other liability to Contractor or any Subcontractor for any Loss due to Delay (including, without limitation, Compensable Delay) in the event the Construction Contract is wholly terminated (whether such termination is a termination for cause by County or Contractor or a termination for convenience by County) at any time prior to expiration of the Contract Time for Substantial Completion set forth in Paragraph 3.1.1, above.

**3.3.6 Exclusive Remedy.** Liquidated damages payable by County under this Section 3.3 constitute the Contractor's sole and exclusive right and remedy for recovery from County of Losses to Contractor and its Subcontractors, of every Tier, that are attributable to Compensable Delay, regardless of the cause, duration or timing of the Compensable Delay and no other Contract Adjustment, or other form of compensation or reimbursement, of any kind, shall be made to Contractor or any Subcontractor, of any Tier, for any Loss resulting, directly or indirectly, from, or attributable to, any of the following: (1) Unexcused Delay or acceleration to overcome Unexcused Delay; (2) Excusable Delay or any acceleration not authorized by County in writing to overcome Excusable Delay; or (3) concurrency of a Compensable Delay with any different type or class of Unexcused Delay or Excusable Delay, whether such concurrency is a concurrency in cause or in effect.

**3.3.7 WAIVER BY CONTRACTOR.**

**CONTRACTOR WAIVES THE RIGHT TO FURTHER RECOURSE OR RECOVERY OF COSTS OR DAMAGES BY REASON OF OR RELATED TO ANY DELAY (INCLUDING, WITHOUT LIMITATION, COMPENSABLE DELAY) THAT IS IN EXCESS OF OR NOT RECOVERED BY CONTRACTOR AS PART OF THE LIQUIDATED DAMAGES PAYABLE TO CONTRACTOR UNDER THIS SECTION 3.3.**

**ARTICLE 4  
CONTRACTOR COMPENSATION**

**4.1 CONTRACT PRICE**

**4.1.1 Contract Price.** County shall pay the Contractor in current funds for the Contractor's performance of the Work in accordance with the Contract Documents the Contract Price, exclusive of Contract Adjustments, of To Be Determined Dollars (\$\_\_\_\_\_).

**4.1.2 Basis.** The Contract Price set forth in Paragraph 4.1.1, above, is based on the Bid submitted by Contractor as adjusted for Alternates accepted by County as set forth in Section 4.2, below.

**4.1.3 Adjustments.** The Contract Price is only subject to adjustment as permitted by the General Conditions for Contract Adjustments due to Compensable Changes, Deleted Work or Compensable Delay.

**4.1.4 All-Inclusive Price.** The Contract Price as adjusted for Contract Adjustment permitted by the Contract Documents is the total amount payable by County to Contractor for performance of the Work under the Contract Documents and is deemed to cover all Losses, foreseeable or unforeseeable, arising out of or related to past, present or future circumstances within or outside the control of the Contractor or its Subcontractors affecting the time or cost of performing the Work, including, without limitation, the effects of natural elements upon the Work, unforeseen difficulties or



obstructions affecting the performance of the Work (including, without limitation, unforeseen conditions at the Site that do not constitute Differing Site Conditions) and unforeseen fluctuations in market conditions and price escalations (whether occurring locally, nationally or internationally).

**4.2 ALTERNATES**

The Contract Price includes the following Alternates, which are described in the Contract Documents and are hereby accepted by County:

Number	Description	Dollar Amount

**4.3 UNIT PRICES**

Unit prices agreed to by County and Contractor are as follows:

Description	Measurement Unit	Dollar Amount

**ARTICLE 5  
ENUMERATION OF CONTRACT DOCUMENTS**

**5.1 LIST OF CONTRACT DOCUMENTS**

The Contract Documents include, without limitation, the following:

**5.1.1 Construction Contract.** The Contract Documents include this executed Standard Form of Construction Contract Between County and Contractor.

**5.1.2 General Conditions.** The Contract Documents include the  General Conditions of the Standard Form of Construction Contract Between County and Contractor (Long Form) or  General Conditions of the Standard Form of Construction Contract Between County and Contractor (Short Form).

**5.1.3 Specifications.** The Contract Documents include the following Specifications:

Title	Date	Divisions

**5.1.4 Drawings.** The Contract Documents include the following Drawings dated text, 20xx, unless a different date is shown below:

Sheet Number	Title	Date	Pages

5.1.5 **Addenda.** The Contract Documents include the following Addenda:

Addendum Number	Title	Date	Pages

5.1.6 **Reference Documents.** The Contract Documents include the following Reference Documents:

Title	Author	Date	Pages

5.1.7 List Other Contract Documents, if any

## ARTICLE 6 SPECIAL REQUIREMENTS

### 6.1 LABOR CODE SECTION 1861 CERTIFICATION

By signing below, Contractor certifies that he/she/it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions of the California Labor Code, and that he/she/it will comply with such provisions before commencing the performance of the Work.

**CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS' STATE LICENSE BOARD WHICH HAS JURISDICTION TO INVESTIGATE COMPLAINTS AGAINST CONTRACTORS IF A COMPLAINT REGARDING A PATENT ACT OR OMISSION IS FILED WITHIN FOUR YEARS OF THE DATE OF THE ALLEGED VIOLATION. A COMPLAINT REGARDING A LATENT ACT OR OMISSION PERTAINING TO STRUCTURAL DEFECTS MUST BE FILED WITHIN 10 YEARS OF THE DATE OF THE ALLEGED VIOLATION. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' STATE LICENSE BOARD, P.O. BOX 26000, SACRAMENTO, CALIFORNIA, 95826.**

**IN WITNESS WHEREOF**, the parties hereto have made and executed four (4) originals of this Construction Contract, on \_\_\_\_\_ [to be filled in by Clerk of the Board].

**[SIGNATURES ON FOLLOWING PAGE (PM'S PLEASE EDIT THE POSITIONING OF THIS STATEMENT ACCORDINGLY AND DELETE THIS NON-BOLDED TEXT AFTERWARD)]**

"COUNTY"

COUNTY OF RIVERSIDE

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

Title: Chairperson, Board of Supervisors

RECOMMENDED FOR APPROVAL

\_\_\_\_\_  
Deputy Director

Economic Development Agency

Address:  
Economic Development Agency  
Riverside Centre  
3403 Tenth Street, 4th Floor  
Riverside, CA 92501

ATTEST:

Kecia Harper-Ihem  
Clerk of the Board

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

Deputy

(SEAL)

"CONTRACTOR"

\_\_\_\_\_  
(sign on line above)

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

(type name)

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

The following information must be provided concerning the Contractor:

State whether Contractor is corporation, individual, partnership, joint venture or other:  
\_\_\_\_\_

If "other", enter legal form of business:  
\_\_\_\_\_  
\_\_\_\_\_

Enter address:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Facsimile: \_\_\_\_\_

Email: \_\_\_\_\_

Employer State \_\_\_\_\_

Tax ID #: \_\_\_\_\_

State Contractor License #: \_\_\_\_\_

If Contractor is not an individual or corporation, list names of 4 representatives who have authority to contractually bind Contractor:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If Contractor is a corporation, state:

Name of President: \_\_\_\_\_

Name of Secretary: \_\_\_\_\_

State of Incorporation: \_\_\_\_\_



Project No. \_\_\_\_\_

Bond No. \_\_\_\_\_

## **PAYMENT BOND**

(Public Work - Civil Code Sections 3247 et seq.)

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the County of Riverside ("County") by action of the Board of Supervisors on \_\_\_\_\_, 20\_\_, has awarded Construction Contract Number \_\_\_\_\_ ("Contract") to the undersigned \_\_\_\_\_ as Principal ("Principal") to perform the work ("Work") for the following project Department of Mental Health, 14th Street Office Tenant Improvement;

AND, WHEREAS, said Principal is required by the Contract and/or by Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 3247) of the California Civil Code to furnish a payment bond in connection with the Contract;

NOW THEREFORE, we, the Principal and \_\_\_\_\_ ("Surety"), an admitted surety insurer pursuant to Code of Civil Procedure, Section 995.120, are held and firmly bound unto County in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), this amount being not less than one hundred percent (100%) of the total sum payable by County under the Contract at the time the Contract is awarded by County to the Principal, lawful money of the United States of America, for the payment of which sum well and truly to be made, we, Principal and Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, its heirs, executors, administrators, successors, or assigns approved by County, or its subcontractors, of any contracting tier, shall fail to pay any person or persons named in California Civil Code, Section 3248, then Surety will pay for the same, in or to an amount not exceeding the penal amount hereinabove set forth, and also will pay to the prevailing party if suit is brought upon this bond, reasonable attorney's fees as provided in California Civil Code, Section 3250.

Surety, for value received, agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the Work to be performed thereunder, nor any rescission or attempted rescission of the Contract or this bond, nor any conditions precedent or subsequent in the bond or Contract attempting to limit the right of recovery of any claimant otherwise entitled to recover under the Contract or this bond shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

Surety is not released from liability to those for whose benefit this bond has been given, by reason of any breach of the Contract by County or Principal.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, joint and severally, or against any one or more of them or against less than all of them, without impairing County's rights against the others.

**Affix Seal if Corporation**

\_\_\_\_\_  
**(Firm Name – Principal)**

\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Original Signature)**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**(Corporation Name – Surety)**

**Affix Corporate Seal**

\_\_\_\_\_

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Signature – Attached Notary's Acknowledgment)**

\_\_\_\_\_  
**ATTORNEY-IN-FACT**  
**(Title-Attach Power of Attorney)**

**Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety's Power of Attorney, must be included or attached**

**Affix Seal if Corporation**

\_\_\_\_\_  
**(Firm Name – Principal)**

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

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Original Signature)**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**(Corporation Name – Surety)**

**Affix Corporate Seal**

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

\_\_\_\_\_  
**(Business Address)**

**By** \_\_\_\_\_  
**(Signature – Attached Notary’s Acknowledgment)**

\_\_\_\_\_  
**ATTORNEY-IN-FACT**  
**(Title-Attach Power of Attorney)**

**Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety’s Power of Attorney, must be included or attached**

**CONTRACTOR'S CERTIFICATE REGARDING WORKERS'**  
**COMPENSATION**

Labor Code Section 3700 states:

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

(a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state.

(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employee.

(c) For any county, city, city and county, municipal corporation, public district, public agency, or any political subdivision of the state, including each member of a pooling arrangement under a joint exercise of powers agreement (but not the state itself), by securing from the Director of Industrial Relations a certificate of consent to self-insure against workers' compensation claims, which certificate may be given upon furnishing proof satisfactory to the director of ability to administer workers' compensation claims properly, and to pay workers' compensation claims that may become due to its employees. On or before March 31, 1979, a political subdivision of the state which, on December 31, 1978, was uninsured for its liability to pay compensation, shall file a properly completed and executed application for a certificate of consent to self-insure against workers' compensation claims. The certificate shall be issued and be subject to the provisions of Section 3702.

For purposes of this section, 'state' shall include the superior courts of California."

I am aware of the provisions of Section 3700 of the California 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.

\_\_\_\_\_  
(Name of Contractor)

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

\_\_\_\_\_  
(Name of Signer)

\_\_\_\_\_  
(Signature)

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



## DECLARATION OF SUFFICIENCY OF FUNDS

(California Labor Code Section 2810)

I, the undersigned, an authorized representative of \_\_\_\_\_ ("Bidder") with authority to make the statements contained in this Declaration on behalf of Bidder, hereby declare the following:

1. The Bidder's employer identification number for state tax purposes is \_\_\_\_\_.
2. The Bidder's workers' compensation insurance policy number is \_\_\_\_\_ and the name, address, and telephone number of the insurance carrier providing said insurance is: \_\_\_\_\_  
\_\_\_\_\_

3. The following information is provided concerning any and all vehicles that are owned by the Bidder and that will be used for transportation in connection with any service provided for the performance of the Work that is the subject of the Bidder's Bid [Insert information requested. Attach additional sheets, if needed.]:

<b>Vehicle</b>	<b>Vehicle ID #</b>	<b>Vehicle. Liability Insurance Policy Number (of policy covering vehicle)</b>	<b>Name, Address and Telephone Number of Vehicle Liability Insurance Carrier (issuing policy covering vehicle)</b>

4. The following is the address of any real property that will be used to house workers in connection with the performance of the Work that is the subject of the Bidder's Bid [If no such housing will be provided, enter "none"]: \_\_\_\_\_  
\_\_\_\_\_

5. The actual or estimated number of workers that will be employed to perform the Work that is the subject of the Bidder's Bid, the total amount of wages to be paid to said workers, and the dates on which said wages will be paid are as follows [Attach additional sheets, if needed.]:

<b>Total Number of Workers</b>	<b>Total Amount of Wages</b>	<b>Date(s) for Payment of Wages</b>

6. Check only one of the following boxes, as applicable:

The statement of number of workers declared in Paragraph 5, above, is a statement of the actual number of workers that will be employed.

The actual number of workers requested in Paragraph 5, above, is unknown and therefore the statement of number of workers declared therein is based on the Bidder's best estimate available at the time of submitting its Bid, rather than the actual number of workers that will be employed and if and when the actual number of workers and the other information requested above is available, it will be reported to the County of Riverside by Bidder in writing.

7. The actual or estimated total number of persons who will be utilized as independent contractors to perform the Work of the Project that is the subject of the Bidder's Bid (together with their known, current local, state, and federal contractor license identification numbers that each is required to have under local, state or federal laws or regulations) are as follows [Attach additional sheets, if needed.]:

<b>List of Independent Contractors</b>	<b>Current, local, state and federal contractor license identification number</b>

8. Check only one of the following boxes, as applicable:

The statement of number of independent contractors declared in Paragraph 7, above, is a statement of the actual number of independent contractors that will be utilized.

The actual number of independent contractors requested in Paragraph 7, above, is unknown and therefore the statement of number of independent contractors declared therein is based on the Bidder's best estimate available at the time of submitting its Bid, rather than the actual number of independent contractors that will be utilized, and if and when the actual number of independent

contractors and the other information requested above is available, it will be reported to the County of Riverside by Bidder in writing.

I, the undersigned, declare under penalty of perjury that the foregoing statements are within my personal knowledge and are true and correct. Executed on this \_\_\_\_\_ day of \_\_\_\_\_, in the year 20\_\_ at \_\_\_\_\_, California.

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
Type Name of Signer:

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

## **SUBSTITUTION REQUEST FORM**

ONLY ONE (1) REQUEST FOR SUBSTITUTION FOR EACH PRODUCT WILL BE CONSIDERED.  
USE A SEPARATE SUBSTITUTION REQUEST FORM FOR EACH PROPOSED SUBSTITUTION.

**TO:** COUNTY OF RIVERSIDE  
**PROJECT:** \_\_\_\_\_  
**PROJECT NO.:** \_\_\_\_\_

Bidder requests Substitution of the following material, product, thing or service:

<b>Specification Section</b>	<b>Article No.</b>
<b>Specified Item</b>	<b>Address</b>
<b>Manufacturer's Name</b>	<b>Model or Catalog Number</b>
<b>Trade Name of Product</b>	<b>Specified Fabricators and Suppliers</b>

For each proposed Substitution, list below where in the Specifications the item to be replaced is currently specified, the item specified in the Specifications and that is proposed to be replaced by the Substitution and a brief description of the proposed Substitution:

Specification Reference	Specified Item	Proposed Substitution

**Respond to each of the following questions, attaching additional sheets if required:**

In the case of a manufactured material, product or thing, does the manufacturer certify that the proposed Substitution is appropriate for use as an "equal" to the material, product, or thing specified?  Yes  No

If so, attach such certification.

by County as hereinafter set forth, in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract (including, without limitation, all obligations with respect to payment of liquidated damages) less the "Balance of the Contract Price" (as hereinafter defined); subject to the penal amount of this bond as set forth above. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by County under the Contract and any modifications thereto, less the amount previously paid by County to the Principal and less amounts that County is authorized to withhold under the terms of the Contract.

If County determines that completion of the Contract by Surety or its agents or independent contractors must be performed by a lowest responsible bidder selected pursuant to a competitive bidding process, then Surety shall comply with such processes in accordance with the requirements of County and applicable laws. Unless otherwise approved by District, in the exercise of its sole and absolute discretion, Surety shall not utilize Principal in completing performance of the Work.

No right of action shall accrue on this bond to or for the use of any person or entity other than County or its successors or assigns.

In the event any legal proceeding or arbitration is brought upon this bond by County and judgment or award is entered in favor of County as the prevailing party, Surety shall pay all costs and attorney's fees incurred by the County.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

Surety, for value received, agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder, shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, joint and severally, or against any one or more of them or against less than all of them, without impairing County's rights against the others.

Project No. \_\_\_\_\_

Bond No. \_\_\_\_\_

## **PERFORMANCE BOND**

(Public Work – Public Contract Code Section 20129 (b))

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the County of Riverside ("County") by action of the Board of Supervisors on \_\_\_\_\_, 20\_\_, has awarded Construction Contract Number \_\_\_\_\_ ("Contract") to the undersigned \_\_\_\_\_ as Principal ("Principal") to perform the work ("Work") for the following project: Department of Mental Health, 14th Street Office Tenant Improvement, which Contract is by this reference hereby incorporated herein and made a part hereof;

AND, WHEREAS, said Principal is required by the Contract and/or by California Public Contract Code, Section 20129 (b) to furnish a performance bond for the faithful performance of the Contract;

NOW THEREFORE, we, the Principal and \_\_\_\_\_ ("Surety"), an admitted surety insurer pursuant to Code of Civil Procedure, Section 995.120, are held and firmly bound unto County in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), this amount being not less than one hundred percent (100%) of the total sum payable by County under the Contract at the time the Contract is awarded by County to the Principal, lawful money of the United States of America, for the payment of which sum well and truly to be made, we, Principal and Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, its heirs, executors, administrators, successors or assigns approved by County, shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions and agreements in the Contract, including, without limitation, all obligations during the original term and any extensions thereof as may be granted by County, with or without notice to Surety thereof (including, without limitation, the obligation for Principal to pay liquidated damages), all obligations during the period of any warranties and guarantees required under the Contract and all other obligations otherwise arising under the terms of the Contract (such as, but not limited to, obligations of indemnification), all within the time and in the manner therein designated in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

Whenever Principal shall be, and is declared by County to be, in default under the Contract, the Surety shall promptly either remedy the default, or, if the Contract is terminated by County or the Principal's performance of the Work is discontinued, Surety shall promptly complete the Contract through its agents or independent contractors, subject to acceptance of such agents or independent contractors

Are maintenance services available?  Yes  No

If so, describe scope and terms, including any limitations on maintenance services: \_\_\_\_\_

Are replacements materials, products or things, and all parts thereof, available?  Yes  No

Contractor agrees to provide specified item in the event this Substitution Request is denied?  Yes  No

Does the Substitution affect dimensions shown On Drawings?  Yes  No

If so, clearly describe changes: \_\_\_\_\_

Will you pay for changes to the building design, including architectural, engineering and detailing costs caused by the acceptance of the requested Substitution?  Yes  No

Would the Substitution, if used, affect any other trades?  Yes  No

If so, describe each affect: \_\_\_\_\_

Would the Substitution, if used, affect your ability to meet The time periods for construction required by the Bidding Documents?  Yes  No

If so, describe each affect: \_\_\_\_\_

Are there any differences between Substitution and specified item?  Yes  No

If so, describe each difference: \_\_\_\_\_

Are the manufacturer's guarantees and warranties of the Substitution and the specified item the same?  Yes  No

If so, describe each difference or attach copy of all written guarantees and warranties provided for the Substitution : \_\_\_\_\_

Attach complete product data, including but not limited to laboratory tests, approval numbers, research report numbers, listings, and approved assembly descriptions as specified in Section \_\_\_\_\_ of the Specifications or as required by Governmental Authorities under Applicable Laws.

\_\_\_\_\_  
**Contractor**

\_\_\_\_\_  
**County**

\_\_\_\_\_  
By

\_\_\_\_\_  
Reviewed by:

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
Remarks

\_\_\_\_\_  
**Design Consultant**

\_\_\_\_\_  
Reviewed by:

<b>SPACE RESERVED FOR COUNTY USE ONLY:</b>	
Decision on Substitution Request:	<input type="checkbox"/> <b>Grant</b> <input type="checkbox"/> <b>Deny</b>



**GENERAL CONDITIONS OF**  
**THE STANDARD FORM CONSTRUCTION CONTRACT**  
**BETWEEN COUNTY AND CONTRACTOR**

(LONG FORM)

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**GENERAL CONDITIONS OF**  
**THE STANDARD FORM CONSTRUCTION CONTRACT**  
**BETWEEN COUNTY AND CONTRACTOR**

(LONG FORM)

**ARTICLE 1**  
**GENERAL PROVISIONS**

**1.1 DEFINITIONS**

1.1.1 **Acceptance.** "Acceptance" means the point that the Project is formally accepted by the Board of Supervisors and a Notice of Completion is recorded by County.

1.1.2 **Act of God.** "Act of God" means earthquake, natural flood, tornado or other unusually severe natural or weather phenomenon occurring at the Site and causing Delay to performance of the Work at the Site; provided, however, that precipitation and winds shall not be an Act of God unless it exceeds in any given month the 10-year average of monthly levels as established by the National Oceanic and Atmospheric Administration ("NOAA") according to NOAA's records of measurable precipitation and winds taken at NOAA's recording station located within the Riverside County basin area that is nearest to the Site.

1.1.3 **Addendum.** "Addendum" means written or graphic information (including, without limitation, Drawings or Specifications) issued prior to the Bid Closing Deadline, which modifies or interprets the Bidding Documents by additions, deletions, clarifications or corrections.

1.1.4 **Admitted Surety.** "Admitted Surety" means a surety insurer that is duly certified pursuant to California Insurance Code §995.120 to transact business as a surety in the State of California.

1.1.5 **Allowable Costs.** "Allowable Costs" means those costs listed in Paragraph 7.7.3, below, that are used in calculating Contract Adjustments to the Contract Price.

1.1.6 **Allowable Markups.** "Allowable Markups" means those percentage markups listed in Paragraph 7.7.5, below, used in calculating Contract Adjustments to the Contract Price.

1.1.7 **Alternate.** "Alternate" means a proposed alternative described in the Bidding Documents adding to, or deleting from, the Bidding Documents a particular material, system, product or method of construction.

1.1.8 **Applicable Laws.** "Applicable Laws" means all statutes, ordinances, rules, regulations, policies and guidelines enacted by Governmental Authorities (including, without limitation, Environmental Laws and Disability Laws), codes adopted or promulgated by Governmental Authorities (including, without limitation, building and health and safety codes), lawful orders of Governmental Authorities and common law, including, but not limited to, principles of equity applied by the courts of the State of California, which are in effect at the time the Work is performed.

1.1.9 **Application for Payment.** "Application for Payment" means Contractor's itemized application for Progress Payment or Final Payment prepared, submitted and substantiated in accordance with the requirements of the Contract Documents.

1.1.10 **Architect.** "Architect" means the design professional retained by County that is primarily responsible for the preparation of the Drawings and Specifications for the Project.

1.1.11 **Assistant CEO/EDA.** "Assistant CEO/EDA" means the Assistant CEO for the Economic Development Agency, or his/her designee.



1.1.12 **Award.** "Award" means either (1) a minute order duly adopted by the Board of Supervisors approving County's entering into the Construction Contract with Contractor or (2) execution of the Construction Contract by the Clerk of the Board.

1.1.13 **Base Bid.** "Base Bid" means the sum of money stated in a Bid for which the Bidder proposes to perform the Work, exclusive of adjustments for Alternates.

1.1.14 **Bid.** "Bid" means the completed and signed Bid Form and other Bid Submittals submitted by a Bidder to County in response to the Notice Inviting Bids and in accordance with the Instructions to Bidders.

1.1.15 **Bid Amount.** "Bid Amount" means the dollar amount that is used as the basis for determining which Bidder has submitted the lowest Bid price for purposes of Award pursuant to the County's chosen method of Award set forth in Paragraph 4.5.3 of the Instructions to Bidders.

1.1.16 **Bid Bond.** "Bid Bond" means alternative form of Bid Security submitted by a Bidder that consists of a surety bond issued by a Surety.

1.1.17 **Bid Closing Deadline.** "Bid Closing Deadline" means the deadline (date and time) for receipt of Bids by County that is stated in the Bidding Documents, as adjusted by Addendum.

1.1.18 **Bid Form.** "Bid Form" means the form prescribed by the Bidding Documents to be completed and signed by a Bidder showing the dollar amount(s) of its Bid.

1.1.19 **Bid Security.** "Bid Security" means a deposit of cash, certified or cashier's check or bond submitted by a Bidder in accordance with the Bidding Documents guaranteeing that if Award is made to the Bidder, the Bidder will enter into the Construction Contract and furnish the Performance Bond and Payment Bond and other Post-Award Submittals.

1.1.20 **Bid Submittal.** "Bid Submittal" means a document that Bidder is required by the Bidding Documents to submit with or as part of its Bid.

1.1.21 **Bidder.** "Bidder" means a person or entity submitting a Bid for Award of the Construction Contract.

1.1.22 **Bidding Documents.** "Bidding Documents" means the following collection of documents prepared and issued by County relating to the Project:

- .1 Notice Inviting Bids;
- .2 Instructions to Bidders;
- .3 Bid Form;
- .4 Standard Form of Construction Contract Between County and Contractor (unsigned);
- .5 General Conditions to Standard Form of Construction Contract Between County and Contractor (Long Form);
- .6 Specifications;
- .7 Plans and Drawings;
- .8 Addenda;
- .9 Reference Documents;
- .10 Safety Program; and

.11 those documents, or those portions or provisions of documents, that, although not listed in Subparagraph 1.1.22.2 through Subparagraph 1.1.22.10, above, are expressly cross-referenced therein or attached thereto, including, without limitation, all documents submitted by Contractor as part of its Bid or Post-Award Submittals.

1.1.23 **Board of Supervisors.** "Board of Supervisors" means the Board of Supervisors for the County of Riverside.

1.1.24 **Change.** "Change" means a modification, change, addition, substitution or deletion in the Work or in Contractor's means, methods, manner, time or sequence of performing the Work arising from any cause or circumstances, including, without limitation, either directly at the request of County or constructively by reason of other circumstances. Use of the term "Change," in any context, in the Contract Documents shall not be interpreted as implying that Contractor is entitled to a Contract Adjustment on any basis other than as permitted by the terms of the Contract Documents for Compensable Change, Deleted Work or Compensable Delay.

1.1.25 **Change Order.** "Change Order" means a written instrument, signed in accordance with the requirements of the General Conditions, setting forth the agreement of County and Contractor on the terms of a Contract Adjustment.

1.1.26 **Change Order Request.** "Change Order Request" means Contractor's written request for a Contract Adjustment pursuant to Paragraph 7.6.2, below.

1.1.27 **Claim.** "Claim" means a written demand or assertion by Contractor seeking, as a matter of right, an interpretation of contract, payment of money, recovery of damages or other relief. A Claim does not include the following: (1) tort claims for personal injury or death; (2) stop notice claims; (3) a determination of the right of County to specific performance or injunctive relief to compel performance; (4) a determination of the right of County to suspend, revoke or limit the Contractor's Prequalification status or rating or to debar Contractor from bidding or contracting with County; or (5) a determination of the right of County under Applicable Laws to terminate the Construction Contract and/or recovery of penalties imposed upon Contractor for violation of statutory obligations under Public Contract Code §4100 *et seq.*

1.1.28 **Close-Out Documents.** "Close-Out Documents" means all Record Documents, warranties, guarantees, technical information, operations manuals, replacement parts, excess and attic stock and other documents (including, without limitation, electronic versions and hard copies) and things required to be submitted by Contractor under the Contract Documents as a condition of Final Completion or Final Payment.

1.1.29 **Compensable Change.** "Compensable Change" means circumstances involving the performance of Extra Work:

.1 that are the result of

(1) Differing Site Conditions,

(2) amendments or additions to Applicable Laws, which amendments or additions are enacted after the Bid Closing Deadline,

(3) a Change requested by County in accordance with the conditions of authorization applicable to Compensable Changes set forth in Article 7, below, or

(4) other circumstances involving a Change in the Work for which Contractor is given under the Contract Documents a specific and express right to a Contract Adjustment to the Contract Price;

.2 that are not caused, in whole or in part, by an act or omission of Contractor or a Subcontractor, of any Tier, constituting negligence, willful misconduct, or violation of an Applicable Law, or by a failure of Contractor of a Subcontractor, of any Tier, to comply with the Contract Documents;

.3 for which a Contract Adjustment is neither prohibited by nor waived under the terms of the Contract Documents; and

.4 that if performed would require Contractor to incur additional and unforeseeable Allowable Costs that would not have been required to be incurred in the absence of such circumstances.

**1.1.30 Compensable Delay.** "Compensable Delay" means a Delay to the critical path of activities affecting Contractor's ability to achieve Substantial Completion of the entirety of the Work within the Contract Time:

.1 that is the result of

(a) a Compensable Change,

(b) the active negligence of County, Architect, a County Consultant or a Separate Contractor,

(c) a breach by County of an obligation under the Contract Documents, or

(d) other circumstances involving Delay for which Contractor is given under the Contract Documents a specific and express right to a Contract Adjustment adjusting the Contract Price;

.2 that is not caused, in whole or in part, by an act or omission of Contractor or a Subcontractor, of any Tier, constituting negligence, willful misconduct, or a violation of an Applicable Law, or a failure by Contractor or any Subcontractor, of any Tier, to comply with the Contract Documents; and

.3 for which a Contract Adjustment to the Contract Time is neither prohibited by nor waived under the terms of the Contract Documents.

**1.1.31 Construction Change Directive.** "Construction Change Directive" means a written instrument signed in accordance with the requirements of Article 7, below, that: (1) directs the performance of a Change that does not involve a Contract Adjustment; (2) establishes a mutually agreed basis for compensation to Contractor for a Compensable Change under circumstances where performance of the Compensable Change needs to proceed in advance of the County performing a full evaluation of the Contractor's rights relative to a Contract Adjustment; or (3) directs performance of Work or a Change with respect to which there exists a dispute or question regarding the terms of a Contract Adjustment.

**1.1.32 Construction Contract.** "Construction Contract" means the written form of Standard Form of Construction Contract Between County and Contractor included in the Bidding Documents signed by County and Contractor.

**1.1.33 Construction Schedule.** "Construction Schedule" means the detailed, critical path schedule prepared by Contractor in accordance with the requirements of the Contract Documents showing Contractor's plan for performance of the Work within the Contract Time.

**1.1.34 Contract Adjustment.** "Contract Adjustment" means an adjustment, additive or deductive, to the Contract Price or Contract Time that is permitted by the Contract Documents due to circumstances constituting a Compensable Change, Compensable Delay or Deleted Work.

**1.1.35 Contract Documents.** "Contract Documents" means the following collection of documents:

.1 Construction Contract;

.2 Addenda;

.3 General Conditions;

- .4 Specifications;
- .5 Plans and Drawings;
- .6 Modifications;
- .7 Reference Documents;
- .8 Change Orders;
- .9 Unilateral Change Orders;
- .10 Construction Change Directives;
- .11 Safety Program;
- .12 other documents that comprise exhibits, attachments or riders to the documents listed in preceding Subparagraph 1.1.35.1 through Subparagraph 1.1.35.11, above;
- .13 executed Declaration of Sufficiency of Funds;
- .14 executed Non-Collusion Affidavit; and
- .15 if the Bidding Documents limit bidding to Prequalified Bidders, those written representations, obligations or responsibilities made, acknowledged or assumed by the Bidder as part of the applicable Prequalification conducted by County, including, without limitation, any continuing obligations assumed by Contractor to disclose false or misleading information, report changes in ownership or management and comply with minimum safety requirements.

1.1.36 **Contract Price.** "Contract Price" means the dollar amount set forth in the Construction Contract as the total compensation payable by County to Contractor for complete performance by Contractor in accordance with the Contract Documents of the Work and other obligations assumed by Contractor under the Contract Documents.

1.1.37 **Contract Time.** "Contract Time" means the total number of Days set forth in the Construction Contract within which Contractor is obligated to achieve Substantial Completion and/or Final Completion of the Work, as extended or shortened by Contract Adjustments.

1.1.38 **Contractor.** "Contractor" means the person or entity identified by County as the Bidder receiving Award of the Construction Contract.

1.1.39 **Contractor Amount.** "Contractor Amount" means the component amount calculated on behalf of Contractor pursuant to Paragraph 15.1.5, below, that is used to determine the total net amount payable to Contractor or County in the event of a partial or full termination or discontinuance of the Work.

1.1.40 **Contractor's Own Expense.** "Contractor's Own Expense" means that Contractor agrees to assume sole responsibility to pay and be responsible for any resulting or associated Loss and Delay, without any Contract Adjustment and without any other form of compensation or reimbursement, of any kind, by County.

1.1.41 **County.** "County" means the County of Riverside, a political subdivision of the State of California.

1.1.42 **County Amount.** "County Amount" means the component amount calculated on behalf of County pursuant to Paragraph 15.1.5, below, that is used to determine the total net amount payable to Contractor or County in the event of a partial or full termination or discontinuance of the Work.

1.1.43 **County Consultant.** "County Consultant" means a consultant, other than Architect, engaged by County (or engaged as a subconsultant to the Architect or a County Consultant) to provide professional advice to County with respect to the design, construction or management of the Project.

1.1.44 **County Review Date.** "County Review Date" means an end date set forth in the Construction Schedule or Submittal Schedule within which County, Architect or a County Consultant is to provide information, review documents or render decisions, approvals or disapprovals.

1.1.45 **County Review Period.** "County Review Period" means a period of time set forth in the Construction Schedule or Submittal Schedule within which County, Architect or a County Consultant is to provide information, review documents or render decisions, approvals or disapprovals.

1.1.46 **County Risk Manager.** "County Risk Manager" means the individual employee of the County acting as its risk manager.

1.1.47 **County Website.** "County Website" means the website maintained by County at <http://www.rivcoeda.org>.

1.1.48 **Date of Commencement.** "Date of Commencement" means the starting date used for calculation of the Contract Time, and is the date, no earlier than the first working day following issuance of the Notice to Proceed, that is fixed in the Notice to Proceed issued by the County or, if no Notice to Proceed is issued, the Day that the Contractor actually commences Work at the Site in accordance with Paragraph 8.1.1, below.

1.1.49 **Day.** "Day", whether capitalized or not, and unless otherwise specifically provided, means calendar day, including weekends and Holidays.

1.1.50 **Declaration of Sufficiency of Funds.** "Declaration of Sufficiency of Funds" means the declaration, in the form included in the Bidding Documents, required to be submitted by Contractor under circumstances where Contractor has not executed a collective bargaining agreement covering the workers who will be employed to perform the Work.

1.1.51 **Defective Work.** "Defective Work" means materials, equipment, labor, workmanship, construction services or other construction work comprising the Work by Contractor or a Subcontractor that (1) is faulty, omitted, incomplete, or deficient, or (2) does not conform to Applicable Laws, the Contract Documents, or the requirements of any inspection, reference standard, test, code or approval specified in the Contract Documents.

1.1.52 **Delay.** "Delay" means any circumstances involving delay, disruption, hindrance or interference.

1.1.53 **Deleted Work.** "Deleted Work" means Work that is eliminated or its scope or cost reduced pursuant to a Change Order or Unilateral Change Order.

1.1.54 **Department of Industrial Relations.** "Department of Industrial Relations" means The Department of Industrial Relations of the State of California.

1.1.55 **Design Discrepancy.** "Design Discrepancy" means an error, omission, conflict, ambiguity, lack of coordination or noncompliance with Applicable Laws contained in the Bidding Documents, Contract Documents, Reference Documents or other information made available by County to Contractor prior to or after the Bid Closing Deadline.

1.1.56 **Design Documents.** "Design Documents" means all originals, copies and drafts of plans, drawings, tracings, specifications, programs, reports, calculations, presentation materials, models, building information models and other writings or materials containing designs, specifications or engineering information related to the Work or Project prepared by Architect, County Consultants, Contractor, Separate Contractors or Subcontractors including, without limitation, computer aided design materials, electronic data files and paper copies. The term "Design Documents" includes both the written documents and all building and other designs depicted therein.

1.1.57 **Design Intent.** "Design Intent" means the general intended design objectives of the Design Documents prepared by Architect and County Consultants, as described in Paragraph 1.2.1, below.

1.1.58 **Designation of Subcontractors.** "Designation of Subcontractors" means the list of proposed Subcontractors prepared by the Bidder pursuant to California Public Contract Code §§4100 et seq.

1.1.59 **Differing Site Condition.** "Differing Site Condition" means an unforeseen condition that constitutes a basis for Contract Adjustment pursuant to Paragraph 4.3.8, below.

1.1.60 **Disability Laws.** "Disability Laws" means applicable federal, state, local or municipal laws, rules, orders, regulations, statutes, ordinances, codes, decrees, or requirements of any Government Authority, which regulate, relate to or impose liability or standards of conduct with respect to, or accessibility for, persons with disabilities, including, without limitation, the Americans with Disabilities Act (42 USCA §§ 12101 et seq.) and the Fair Housing Amendments Act of 1988 (42 USCA §§ 3604 et seq.).

1.1.61 **Discovery Date.** "Discovery Date", generally used in reference to Contractor's obligation to give written notice of certain facts, conditions or circumstances, means the earlier of the dates that Contractor or any Subcontractor either: (1) discovered such facts, conditions or circumstances; or (2) should have discovered such facts, conditions or circumstances in the exercise of the level of care required by the terms of the Standard of Performance.

1.1.62 **Drawings.** "Drawings" means graphic and pictorial documents showing the design, location and dimensions of the Project, and generally includes plans, elevations, subparagraphs, details, schedules and diagrams. The term "Drawings" is used interchangeably with "Plans".

1.1.63 **EDA.** "EDA" means the Economic Development Agency for the County of Riverside.

1.1.64 **Environmental Laws.** "Environmental Laws" means all applicable federal, state, local or municipal laws, rules, orders, regulations, statutes, ordinances, codes, decrees and permits or other requirements of any Governmental Authority, which regulate, relate to, or impose liability or standards of conduct concerning any Hazardous Substance (including, without limitation, the use, handling, transportation, production, disposal, discharge or storage thereof), occupational or environmental conditions on, under, or about the Site or Existing Improvements (including, without limitation, soil, groundwater, and indoor and ambient air conditions), environmental protection (natural or manmade resources), or occupational health or industrial hygiene (but only to the extent related to Hazardous Substances on, under, or about the Site or Existing Improvements), as now or may at any later time be in effect, including without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 [42 U.S.C.A. §§ 9601 et seq.]; the Resource Conservation and Recovery Act of 1976 [42 U.S.C.A. §§ 6901 et seq.]; the Clean Water Act (also known as the Federal Water Pollution Control Act) [33 U.S.C.A. §§ 1251 et seq.]; the Toxic Substances Control Act [15 U.S.C.A. §§ 2601 et seq.]; the Hazardous Substances Transportation Act [49 U.S.C.A. §§ 1801 et seq.]; the Insecticide, Fungicide, Rodenticide Act [7 U.S.C.A. §§ 136 et seq.]; the Superfund Amendments and Reauthorization Act [42 U.S.C.A. §§ 6901 et seq.]; the Clean Air Act [42 U.S.C.A. §§ 7401 et seq.]; the Safe Drinking Water Act [42 U.S.C.A. §§ 300f et seq.]; the Solid Waste Disposal Act [42 U.S.C.A. §§ 6901 et seq.]; the Surface Mining Control and Reclamation Act [30 U.S.C.A. §§ 1201 et seq.]; the Emergency Planning and Community Right to Know Act [42 U.S.C.A. §§ 11001 et seq.]; the Occupational Safety and Health Act [29 U.S.C.A. §§ 655 and 657]; the Residential Lead-Based Paint Exposure Act (Title X of the Housing and Community Development Act of 1992) [15 U.S.C.A. §§ 2681 et seq.]; the Lead-Based Paint Poisoning Prevention Act [42 U.S.C.A. §§ 4821 et seq.]; the Federal Endangered Species Act, the California Endangered Species Act, the Migratory Bird Treaty Act, the National Environmental Policy Act, the California Environmental Quality Act, Porter Cologne Water Quality Act (California Water Code §§ 13000 et seq), and all similar federal, state or local laws, rules, orders, regulations, statutes, ordinances, codes, decrees, or requirements.

1.1.65 **Escrow Agent.** "Escrow Agent" means an entity serving as escrow agent pursuant to California Public Contract Code §22300 in connection with the deposit of securities or retention.

1.1.66 **Escrow Bid Documents.** "Escrow Bid Documents" means all written documentation and electronic files reflecting the basis for and calculation of a Bid, including, without limitation, estimates, quantity take-offs, price quotations, product data, pricing data, memoranda, narratives, add/deduct sheets and reports (including, without

limitation, reports on conditions at, under, or in the vicinity of the Site). The term "Escrow Bid Documents" does not include copies of Bidding Documents if they are not needed to comply with the requirements of the Bidding Documents applicable to submission of Escrow Bid Documents.

**1.1.67 Event of Contractor Default.** "Event of Contractor Default" means any of the events constituting default by Contractor as set forth in Paragraph 15.1.1, below.

**1.1.68 Evidence of Insurance.** "Evidence of Insurance" means the statement, completed by Bidder in the form included in the Bidding Documents, evidencing the Bidder's compliance with the insurance requirements of the Bidding Documents.

**1.1.69 Excusable Delay.** "Excusable Delay" means a Delay, other than a Compensable Delay, to Contractor's ability to achieve Substantial Completion or Final Completion of the Work within the Contract Time that is: (1) not caused, in whole or in part, by an act or omission of Contractor or a Subcontractor, of any Tier, constituting negligence, willful misconduct, a violation of an Applicable Law or a failure by Contractor or any Subcontractor, of any Tier, to comply with the Contract Documents; (2) unforeseeable, unavoidable and beyond the control of Contractor and the Subcontractors, of every Tier; and (3) the result of a Force Majeure Event. Without limitation to the foregoing, neither the bankruptcy, insolvency nor financial inability of Contractor or a Subcontractor, of any Tier, nor any failure by a Subcontractor, of any Tier, to perform any obligation imposed by contract or Applicable Laws shall constitute a ground for Excusable Delay.

**1.1.70 Existing Improvements.** "Existing Improvements" means all improvements located on the Site as of the Bid Closing Deadline, whether above or below the surface of the ground, including, but not limited to, existing buildings, utilities, infrastructure improvements and other facilities.

**1.1.71 Extra Work.** "Extra Work" means labor, materials, equipment, services or other work, not reasonably inferable by Contractor or its Subcontractors from the design and other information set forth in the Bidding Documents, the performance of which requires the expenditure by Contractor of additional and unforeseen Allowable Costs. References to Extra Work shall not be interpreted to mean or imply that Contractor is entitled to a Contract Adjustment unless such Extra Work constitutes a Compensable Change.

**1.1.72 Final Completion, Finally Complete.** "Final Completion" and "Finally Complete" mean the point at which the following conditions have occurred with respect to the entire Work:

- .1 the Work is fully completed, including all minor corrective, or "punch list," items;
- .2 all permits, approvals and certificates by Governmental Authorities, such as, but not necessarily limited to, a permanent or temporary certificate of occupancy required to occupy and use the Work have been issued free of any conditions that are the result of an act or omission of Contractor or a Subcontractor, of any Tier, constituting negligence, willful misconduct, a violation of an Applicable Law or a failure by Contractor or any Subcontractor, of any Tier, to comply with the Contract Documents;
- .3 the Work and the related portions of the Site have been thoroughly cleared of all construction debris and cleaned in accordance with the requirements of the Contract Documents, including, but not necessarily limited to where applicable, the following: removal of temporary protections; removal of marks, stains, fingerprints and other soil and dirt from painted, decorated and natural-finished woodwork and other Work; removal of spots, plaster, soil and paint from ceramic tile, marble and other finished materials; all surfaces, fixtures, cabinet work and equipment are wiped and washed clean and in an undamaged, new condition; all aluminum and other metal surfaces are cleaned in accordance with recommendations of the manufacturer; and all stone, tile and resilient floors are cleaned thoroughly in accordance with the manufacturer's recommendations and buff dried by machine to bring the surfaces to sheen;
- .4 all conditions set forth in the Contract Documents for Substantial Completion of the Work have been, and continue to be, fully satisfied;

.5 all conditions pertaining to the Work and required for the release of County's obligations (including, but not limited to, release of County's bond obligations) to Governmental Authorities (including, but not limited to, matters involving grading, flood control, public works, transportation and traffic) have been satisfied; and

.6 Contractor has delivered to County all Close-Out Documents.

**1.1.73 Final Completion Punch List.** "Final Completion Punch List" means the list of minor items of Work to be completed or corrected by Contractor for Final Completion.

**1.1.74 Final Payment.** "Final Payment" means payment by County to Contractor of the entire unpaid balance of the Contract Price due to Contractor following Final Completion.

**1.1.75 Force Majeure Event.** "Force Majeure Event" means, and is restricted to, any the following: (1) Acts of God occurring at the Site; (2) terrorism or other acts of a public enemy; (3) orders of Governmental Authorities (including, without limitation, unreasonable and unforeseeable Delay in the issuance of permits or approvals by Governmental Authorities that are required for the Work); (4) epidemics or quarantine restrictions; (5) strikes and other organized labor action occurring at the Site and the effects thereof on the Work to the extent such strikes and other organized labor action are beyond the control of Contractor and its Subcontractors, of every Tier, and to the extent the effects thereof cannot be avoided by use of replacement workers or implementation of a dual gate system of entry to the Site; or (6) unusual shortages in materials that are supported by documented proof that (a) Contractor made every effort to obtain such materials from all available sources, (b) such shortage is due to the fact that such materials are not physically available from single or multiple sources or could have been obtained only at exorbitant prices entirely inconsistent with current rates taking into account the quantities involved and the usual industry practices in obtaining such quantities, and (c) such shortages and the difficulties in obtaining alternate sources of materials could not have been known or anticipated as of the Bid Closing Deadline.

**1.1.76 Fragnet.** "Fragnet" means a contemporaneous, fragmentary scheduling network, which graphically identifies the sequencing of all critical and non-critical new activities and/or activity revisions affected by a Compensable Delay or Excusable Delay with logic ties to all affected existing activities noted on the Construction Schedule, that isolates and quantifies a time impact of a specific issue, determines and demonstrates any such specific Delay in relation to past and/or other current Delays and provides a method for incorporating all Contract Adjustments to the Contract Time into an update of the approved Construction Schedule.

**1.1.77 General Conditions.** "General Conditions" means the herein set forth general terms and conditions governing performance of the Work.

**1.1.78 General Requirements.** "General Requirements" means the portion of the Specifications so titled setting forth additional requirements for administration of the Work.

**1.1.79 Good Faith Determination.** "Good Faith Determination" means a determination made by the Assistant CEO/EDA or other authorized representative of County, which he/she believes in good faith to be a proper exercise of County's rights and to have a reasonable basis in fact, whether or not such determination is in fact proper, reasonable or correct or adjudged to be so.

**1.1.80 Governmental Authority.** "Governmental Authority" means the United States, the State of California, the County of Riverside (acting in its regulatory, rather than proprietary, capacity), the City in which the Project is located, any other local, regional, state or federal political subdivision, authority, agency, department, commission, board, bureau, court, judicial or quasi-judicial body, and any legislative or quasi-legislative body, or instrumentality of any of them, which exercises jurisdiction over the Project, Work, Site, Contractor or County, including, without limitation, any Governmental Authority having jurisdiction to review and approve or reject the Contract Documents or the Work based on compliance or non-compliance with Applicable Laws.

**1.1.81 Governmental Authority Review Period.** "Governmental Authority Review Period" means a period of time set forth in the Construction Schedule or Submittal Schedule for Governmental Authority review, and/or approval, of the Work.



**1.1.82 Guarantee To Repair Period.** "Guarantee To Repair Period" means the period of time set forth in Section 13.3, below, for repair or replacement of Defective Work.

**1.1.83 Hazardous Substance.** "Hazardous Substance" means either of the following: (1) any chemical, material or other substance defined as or included within the definition of "hazardous substances," "hazardous wastes," "extremely hazardous substances," "toxic substances," "toxic material," "restricted hazardous waste," "special waste," "contamination" or words of similar import under any Environmental Law, including, without limitation, the following: petroleum (including crude oil or any fraction thereof), asbestos, asbestos-containing materials, polychlorinated biphenyls ("PCBs") and PCB-containing materials, whether or not occurring naturally; or (2) any substance that because of its quantity, concentration or physical or chemical characteristics poses a significant present or potential hazard to human health and safety or to the environment, and which has been determined by any Governmental Authority to be a hazardous waste or hazardous substance.

**1.1.84 Holiday.** "Holiday" means a Day recognized by County as being a legal holiday for its staff and employees.

**1.1.85 Indemnitees.** "Indemnitees" means those persons or entities listed in Paragraph 3.18.1, below, as the "Indemnitees".

**1.1.86 Inspector of Record.** "Inspector of Record" means a person designated by the County to perform inspections on behalf of the County, who may be an employee or an independent consultant to County.

**1.1.87 Installation Subcontractor.** "Installation Subcontractor" means a Subcontractor who performs a portion of the Work that includes providing substantial, rather than minor and incidental, services for the installation of temporary or permanent materials, equipment or facilities at the Site.

**1.1.88 Instructions to Bidders.** "Instructions to Bidders" means the portion of the Bidding Documents setting forth the requirements to be followed by Bidders in preparing and submitting Bids.

**1.1.89 Intellectual Property Rights.** "Intellectual Property Rights" means all intellectual property rights, including, without limitation, patent, trademark, trade dress, copyright, industrial design rights, priority rights and trade secrets.

**1.1.90 Key Personnel, Key Persons.** "Key Personnel" and "Key Persons" mean those individuals employed by Contractor as described in Paragraph 3.8.1, below, and any replacements thereto approved by County, whose personal performance is deemed of the essence to the Construction Contract.

**1.1.91 Loss, Losses.** "Loss" and "Losses" mean any and all economic and non-economic losses, costs, liabilities, claims, damages, cost escalations, actions, judgments, settlements, expenses, fines, penalties and punitive damages including, without limitation, full and actual attorney's fees (including, without limitation, attorney's fees for trial and on appeal), expert and non-expert witness fees, arbitrator and arbitration fees, court costs (statutory and non-statutory), and mediation and mediator fees.

**1.1.92 Modification.** "Modification" means a document, other than a Change Order or Construction Change Directive, approved and signed by County and Contractor after execution of the Construction Contract, agreeing to alter, amend or modify the Contract Documents.

**1.1.93 Mold.** "Mold" means mold, mildew, spores or other microorganisms of any type, nature or description, or any by-product thereof, the presence of which poses an actual or potential threat to human health, including, without limitation, any species of organisms of the kingdoms of fungi or mycota, including yeasts, smuts, ruts, mildews, mold and mushrooms, or any microbial contamination, either airborne or surface, which arises out of or is related to the presence of fungi or spores (including, without limitation, aspergillus, cladosporium, penicillium and stachybotrys chartarum).

**1.1.94 Non-Collusion Affidavit.** "Non-Collusion Affidavit" means the form, so titled, required by California Public Contract Code §7106 and the Bidding Documents to be submitted by Bidder with its Bid.

1.1.95 **Notice Inviting Bids.** "Notice Inviting Bids" means the notice issued by or on behalf of County inviting submission of Bids for the Project.

1.1.96 **Notice Inviting Prequalification Statements.** "Notice Inviting Prequalification Statements" means the formal notice issued by County inviting contractors to participate in County's process for Prequalification of Bidders.

1.1.97 **Notice of Change.** "Notice of Change" means a formal written notice required to be submitted by Contractor pursuant to Paragraph 7.6.1, below, notifying County of circumstances that Contractor believes may give rise to a Contract Adjustment.

1.1.98 **Notice of Completion.** "Notice of Completion" means a "notice of completion" as defined in California Civil Code §3093.

1.1.99 **Notice of Delay.** "Notice of Delay" means a formal written notice prepared and submitted by Contractor pursuant to Paragraph 8.2.2, below, notifying County of circumstances that Contractor believes may give rise to a Contract Adjustment to the Contract Time for Excusable Delay or Compensable Delay or a Contract Adjustment to the Contract Price for Compensable Delay.

1.1.100 **Notice of Final Completion.** "Notice of Final Completion" means the written notice by County confirming the date of actual Final Completion.

1.1.101 **Notice of Intent to Award.** "Notice of Intent to Award" means the written notice by or on behalf of County stating County's intent to Award the Construction Contract.

1.1.102 **Notice of Substantial Completion.** "Notice of Substantial Completion" means the written notice by County confirming the date of actual Substantial Completion.

1.1.103 **Notice to Proceed.** "Notice to Proceed" means the written notice issued by County to Contractor to begin the Work.

1.1.104 **Payment Bond, Performance Bond.** "Payment Bond" and "Performance Bond" mean the surety bonds required to be provided by Contractor pursuant to Article 12, below.

1.1.105 **Plans.** "Plans" means the graphic and pictorial portions of the Contract Documents prepared by Architect or its Subconsultants showing the design, location and dimensions of the Work, including, without limitation, plans, elevations, details, schedules and diagrams. The term "Plans" is used interchangeably with "Drawings".

1.1.106 **Post-Award Submittals.** "Post-Award Submittals" means the documents described in the Bidding Documents that the apparent successful Bidder is required to submit after opening of Bids as a condition of Award.

1.1.107 **Pre-Bid Conference.** "Pre-Bid Conference" means the conference, specified in the Notice Inviting Bids as either mandatory or optional, held prior to the Bid Closing Deadline for the purpose of, without limitation, introducing the Bidders to the Project, and which conference may, or may not, include a review of the Site.

1.1.108 **Prequalification.** "Prequalification" means a process for Prequalification of contractors for bidding that is conducted by County pursuant to California Public Contract Code §20101 or as otherwise permitted by Applicable Laws.

1.1.109 **Prequalification Documents.** "Prequalification Documents" means the collection of documents issued to and submitted by individuals or entities pursuant to a Prequalification conducted by County.

1.1.110 **Prequalified Bidder.** "Prequalified Bidder" means a contractor that is prequalified as part of a Prequalification conducted by County pursuant to Public Contract Code §20101.

**1.1.111 Product Data.** "Product Data" means illustrations, standard schedules, charts, instructional brochures, diagrams and other information furnished by Contractor to illustrate a material, product or system for the Work.

**1.1.112 Progress Payment.** "Progress Payment" means a monthly payment of a portion of the Contract Price prior to Final Completion based on Contractor's progressed performance of the Work.

**1.1.113 Project.** "Project" means the improvements comprising, or necessary or appurtenant to the use of, the work of improvements described generally in the Bidding Documents, of which the Work may be the entirety of such improvements or only a part.

**1.1.114 Project Documents.** "Project Documents" means all writings (hard copy and electronic) in the possession of Contractor at the Site or elsewhere that relate in any way to the Project or Work.

**1.1.115 Project Team.** "Project Team" means County, Architect, County Consultants, Contractor, the Subcontractors, the Separate Contractors, Inspectors of Record and other firms or individuals retained by County, or retained by others with County's approval, participating in the planning, programming, design, construction or inspection of the Work.

**1.1.116 Reasonable Order of Magnitude Estimate.** "Reasonable Order of Magnitude Estimate" means a general estimate prepared by Contractor, or jointly by Contractor and County, without the benefit of complete or definitive pricing by Subcontractors, of the projected additional cost and time associated with Contractor's performance of a particular item or items of Extra Work or Deleted Work described in a Construction Change Directive. Unless otherwise agreed to in writing between County and Contractor, a Reasonable Order of Magnitude Estimate does not constitute either an authorization or agreement by County to any Contract Adjustment or a guarantee or promise by Contractor with respect to the amount of any Contract Adjustment that may be associated with a Compensable Change or Deleted Work.

**1.1.117 Record Documents.** "Record Documents" means the collection of documents assembled and prepared by Contractor (including, without limitation, the Record Drawings and Specifications) showing the condition of the Work as actually built.

**1.1.118 Record Drawings, Record Specifications.** "Record Drawings" and "Record Specifications" mean the Drawings and Specifications marked by Contractor to show the condition, location and placement of the Work as actually built, including, without limitation, the locations of mechanical, electrical, plumbing or similar portions of the Work that are depicted diagrammatically in the Drawings.

**1.1.119 Reference Documents.** "Reference Documents" means reports, studies, surveys and other information provided by County for Contractor's review and consideration in preparing its Bid, including, without limitation, information describing the Site (including surface or subsurface conditions), Existing Improvements or Hazardous Substances at the Site.

**1.1.120 Request for Extension.** "Request for Extension" means a formal written request submitted by Contractor pursuant to Paragraph 8.2.3, below, setting forth the justification and support for Contractor's request for a Contract Adjustment to the Contract Time.

**1.1.121 Request for Information.** "Request for Information" means a written request by Contractor for clarification of what it perceives to be a discrepancy in the Contract Documents (including, without limitation, information in the Contract Documents constituting a Design Discrepancy or a variance between the information in the Bidding Documents or Contract Documents and conditions at the Site or in Existing Improvements).

**1.1.122 Safety Program.** "Safety Program" means the formal, written program prepared by Contractor setting forth detailed procedures and precautionary measures for protecting persons and property from injury or damage.

1.1.123 **Samples.** "Samples" means physical examples that, when approved by County and Architect, illustrate materials, equipment or workmanship by which the Work is to be evaluated and judged as part of the Submittal process.

1.1.124 **Schedule of Values.** "Schedule of Values" means a detailed, itemized breakdown of the Contract Price, which provides for an allocation of the dollar values to each of the various parts of the Work.

1.1.125 **Self-Performed Work.** "Self-Performed Work" means Work related to a Compensable Change or Deleted Work that is performed or to be performed by Contractor's own laborers who are employed by Contractor, rather than by the employees of a Subcontractor, using materials and equipment purchased by Contractor directly from a supplier or manufacturer.

1.1.126 **Separate Contractor.** "Separate Contractor" means a contractor, subcontractor, supplier or vendor under contract directly to County to provide services, materials, labor, equipment or other work to the Project.

1.1.127 **Shop Drawing.** "Shop Drawing" means a drawing, diagram, schedule and other data specially prepared for the Work by Contractor or a Subcontractor to illustrate some portion of the Work.

1.1.128 **Site.** "Site" means: (1) the parcel of land owned by County on which the Project is to be constructed and such additional parcels as may be purchased by County for such construction; (2) all areas adjacent to such parcels that may be used by Contractor or the Subcontractors for staging, storage, parking or temporary offices; and (3) all land areas, both private and public, adjacent to such parcels on which Work is required to be performed under the Contract Documents, Applicable Laws or permits relating to the Project.

1.1.129 **Specifications.** "Specifications" means the portion of the Contract Documents consisting of the written requirements for materials, equipment, standards and workmanship for the Work and performance of related services.

1.1.130 **Standard of Performance.** "Standard of Performance" means the general standard governing Contractor's performance of its obligations under the Construction Contract and General Conditions as set forth in Section 2.2 of the Construction Contract.

1.1.131 **State Water Resources Control Board.** "State Water Resources Control Board" means the State Water Resources Control Board of the State of California.

1.1.132 **Storm Water Permit.** "Storm Water Permit" means any applicable storm water, urban runoff or statewide general NPDES permit issued by the State of California or the United States pursuant to the provisions of the Clean Water Act (Title 33U.S.C.§§1251 et seq.) and/or Porter Cologne Water Quality Control Act (California Water Code §§13000 et seq.) and including any related regulations issued by the State of California or the United States.

1.1.133 **Sub-Bidder.** "Sub-Bidder" means a person or entity that submits a bid to a Bidder for some portion of the Work that is to be performed by that person or entity acting as a first-Tier Subcontractor.

1.1.134 **Subcontractor.** "Subcontractor" means a person or entity that has a contract to perform a portion of the Work, including without limitation, subcontractors, sub-subcontractors, suppliers, equipment operators, manufacturers and vendors, of any and every Tier.

1.1.135 **Submittal.** "Submittal" means a Shop Drawing, Product Data, Sample, detailed design, exemplar, fabrication and installation drawing, list, graph, operating instruction or other document required to be submitted by Contractor under the Contract Documents.

1.1.136 **Submittal Schedule.** "Submittal Schedule" means the schedule prepared by Contractor showing the timing for submission and review of Submittals during construction.

1.1.137 **Substantial Completion, Substantially Complete.** "Substantial Completion" and "Substantially Complete" mean the point at which the following conditions have occurred with respect to the entire Work or a portion

of the Work designated by County in writing to be Substantially Completed prior to Substantial Completion of the entire Work:

.1 such Work is sufficiently and entirely complete in accordance with Contract Documents so that such Work can be fully enjoyed and beneficially occupied and utilized by County for its intended purpose (except for minor items which do not impair County's ability to so occupy and use such Work);

.2 all permits, approvals and certificates by Governmental Authorities, such as, but not necessarily limited to, a permanent or temporary certificate of occupancy required to occupy and use such Work have been issued free of any conditions that are the result of an act or omission of Contractor or a Subcontractor, of any Tier, constituting negligence, willful misconduct, a violation of an Applicable Law or a failure by Contractor or any Subcontractor, of any Tier, to comply with the Contract Documents; and

.3 all building systems included in such Work are operational as specified, all designated or required inspections and certifications by Governmental Authorities have been made and posted and instruction of County's personnel in the operation of the systems has been completed.

**1.1.138 Substantial Completion Punch List.** "Substantial Completion Punch List" means the list of items of Work to be completed or corrected by Contractor for Substantial Completion.

**1.1.139 Substitution.** "Substitution" means a material, product or item of material or equipment proposed by the Bidder or Contractor in place of that specified in the Bidding Documents or Contract Documents.

**1.1.140 Substitution Request Form.** "Substitution Request Form" means the form, so titled, that is included in the Bidding Documents for use by the Bidders when requesting a Substitution.

**1.1.141 Supplementary Conditions.** "Supplementary Conditions" means those portions of the Specifications that supplement, by addition, modification or deletion, a specific portion of the General Conditions.

**1.1.142 Surety.** "Surety" means Contractor's surety(ties) issuing the Bid Bond, Performance Bond or Payment Bond.

**1.1.143 Tier.** "Tier" means the contractual level of a Subcontractor with respect to Contractor. For example, a "first-tier" Subcontractor is under contract with Contractor. A sub-subcontractor under contract with a first-tier Subcontractor is in the "second tier," and so on. Use of the phrase "of every Tier", or similar phraseology, in the Contract Documents shall not be interpreted as implying that other provisions of the Contract Documents, where such phrase is not used, are intended to be limited in application to only the first Tier or to only certain other Tiers of Subcontractors.

**1.1.144 Time Impact Analysis.** "Time Impact Analysis" means a written report evaluating the impact of an Excusable or Compensable Delay, which shall include, at a minimum, the following: (1) a narrative description of the Delay and its impact on the critical path to achievement of a Substantial Completion or Final Completion of the Work or a portion of the Work designated by County within the Contract Time; (2) a Fragnet; (3) the number of Days of extension sought by Contractor as a Contract Adjustment to the Contract Time; (4) a computation of the Days of Compensable Delay multiplied times the liquidated damages payable to Contractor pursuant to Section 3.3 of the Construction Contract, if any, sought by Contractor; (5) a statement that Contractor has complied with the requirements of the General Conditions for written notice of Delays, along with the dates and copies of such notices; (6) the measures taken by Contractor and Subcontractors to prevent or minimize the Delay; and (7) Contractor's recommendations for reordering or re-sequencing the Work to avoid or minimize further Delay.

**1.1.145 Unexcused Delay.** "Unexcused Delay" means any Delay that is not a Compensable Delay or Excusable Delay or that constitutes a Compensable Delay or Excusable Delay for which Contractor is not entitled to a Contract Adjustment to the Contract Time, including, without limitation, the following: (1) Delay caused by an act or omission of Contractor or a Subcontractor, of any Tier, constituting negligence, willful misconduct, a violation of an Applicable Law or a failure by Contractor or any Subcontractor, of any Tier, to comply with the Contract Documents; (2) Delay for which Contractor has failed to provide a timely and complete Notice of Delay or Request for Extension;

or (3) Delay associated with any circumstances where the costs or risk associated with such circumstances are designated in the Contract Documents as being at Contractor's risk or Contractor's Own Expense.

**1.1.146 Unilateral Change Order.** "Unilateral Change Order" means a writing signed by County in accordance with Article 7, below, in which County unilaterally sets forth its Good Faith Determination of the undisputed portion of an otherwise disputed Contract Adjustment.

**1.1.147 Work.** "Work" means all labor, materials, equipment, services, permits, licenses, taxes and other things necessary for Contractor to perform its obligations under the Contract Documents, including, without limitation, any Changes requested by County, in accordance with the Contract Documents and all Applicable Laws. The Work may constitute the whole or a part of the Project.

**1.1.148 Worker's Compensation Certificate.** "Worker's Compensation Certificate" means the statement, completed by Bidder in the form included in the Instruction to Bidders, evidencing the Bidder's compliance with the worker's compensation insurance requirements of the Bidding Documents and Applicable Laws.

## **1.2 CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS**

**1.2.1 Design Intent.** The intent of the Contract Documents is for Contractor to provide all items necessary to produce a work of improvement that is complete as a whole and that is, in all of its parts, suitable for use and occupancy for its intended purpose, including, without limitation, all equipment, casework, mechanical, electrical and similar devices of whatever nature, completely installed, hooked-up and made fully operational and functional.

**1.2.2 Complementary.** Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. Any Work called for on the Drawings and not mentioned in the Specifications, or vice versa, shall be performed as though fully set forth in both.

**1.2.3 Technical Words.** Unless otherwise stated in the Contract Documents, technical words and abbreviations contained in the Contract Documents are used in accordance with commonly understood construction industry meanings and non-technical words and abbreviations are used in accordance with their commonly understood meanings.

**1.2.4 Trade Names.** It is not the intention of the Contract Documents to go into detailed descriptions of any materials or methods commonly known to the trade under a "trade name" or "trade term." The mere mention or notation of such "trade name" or "trade term" shall be considered a sufficient notice to the Contractor that it will be required to complete the Work so named with all its appurtenances according to first-class practices of the trade.

**1.2.5 Incidental Items.** The naming of any material or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and labor therefor, in accordance with first-class practices of the trade involved, unless specifically noted otherwise.

**1.2.6 Drawing Dimensions.** Figured, derived or numerical dimensions on scale Drawings shall govern over Drawings without figured dimensions. The Drawings shall not be scaled to determine dimensions, and (except in the case of diagrammatic Drawings) dimensions shall be calculated from figures shown on the Drawings. Obvious discrepancies between scale and figured dimensions, not marked "not to scale," must be brought to the Architect's attention before proceeding with the Work affected by the discrepancy. Contractor shall carefully check and compare all portions of the Drawings and Specifications so as to correctly interpolate the intended dimensions for any portion of the Work that is not explicitly dimensioned in the Contract Documents.

**1.2.7 Drawings, Specifications.** In general, the Drawings will show dimensions, positions, and kind of construction and the Specifications will define materials, quality and standards. Work not particularly shown, detailed, marked or specified shall be the same as similar parts that are shown, detailed, marked or specified.

**1.2.8 Typical Work.** Work not particularly shown, detailed, marked or specified shall be the same as similar parts that are shown, detailed, marked or specified.

1.2.9 **Divisions of the Work.** All the Work mentioned or indicated in the Contract Documents shall be performed by Contractor as part of the Work unless specifically indicated in the Contract Documents to be done by others. The organization of the Specifications into divisions, sections and articles and the arrangement of the Drawings shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by the Subcontractors.

1.2.10 **Applicable Laws.** Compliance with Applicable Laws shall be considered as a part of the Work.

1.2.11 **Interpretations of Laws.** In the event of a conflict between or among Applicable Laws governing performance of the Work, the more stringent shall govern. Contractor assumes, at Contractor's Own Expense, sole responsibility for, and the risk associated with, interpretations of Applicable Laws made by Contractor not predicated on written orders issued by Governmental Authorities that by their terms are applicable to the Project, including, without limitation, interpretations or assumptions made by Contractor based on decisions, orders or approvals (written or unwritten) issued by or on behalf of Governmental Authorities in connection with work on other projects or properties near or in the general vicinity of the Site.

1.2.12 **Modifiers.** The Contract Documents may omit modifying words such as "all" and "any," and articles such as "the" and "an." If a modifier or an article is not included in one statement and appears in another, it is not intended to affect the interpretation of either statement. The use of the word "including," when following any general statement, shall not be construed to limit such statement to specific items or matters set forth immediately following such word or to similar items or matters whether or not non-limiting language (such as "without limitation," "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement.

1.2.13 **Singular, Gender, Captions.** When appropriate to the context, the use of the singular number shall be deemed to include the plural and vice versa. Each gender shall be deemed to include any other gender, and each shall include corporation, partnership, trust or other legal entity whenever the context so requires. The captions and headings of the various subdivisions of the Contract Documents are intended only as a matter of reference and convenience and in no way define, limit, or prescribe the scope or intent of the Contract Documents or any subdivision thereof.

1.2.14 **Cross-References.** Any cross-references indicated between various paragraphs or other portions of the Specifications, Drawings or other Contract Documents are provided for the convenience of Contractor and shall not be deemed to be all-inclusive.

1.2.15 **Diagrammatic Design.** Drawings and diagrams for mechanical, plumbing, electrical, fire sprinkler, fire alarm and low voltage Work shall be considered as diagrammatic only and shall not be used for any structural guidance or physical layout. Because such Drawings are diagrammatic, Contractor shall be responsible to provide any and all numbers and lengths of fittings, wire, conduit, connections, attachments or similar materials or devices needed to complete the Work, without Contract Adjustment, whether or not they exceed the numbers of pieces or the lengths indicated by such Drawings. Contractor is solely responsible to carefully plan and coordinate in advance, by means of coordination drawings prepared by Contractor or a Subcontractor, the installation of any Work shown diagrammatically and shall do so in such a manner as to make maximum use of the space available and anticipate and avoid wherever possible conflict and interferences among such portions of the Work and with other portions of the Work, including structural members.

1.2.16 **Demolition.** Existing Improvements at the Site of which no specific description is made in the Contract Documents, but which could be reasonably assumed to interfere with the satisfactory completion of the Work, shall be removed and disposed of by Contractor without Contract Adjustment. If Contractor is unsure whether a specific Existing Improvement at the Site which is not specifically described in the Contract Documents should be removed and disposed of, Contractor shall promptly ask the County whether such Existing Improvement is to be removed or remain in place, and shall comply with any directive given in response.

1.2.17 **Omissions.** Items missing from the Contract Documents shall nevertheless be provided by the Contractor, without Contract Adjustment, to the extent reasonably inferable from the Contract Documents as being necessary to satisfy the Design Intent.

1.2.18 **Conflicts.** Notwithstanding the provisions of Paragraph 1.2.19, below, in the event of conflict between any of the Contract Documents, the provision placing a more stringent requirement or greater burden on the Contractor or requiring the greater quantity or higher quality material or workmanship shall prevail, unless otherwise directed by the County in writing.

1.2.19 **Order of Precedence.** Conflicts that cannot be resolved in accordance with the rules of interpretation set forth elsewhere in this Section 1.2, shall be interpreted in accordance with the following order of precedence (the first being the highest order of precedence):

.1 Applicable Laws (provided, however, and notwithstanding Subparagraph 1.2.19.10, below, where the Contract Documents or manufacturer's recommendations or specifications require standards higher than those of Applicable Laws, the Contract Documents or manufacturer's recommendations or specifications shall control);

.2 Change Orders, Unilateral Change Orders and Construction Change Directives;

.3 Addenda;

.4 Construction Contract;

.5 Supplementary Conditions;

.6 General Conditions;

.7 General Requirements;

.8 Specifications;

.9 Drawings, subject to the following: (1) large scale plans and details take precedence over small scale Drawings in all cases; (2) full scale Drawings have precedence over both large and small scale Drawings in all cases; (3) detailed Plans and/or Drawings shall have precedence over general Plans and/or Drawings; (4) architectural and structural Drawings take precedence over electrical and mechanical Drawings in regard to location and arrangement of fixtures, outlets, and equipment; and (5) electrical and mechanical Drawings take precedence in describing and specifying equipment and in describing the diagrammatic requirements;

.10 standard and reference specifications which include industry norms, such as, but not limited to, ANSI and ASTM; and

.11 Reference Documents.

1.2.20 **Conditions Precedent.** Wording used in the Contract Documents indicating that a right of the Contractor or an obligation of the County is subject to or conditioned upon the occurrence of a condition or event, whether or not such condition or event is within the control of Contractor, County or others and whether or not such condition or event is expressly stated to be a "condition precedent", shall be understood and interpreted to mean that the stated condition or event is a condition precedent to the existence, arising, performance and exercise of such right or obligation.

### 1.3 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

1.3.1 **Property of County.** Subject to the provisions of Paragraph 2.4.4, below, all Design Documents, Contract Documents and Project Documents that are prepared by Contractor or a Subcontractor, of any Tier, for use in connection with the Project, including any designs, building designs or other depictions underlying or shown in them, and the Intellectual Property Rights thereto, shall be deemed the sole and exclusive property of County and ownership thereof is irrevocably vested in County, whether the Project is executed or not.



**1.3.2 Assignment of Rights.** Contractor shall, without further consideration, obtain any and all Intellectual Property Rights in the Project Documents and Design Documents prepared by Contractor or any Subcontractor, of any Tier, for use in connection with the Project, including any designs, building designs or other depictions underlying or shown in them, free and clear of any liens or other encumbrances, claims or rights of third parties, transfer such rights, if necessary in writing, to County and cooperate with County in securing and registering such rights, such that County shall own all Intellectual Property Rights and any other tangible and/or intangible property rights associated therewith. Such transfer and assignment will be effective for the entire duration of the copyrights and include, but are not be limited to, all rights in related plans, specifications, documentation, derivative works and moral rights.

**1.3.3 Contractor's Warranty.** Contractor represents and warrants that the Project Documents and Design Documents prepared by Contractor or any Subcontractor for use on the Project, and the use of such Project Documents in the ordinary course, are free of any claim of infringement or any other violation of any Intellectual Property Right or other right of any third party.

**1.3.4 Non-Exclusive License.** Without derogation of County's rights under this Section 1.3, Contractor and Subcontractors, of every Tier, are granted a limited, non-exclusive license, revocable at will of County, to use and reproduce applicable portions of the Design Documents, Contract Documents and Project Documents as appropriate to and for use in the execution of the Work and for no other purpose.

**1.3.5 Reproduction.** Contractor shall do all reproduction and distribution of such reproducible prints of Contract Documents and Design Documents as are necessary for the complete pricing and performance of the Work, including, without limitation, all Changes. The costs of such reproduction shall be at Contractor's Own Expense.

**1.3.6 Delivery to County.** All Design Documents and Contract Documents (including originals and copies), and one (1) copy of all other Project Documents, in the possession of Contractor or Subcontractors shall be delivered to County upon the earlier of Final Completion of the Work or termination of the Construction Contract; provided, however, that Contractor shall have the right to retain one (1) copy of the Contract Documents and Submittals as a permanent record.

**1.3.7 Subcontractors.** Contractor shall take all necessary steps to ensure that a provision is included in all contracts with Subcontractors, of every Tier, who perform Work on the Project protecting and preserving County's rights as set forth in this Section 1.3.

## **ARTICLE 2 COUNTY RIGHTS AND OBLIGATIONS**

### **2.1 INFORMATION, APPROVALS AND SERVICES REQUIRED OF COUNTY**

**2.1.1 Legal Descriptions.** County shall furnish, within a reasonable time after written request by Contractor, a legal description of the Site and information describing legal limitations affecting the Site that are recorded with applicable Governmental Authorities, such as, but not limited to, easements.

**2.1.2 Permits and Fees.** County shall secure and pay for only those permits and fees which are expressly stated to be the responsibility of County under the Contract Documents. County shall pay for all hook-up fees (not including "tap fees", which are the responsibility of Contractor pursuant to Paragraph 3.14.3, below) in order to establish a new account with a utility provider.

**2.1.3 County Approvals.** Information, approvals and decisions required of County or a County Consultant for which a County Review Period or County Review Date is included in the Construction Schedule that is approved by County shall be provided in accordance with the Construction Schedule. If a County Review Period or County Review Date is not set forth in the Construction Schedule approved by County, then such information, approvals and decisions shall be provided upon written request by Contractor without unreasonable Delay. Notwithstanding the foregoing, failure by County, Architect or a County Consultant to provide any information, approvals or decisions shall not be considered as a basis for Contract Adjustment to the Contract Time unless and until, and in calculating a Contract Adjustment any Delay or extension of the Contract Time resulting from a late-issuance of such information, approval or decision shall not commence until after:

.1 in the case of information, approval or decision for which there is a County-approved County Review Period or County Review Date in the County-approved Construction Schedule, seven (7) Days have passed since the County and the individual from whom such information, approval or decision is sought have received from Contractor a written notice containing all the following:

- (1) a detailed description of the information, approval or decision required;
- (2) a statement that the County Review Period or County Review Date has expired or passed; and
- (3) a statement, prominently displayed, that: "PURSUANT TO PARAGRAPH 2.1.3 OF THE GENERAL CONDITIONS, THE FAILURE TO PROVIDE THE REQUESTED INFORMATION, APPROVAL OR DECISION WITHIN 7 CALENDAR DAYS FROM THIS NOTICE MAY RESULT IN A REQUEST FOR A CONTRACT ADJUSTMENT"; or

.2 in the case of information, approval or decision for which there is no County Review Period or County Review Date set forth in the County-approved Construction Schedule, thirty (30) Days have passed since the County and the individual from whom such information, approval or decision is sought have received from Contractor a written notice that includes the statements set forth Clauses (1) and (2) of Subparagraph 2.1.3.1, above, and that includes a statement, prominently displayed, that: "PURSUANT TO PARAGRAPH 2.1.3 OF THE GENERAL CONDITIONS, THE FAILURE TO PROVIDE THE REQUESTED INFORMATION, APPROVAL OR DECISION WITHIN 30 CALENDAR DAYS FROM THIS NOTICE MAY RESULT IN A REQUEST FOR A CONTRACT ADJUSTMENT".

**2.1.4 Approvals.** Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of County, Architect or any other Project Team member, or by tests, inspections or approvals required or performed by persons other than the Contractor.

**2.1.5 Non-Specified Items.** County reserves the right to approve materials and sources of supply of materials that are not specified in the Contract Documents and that are used for the performance of the Work.

## **2.2 COUNTY'S RIGHT TO STOP THE WORK**

If Contractor fails to correct Defective Work as required by Section 13.2 of these General Conditions, fails to perform the Work in accordance with the Contract Documents or violates any Applicable Law, County may immediately order Contractor to stop the Work, or any portion thereof, until the cause for such direction has been eliminated by Contractor. Contractor shall immediately comply with such notice at Contractor's Own Expense. Nothing stated herein or elsewhere in the Contract Documents shall be interpreted as placing upon County a duty or responsibility to Contractor or any other party to exercise its right to stop the Work.

## **2.3 COUNTY'S RIGHT TO CARRY OUT THE WORK**

If Contractor fails to carry out the Work in accordance with the Contract Documents, fails to provide sufficient labor, materials, equipment, tools and services to maintain the Construction Schedule, or otherwise fails to comply with any requirement of the Contract Documents, and fails to cure such failure in the manner required by Subparagraph 15.1.1.4, below, County may correct such failure. In such case, County shall be entitled to recover from Contractor or deduct from payments then or thereafter due Contractor for any Loss resulting from such failure, including compensation for the additional services and expenses of County, County Consultants and others whose services are reasonably required and made necessary thereby. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall promptly pay the amount of the shortfall to County.

## **2.4 ACCOUNTING, RECORDS AND AUDIT**

**2.4.1 Accounting System.** Contractor shall exercise such controls as may be necessary for proper financial management of the Work. Such accounting and control systems shall comply with prevailing custom and practice for similar projects, be satisfactory to County and shall include preservation of the books and records

described in Paragraph 2.4.2, below, subject to Contractor's obligations under Paragraph 1.3.6, above, for a period of ten (10) years after Final Completion of the Work, or for such longer period as may be required by Applicable Laws.

**2.4.2 Books and Records.** Contractor shall keep, and shall require provisions to be included in all contracts entered into by Subcontractors, of every Tier, requiring the Subcontractors, of every Tier, to keep, full and detailed books, records, information, materials and data, of every kind and character (hard copy, as well as computer readable data if it exists) that have any bearing on or pertain to any matters, rights, duties or obligations relating to the Project, Work or Construction Contract, including, without limitation, agreements, purchase orders, leases, contracts, commitments, arrangements, notes, change orders, change order requests, estimates, field orders, construction change directives, schedules, requests for information, diaries, logs, reports, shop drawings, samples, exemplars, drawings, specifications, invoices, delivery tickets, receipts, vouchers, cancelled checks, memoranda, accounting records; job cost reports, job cost files (including complete documentation of negotiated settlements), backcharges, general ledgers; documentation of cash and trade discounts earned, insurance rebates and dividends, and other documents relating in any way to any claims, charges or time extensions asserted by Contractor or any of the Subcontractors, of any Tier, or relating to any credits, rebates or discounts owing to County.

**2.4.3 Inspection and Copying.** Contractor shall allow, and shall require provisions to be included in all contracts entered into by Subcontractors, of every Tier, allowing, County and the auditor for the State of California (and the authorized representative(s), auditors, attorneys and accountants of each) upon twenty-four (24) hours notice to Contractor, full access to inspect and copy all its aforesaid books and records at a location within the Southern California area. Such right of audit may be exercised by either County or the auditor for the State of California as often as reasonably necessary to verify Contractor's continuing compliance with the Contract Documents.

**2.4.4 Confidential Information.** Nothing stated in this Section 2.4 or elsewhere in the Contract Documents shall be interpreted as a waiver by Contractor or any Subcontractor of any rights of privilege or confidentiality that are provided for by Applicable Law nor as authorizing the inspection of books and records that contain information concerning estimating means or methods that is not, in whole or part, relevant to a charge or demand being asserted by Contractor or a Subcontractor involving Extra Work, Deleted Work, Delay or a Claim.

**2.4.5 Withholding of Payment.** In addition to and without limitation upon County's other rights and remedies for breach, including any rights of County to withhold payment that are set forth elsewhere in the Contract Documents, County shall have the right, exercised in its sole discretion, to withhold from any payment due to Contractor under an Application for Payment a sum of up to ten percent (10%) of the total amount set forth in such Application for Payment until Contractor and the Subcontractors have complied with any outstanding and unsatisfied obligation under this Section 2.4. Upon compliance with this Section 2.4, any such monies withheld shall be released to Contractor.

**2.4.6 Specific Performance.** Contractor agrees that any failure to provide access to books and records as required by this Section 2.4 will result in irreparable harm and prejudice to County and shall, without the necessity of posting of any bond or undertaking, be specifically enforceable by means of a mandatory injunctive order (temporary, preliminary, provisional or otherwise) issued by a court of competent jurisdiction, which order the County and Contractor hereby consent to being issued based upon affidavits and without the necessity of oral testimony.

## **2.5 COUNTY FURNISHED MATERIALS**

**2.5.1 Supply by County.** County shall have the right to furnish materials, products or equipment directly for processing and incorporation by Contractor in lieu of Contractor providing materials, products or equipment specified in the Contract Documents to be provided by Contractor as part of the Work.

**2.5.2 Deleted Work.** If the materials, products or equipment provided by County pursuant to Paragraph 2.5.1, above, then a Change Order shall be executed deleting such materials, products or equipment from the Work along with a Contract Adjustment reducing the Contract Price in the manner provided for in Article 7, below, applicable to Contract Adjustments for Deleted Work.

**2.5.3 Delivery Deadlines.** Without limitation to Contractor's obligations under Article 8, below, upon receipt of written instruction by County of its intent to provide materials, products or equipment pursuant to this

Section 2.6, Contractor shall notify County promptly in writing of any deadlines within which such materials, products or equipment must be received at the Site in order to avoid Delay.

2.5.4 **Delivery to Site.** Contractor shall, upon their delivery to the Site, properly receive and unload materials, products or equipment furnished by County pursuant to this Section 2.5.

2.5.5 **Care, Custody and Control.** Contractor assumes full and unconditional responsibility for care, custody and control of the materials, products or equipment that are furnished by County pursuant to this Section 2.5, whether or not they have been accepted by County, and assumes sole responsibility for any subsequent loss, injury or damage thereto occurring prior to Final Completion.

2.5.6 **Notice of Deficiencies.** Contractor shall carefully inspect any materials, products or equipment furnished by County pursuant to this Section 2.5 and immediately notify County of any defect or deficiency in such materials, products or equipment or any nonconformity in such materials, products or equipment with the requirements of the Contract Documents or with the requirements of the other documentation provided to Contractor setting forth the conditions of County's purchase. Contractor shall not accept any materials, products or equipment furnished by County with respect to which Contractor has provided such notice of defect, deficiency or non-conformity unless and until instructed to do so in writing by County.

2.5.7 **Incorporation in Work.** Contractor shall, as part of the Work and without Contract Adjustment, provide any and all processing, fabrication, cutting, shaping, fitting, assembly and installation of materials, products or equipment furnished by County pursuant to this Section 2.5 in full compliance with the requirements of the Contract Documents and the manufacturer's instructions and recommendations.

## 2.6 COUNTY INSTALLED ITEMS

Contractor shall notify County, a reasonable time in advance, of the Contractor's scheduled dates for installation of items that are specified in the Contract Documents to be placed on, attached to or incorporated into the Work by County or Separate Contractors. In the event that Contractor fails to do so or if due to Unexcused Delay the County is unable after such notice by Contractor to so place, affix or incorporate such items, then Contractor shall be responsible, in addition to any amounts due to County for liquidated damages, to reimburse County for costs of storage or rental of temporary replacement items until such time as the Work is in a condition suitable for such items to be placed, affixed or incorporated.

## 2.7 COUNTY'S ADDITIONAL RIGHTS

The rights stated in this Article 2 are in addition to and not in limitation of any other rights of County granted elsewhere in the Contract Documents or under Applicable Laws.

# ARTICLE 3 CONTRACTOR PERFORMANCE

## 3.1 CONTRACTOR STATUS

3.1.1 **Independent Contractor.** Contractor is, and shall at all times be deemed to be, an independent contractor and is wholly responsible for the performance of the obligations required of it by the terms of the Contract Documents.

3.1.2 **Agents, Employees.** Contractor wholly assumes responsibility for the acts and omissions of its agents and employees and the agents and employees of each Subcontractor, of every Tier, as they relate to the Work. Contractor, its agents and employees, shall not be entitled to any rights or privileges of County's employees and nothing contained in the Contract Documents and no course of conduct shall be construed as creating the relationship of employer and employee, or principal and agent, between County and any agent or employee of Contractor or any Subcontractor. County shall have the right, but not the obligation, to monitor the employment and other activities of Contractor and the Subcontractors to determine compliance with the terms of the Contract Documents.

**3.1.3 Licenses.** Contractor and the Subcontractors, of every Tier, shall maintain, such contracting, professional and business licenses as may be required by Applicable Laws for the duration of time that Contractor is performing the Work under the Contract Documents, including the period of any warranty provided covering all or any portion of the Work.

**3.1.4 Subcontractors.** Contractor is responsible to County for acts and omissions of the Subcontractors and their agents and employees and other persons performing portions of the Work under a contract with a Subcontractor, of any Tier.

**3.1.5 Design Services.** Contractor shall provide professional services if such services are expressly, or by reasonable implication, required by the Contract Documents for a portion of the Work or are required in order for Contractor to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Professional design services or certifications so required of Contractor shall be furnished by design professionals exercising the highest standard of care and utilizing designs and engineering that comply with all systems, materials or equipment, performance and design criteria set forth in the Contract Documents. Certification by a properly licensed design professional, including such professional's signature and seal, shall appear on all drawings, calculations, specifications, certifications and other documents prepared by such professional. Submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted. County, Architect and County Consultants shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals.

### **3.2 REVIEW OF DOCUMENTS, SITE AND EXISTING IMPROVEMENTS**

**3.2.1 Contractor's Duty of Review.** Contractor's submission of its Bid and execution of the Construction Contract constitutes its representation, acknowledgement and agreement that it had sufficient time, access and opportunity prior to the Bid Closing Deadline to conduct a careful and thorough examination, to its satisfaction, of:

.1 the Bidding Documents, Contract Documents, Reference Documents and other information provided by County to Contractor prior to the Bid Closing Deadline concerning the Project, Site or Existing Improvements;

.2 the visible conditions at the Site and its surroundings, visible conditions of Existing Improvements and their existing uses by County or the public, routes of ingress and egress, and local conditions in the vicinity of the Site (including, without limitation, sources and availability of labor, materials and equipment);

.3 the status of any construction at the Site concurrently under construction; and

.4 all information concerning visible and concealed conditions above and below the surface of the ground at the Site and in Existing Improvements (including, without limitation, surveys, reports, data, as-built drawings of Existing Improvements and utility sources, capacities and locations) that was either (1) provided by County to Contractor or other Bidders (including, but not limited to, the Bidding Documents and Reference Documents) or (2) reasonably available to Contractor for review in the public records of the County of Riverside or the City in which the Project is located.

#### **3.2.2 Contract Adjustments.**

.1 **Differing Site Conditions.** Except as otherwise provided in Subparagraph 3.2.3, below, the Contractor's right to a Contract Adjustment in the event Contractor encounters conditions at the Site or in Existing Improvements that vary from those indicated by the Contract Documents or other information that was either reviewed by Contractor or that Contractor was given the opportunity to review prior to the Bid Closing Deadline shall be governed exclusively by Paragraph 4.3.8, below, pertaining to Differing Site Conditions.

.2 **Design Discrepancies.** Except as otherwise provided in Subparagraph 3.2.3, below, and subject to the Contractor's compliance with the other provisions of the Contract Documents governing the Contractor's right to a Contract Adjustment (including, without limitation, Article 7 and Article 8, below), Contractor shall be entitled to a Contract Adjustment due to Design Discrepancies, subject to the following conditions and limitations:

(1) **Compensable Change.** There shall be no Contract Adjustment to the Contract Price for Extra Work that the Contractor is required to perform as a result of a Design Discrepancy unless all of the following conditions have been met prior to Contractor or any Subcontractor performing any portion of the Work involving or affected by such Design Discrepancy:

(a) the circumstances giving rise to such Extra Work conform to all of the requirements of Subparagraph 1.1.29.2 through Subparagraph 1.1.29.4, above, applicable to Compensable Changes;

(b) Contractor has submitted to County and Architect a Request for Information in compliance with Paragraph 3.2.5, below, seeking clarification of such Design Discrepancy;

(c) Contractor has submitted to County a timely and complete Notice of Change in accordance with Article 7, below, describing such Extra Work in detail;

(d) Contractor has received a Construction Change Directive signed by County in accordance with Article 7, below, directing that Contractor perform the portion of the Work in question; and

(e) unless otherwise provided in such Construction Change Directive, Contractor has submitted to County a Change Order Request in accordance with the requirements of Article 7, below, setting forth the particulars of its request for Contract Adjustment on account of such Extra Work.

(2) **Compensable Delay.** There shall be no Contract Adjustment to the Contract Price or Contract Time for Delay as a result of a Design Discrepancy unless all of the following conditions have been met prior to Contractor or any Subcontractor performing any portion of the Work involving or affected by such Design Discrepancy:

(a) if the Delay is the result, in whole or in part, of Extra Work, all of the requirements of Subparagraph 3.2.2.2 (1), (a) through (e), above, have been met;

(b) the circumstances giving rise to such Delay conform to all of the requirements of Subparagraph 1.1.30.2 and Subparagraph 1.1.30.3, above, applicable to Compensable Delay; and

(c) Contractor has submitted to County a timely and complete Notice of Delay and a timely and complete Request for Extension in accordance with Article 8, below, setting forth the particulars of its request for Contract Adjustment on account of such Compensable Delay.

(3) **Differing Site Conditions.** The Contractor's right to a Contract Adjustment as a result of variances between (a) the Contract Documents or other documents or information described in Paragraph 3.2.1, above, that, prior to the Bid Closing Deadline was either reviewed by Contractor or was available to Contractor for review prior to the Bid Closing Deadline and (b) conditions at the Site or in Existing Improvements shall, notwithstanding the fact that the circumstances asserted by Contractor as a basis for such Contract Adjustment may involve, relate to or arise out of a Design Discrepancy, be governed by the provisions of the Contract Documents setting forth the Contractor's right to Contract Adjustments on the grounds of Differing Site Conditions.

### 3.2.3 WAIVER BY CONTRACTOR.

**CONTRACTOR AGREES THAT IT SHALL NOT BE ENTITLED TO, AND HEREBY CONCLUSIVELY WAIVES, ANY RIGHT TO CONTRACT ADJUSTMENT, AS WELL AS THE RIGHT TO ANY OTHER OR FURTHER RECOURSE OR RIGHT OF RECOVERY FROM COUNTY, ON ACCOUNT OF LOSSES OR DELAYS THAT ARE A RESULT OF EITHER A DIFFERING SITE CONDITION OR A DESIGN DISCREPANCY, IF PRIOR TO THE BID CLOSING DEADLINE SUCH DIFFERING SITE CONDITION OR DESIGN DISCREPANCY WAS:**

(1) **DISCOVERED BY CONTRACTOR AND CONTRACTOR, NOTWITHSTANDING SUCH DISCOVERY, FAILED TO REPORT SUCH DIFFERING SITE CONDITION OR DESIGN DISCREPANCY TO COUNTY IN WRITING PRIOR TO THE BID CLOSING DEADLINE;**

(2) **ALTHOUGH NOT ACTUALLY DISCOVERED BY CONTRACTOR PRIOR TO THE BID CLOSING DEADLINE WAS REASONABLY DISCOVERABLE BY CONTRACTOR UNDER THE STANDARD OF PERFORMANCE SPECIFIED IN THE CONSTRUCTION CONTRACT, INCLUDING, WITHOUT LIMITATION, A DIFFERING SITE CONDITION OR DESIGN DISCREPANCY THAT WAS OVERLOOKED BY CONTRACTOR DUE TO A FAILURE BY CONTRACTOR TO FULLY FAMILIARIZE ITSELF PRIOR TO THE BID CLOSING DEADLINE WITH ANY OF THE DOCUMENTS, INFORMATION OR CONDITIONS REFERRED TO IN PARAGRAPH 3.2.1, ABOVE.**

**3.2.4 Continuing Obligation.** In addition and without limitation to Contractor's obligations under Paragraph 3.2.1, above, or elsewhere in the Contract Documents, Contractor shall have the continuing obligation until Final Completion to promptly report to County, by means of submission by Contractor of a Request for Information that complies with the requirements of Paragraph 3.2.5, below, any and all of the following:

.1 information contained in the Bidding Documents, Contract Documents, Reference Documents or other documentation that was either reviewed by Contractor or that Contractor was given the opportunity to review prior to the Bid Closing Deadline, as well as any visible conditions at the Site, in Existing Improvements or in the vicinity of the Project, that Contractor knows, or in the exercise by Contractor of its duties under the Standard of Performance should have known, may render a portion of the Work in any respect, wholly or partially, unsuitable or incomplete to meet the requirements of the Contract Documents, the Design Intent or Applicable Laws, and

.2 conditions in the Work that constitute Defective Work or that cause or are likely to cause any other portion of the Work to be Defective Work.

Without limitation to County's other rights under the Contract Documents, any portion of the Work, Existing Improvements or the work of Separate Contractors or County's own forces requiring replacement, repair or correction due to a failure by Contractor or any Subcontractor, of any Tier, to comply with its continuing obligation under this Paragraph 3.2.4 shall be promptly replaced, repaired or corrected to County's satisfaction, at Contractor's Own Expense.

**3.2.5 Requests for Information.**

.1 **Time for Submittal.** Requests for Information shall be submitted no later than three (3) Days after the date Contractor learns of the circumstances giving rise to the question contained in the Request for Information. Requests for Information shall be submitted by or through the Contractor and not directly by Subcontractors.

.2 **Content.** Each Request for Information shall, in addition to the Contractor's specific question or request, include the following:

(1) a detailed description of the circumstances giving rise to the Contractor's request or question, including, without limitation, any related Design Discrepancy;

(2) Contractor's request for clarification, including, without limitation, any request for further detailing or correction of the Contract Documents; and

(3) a statement of whether Contractor believes it is entitled to a Contract Adjustment by reason of the circumstances described.

.3 **Form.** Contractor shall submit Requests for Information using forms provided or approved by County.

.4 **Unnecessary, Multiple Requests.** Contractor shall carefully review, coordinate and consolidate (where appropriate to prevent piecemeal submission) Requests for Information (whether originating with Contractor or the Subcontractors) prior to submitting them in order to eliminate unnecessary or duplicative requests.

.5 **Responses.** Responses to Requests for Information shall be furnished with reasonable promptness so as to not unreasonably Delay progress of the Work; provided, however, that the timing of a response by the Architect, County or a County Consultant to a Request for Information shall not constitute grounds for a Contract Adjustment unless Contractor has complied with the requirements set forth in this Paragraph 3.2.5 and, if applicable, Paragraph 2.1.3, above.

.6 **Back Charges by County.** County shall have the right to deduct from payments due to Contractor sums expended by County for the services of the Architect, Inspectors of Record or County Consultants due to a failure by Contractor to comply with this Paragraph 3.2.5.

**.7 WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO SUBMIT A REQUEST FOR INFORMATION IN ACCORDANCE WITH AND UNDER CIRCUMSTANCES IN WHICH A REQUEST FOR INFORMATION WAS REQUIRED BY THIS PARAGRAPH 3.2.5 SHALL RESULT IN CONTRACTOR WAIVING ITS RIGHT TO A CONTRACT ADJUSTMENT ON ACCOUNT OF ANY LOSS OR DELAY THAT COULD HAVE BEEN AVOIDED IF SUCH REQUEST FOR INFORMATION HAD BEEN PROPERLY PREPARED AND TIMELY SUBMITTED.**

3.2.6 **Correction of Work.** Contractor shall, at Contractor's Own Expense, correct or replace in accordance with the direction of County any portion of the Work that is performed by Contractor or a Subcontractor knowing that it involves, or that Contractor or Subcontractor in the exercise of reasonable care and diligence should have known involves, a portion of the Contract Documents that contains an error, omission, conflict, ambiguity, lack of coordination or noncompliance with Applicable Laws, without first notifying and obtaining the written approval of County and Architect.

**3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

3.3.1 **General Obligation.** Contractor shall provide competent, fully qualified personnel to supervise, administer, manage and direct the Work, competently and efficiently, at all times devoting their best skill and attention to perform the Work in accordance with the Contract Documents.

3.3.2 **Supervisory Staff.** Contractor shall employ a competent project manager, superintendent, scheduler, forepersons and necessary assistants during performance of the Work. Contractor's superintendent and forepersons shall be present at the Site at all times that the Work is in progress and at any time that any employee of Contractor or a Subcontractor is present at the Site. Contractor's project manager and superintendent shall, unless excused from attendance by the County, attend all job meetings. Contractor's project manager and superintendent must be able to fluently read and write in English. Contractor's superintendent shall not perform the Work of any trade, pick up materials, or perform any Work not directly related to the supervision of the Work and shall be available twenty-four (24) hours a Day, seven (7) Days a week, to respond to emergencies.

3.3.3 **County Supplementary Personnel.** Without limitation upon any of the rights or remedies of the County under the Contract Documents or under Applicable Laws, in the event that Contractor fails to have personnel on Site to supervise the Work, the County shall have the right, but not the obligation, upon twenty-four (24) hours' telephonic or email notice by the County to Contractor, to provide such supervision on a temporary basis and to deduct from the sums owing to Contractor the actual costs of such temporary supervision. Contractor shall, notwithstanding the County's providing such temporary supervision, remain solely responsible for all actions and omissions of its personnel and of the Subcontractors.

3.3.4 **Means, Methods, Procedures.** Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and coordinating all portions of the Work, unless the Contract Documents specify other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, Contractor shall nonetheless be fully and solely responsible for the adequacy and safe implementation of such means, methods, techniques, sequences or procedures. If Contractor believes that such specified means, methods, techniques, sequences or procedures may not be safe or adequate, Contractor shall give written notice to County and Architect and shall not proceed with that portion of the Work without further written instruction from County or Architect. In response to such notice, County may order Contractor to improve the character or increase the efficiency



of the means, methods, techniques, sequences or procedures employed, and Contractor shall conform to such order; but the failure of County to order such improvement or increase of efficiency will neither relieve Contractor from its sole responsibility for safety at the Site nor relieve Contractor from its obligation to perform the Work in accordance with the Contract Documents and Applicable Laws.

### 3.4 LABOR, MATERIALS AND EQUIPMENT

3.4.1 **Costs of Work.** Contractor shall provide and pay for labor, materials, tools, equipment, machinery, water, heat, utilities, transportation, facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated into the Work.

3.4.2 **Coordination.** Contractor shall provide supervision sufficient to ensure proper coordination for the timely and efficient performance and completion of the Work.

3.4.3 **Field Conditions.** Before commencing the Work or any activities on the Site, Contractor shall take field measurements and verify field conditions and carefully compare such field measurements and conditions with the information in the Contract Documents and other information obtained by or available to Contractor.

3.4.4 **Layout.** Contractor is solely responsible for (1) the accurate layout of all portions of the Work, (2) the accuracy of the Project lines and levels, (3) erection of the Work square, plumb, level, true to line and grade, in the exact plane, and to the correct elevation and (4) sloping of surfaces to drain as indicated by the Contract Documents, or, if not indicated, as needed to provide for adequate drainage.

#### 3.4.5 Materials, Equipment

.1 **Delivery, Storage, Inventory.** Materials and equipment shall be: (1) furnished in ample quantities and at such times as to ensure uninterrupted progress of the Work; and (2) if located on the Site, properly stored and protected as reasonable and necessary, or as directed by County, to prevent Loss from any foreseeable cause, including, without limitation, theft. In the event that County gives direction as to the location for storage or protection of materials or equipment on the Site, Contractor shall nonetheless remain solely responsible for its safe and secure storage and protection. No part of any such stored materials and equipment shall be removed from its place of storage except for immediate installation in the Work. Contractor shall keep an accurate inventory of all such stored materials and/or equipment in a manner satisfactory to County.

.2 **Purchases.** Contractor shall place orders for materials and/or equipment as specified so that delivery of same may be made without Delay to the Work. Contractor shall, upon request from County, furnish to County documentary evidence showing that orders have been placed. County reserves the right in the event Contractor fails, within three (3) Days after receipt of written notice by County to Contractor to comply with the requirements of this Subparagraph 3.4.5.2, to comply with the requirements of this Subparagraph 3.4.5.2, to deduct the costs paid or payable by County associated with such purchases from payments otherwise owing to Contractor. Contractor shall, if requested by County, accept assignment of any such contracts entered into by County without a Contract Adjustment.

.3 **Title.** No material, supplies or equipment for the Work shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies and equipment installed or incorporated in the Work and agrees upon Final Completion to deliver the Work, including the premises, land, improvements and appurtenances on or to which the Work is placed, located or affixed, to County free from any claims, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any of the Work shall have any right of lien upon the Site, or any Existing Improvement or appurtenance thereon, except that (1) nothing stated in this Subparagraph 3.4.5.3 shall be interpreted as a waiver by Contractor or any Subcontractor of its right under Applicable Laws to serve a stop notice for Work that is not paid for by County as required under the terms of the Contract Documents; and (2) Contractor may install metering devices or other equipment of utility companies or political subdivisions, title to which may be retained by such utility company or political subdivision, provided that in the event of installation of any such metering device or utility equipment, Contractor shall advise County as to the owner, and the precise location, thereof.

**.4 Substitutions.** No substitution of materials, equipment, articles, processes or other items of the Work required under the Contract Documents will be made without written approval of County, which approval may be granted or denied in the sole and absolute discretion of County. With respect to any such substitution made or requested by Contractor, neither the occurrence of a substitution made or requested by Contractor nor the approval or disapproval by County of a substitution that is made in accordance with this Subparagraph 3.4.5.4 shall give rise to any right of Contractor to a Contract Adjustment. Contractor shall, notwithstanding County's or Architect's approval, remain solely responsible for the sufficiency and suitability of all substitutions requested by Contractor and approved, or otherwise made, by Contractor.

**.5 Parts List.** Contractor will provide a printed parts list for all items which might be subject to replacement and for which parts lists are either expressly required by the Contract Documents or customarily provided according to usual commercial practices.

**.6 Manuals.** As part of its obligation for submission of Record Documents, four (4) hard copies and one (1) electronic version of operations and maintenance manuals shall be prepared and transmitted by Contractor to County prior to and as a condition of Final Completion. Final Payment will not be due until County has received all such manuals and all other manuals covering the Work that are either required to be provided by the terms of the Contract Documents or if not required are customarily provided according to usual commercial practices applicable to the portion of Work involved. Operating instructions will be included within the equipment manuals and will state all information necessary for County to operate, use, maintain and service the equipment fully and efficiently.

**.7 Start Up.** Contractor will be responsible for start-up of all systems and equipment purchased as part of the Work and has included sufficient amounts in its Bid to cover contingencies arising out of the start-up of such systems and equipment. Contractor will comply fully with each manufacturer's specifications and instructions. Systems and equipment specified to be furnished with manufacturer's supervision of start-up will be placed in operation only under such supervision.

### 3.5 CONTRACTOR'S WARRANTY

**3.5.1 General Warranty.** In addition to other warranties and guarantees required by the Contract Documents, Contractor shall, and hereby does, warrant and guarantee that: (1) the Work will conform to the requirements of Contract Documents, including, without limitation, any performance standards that are part thereof; (2) all Work for which there is not a specific requirement, criteria, specification or standard set forth in the Contract Documents will conform to the Standard of Performance; (3) all labor, equipment, materials and other items of Work will be when installed new and free of liens, claims and security interests; (4) without limitation to the other requirements of this warranty, all labor, installation and workmanship will be performed in a good and workmanlike manner; and (5) all labor, materials, equipment, services and work shall be free of defects for a period of one (1) year after Final Completion. If required by County, Contractor shall furnish satisfactory evidence as to the kind and quality of services, labor, installation, materials and equipment used. Manufactured items installed in the Work, unless otherwise specifically stated in the Contract Documents, are to be installed in strict accordance with manufacturer's current printed instructions.

**3.5.2 Repair, Replacement.** Without limitation upon the County's other rights or remedies under the Contract Documents or Applicable Laws, any and all Work that, for reasons other than (1) ordinary wear and tear or (2) abuse or neglect by persons or entities other than the Contractor or the Subcontractors, is not in conformance with the warranties or guarantees required by the Contract Documents or Applicable Laws shall be repaired or replaced, together with the repair or replacement of any other Work, Existing Improvements or the work of the Separate Contractors, the County's own forces or others, which may be removed, displaced or damaged in so doing. The Contractor shall notify the County in writing upon completion of such repair or replacement. In the event of failure by the Contractor to commence and pursue with diligence said replacement or repair within ten (10) Days after being notified by the County, the County is hereby authorized to proceed with such replacement and repair as the County deems necessary and expedient and to charge such costs to Contractor at Contractor's Own Expense.

**3.5.3 Not a Limitation.** The warranties stated in this Section 3.5 are in addition to any other warranties or guarantees that are required under any other provision of the Contract Documents or Applicable Laws. Nothing stated in this Section 3.5 shall be interpreted as a limitation upon the County's rights under any warranties or

guarantees provided for under any other provision of the Contract Documents or under Applicable Laws that afford the County greater rights than the rights afforded to County under this Section 3.5.

**3.5.4 Assignment.** Contractor does hereby unconditionally and irrevocably assign to County all warranties and guarantees issued or made by any Subcontractor, of any Tier (including, without limitation, any manufacturer, supplier and distributor) in connection with the Work. Such assignment shall not relieve Contractor of, or otherwise limit, any of its obligations contained in the Contract Documents, including, without limitation, the general responsibility and liability of Contractor for a breach by a Subcontractor (including, without limitation, any manufacturer, supplier and distributor, of any Tier) of a warranty or guarantee given by such Subcontractor in connection with the Work.

**3.5.5 Close-Out.** Unless sooner requested by County, Contractor shall furnish to County, as part of the Close-Out Documents and as a condition to Final Payment, all written guarantees or warranties that are required by the terms of the Contract Documents. All such guarantees and warranties shall be: (1) in writing; (2) indexed and bound; (3) accompanied by such certifications and instruction materials as may be required by the Contract Documents; and (4) issued to County or assignable by their terms, and in fact assigned, to County.

### 3.6 TAXES

**3.6.1 Payment by Contractor.** Contractor shall pay, at Contractor's Own Expense, all local, state and federal taxes, including, without limitation, all sales, consumer, business license, use and similar taxes on materials, labor or other items furnished for the Work or portions thereof provided by Contractor or the Subcontractors, of all Tier, all taxes arising out of its operations under the Contract Documents and all benefits, insurance, taxes and contributions for social security and unemployment insurance which are measured by wages, salaries or other remuneration paid to Contractor's employees. If under federal excise tax law any transaction hereunder constitutes a sale on which a federal excise tax is imposed, and the sale is exempt from such excise tax because it is a sale to a state or local government, then County, upon request, will execute documents necessary to show: (1) that County is a political subdivision of the State for the purposes of such exemption; and (2) that the sale is for the exclusive use of County. No excise tax for such materials shall be included in any price (including, without limitation, the Bid) submitted by Contractor for the Work or for Changes in the Work.

**3.6.2 Tax Exempt Projects.** If applicable to the Project, Contractor shall comply with Applicable Laws concerning tax-exempt construction projects.

**3.6.3 Records of Taxes.** Contractor and the Subcontractors shall keep sufficient records to verify the amount of sales and use taxes paid. Copies shall be submitted with each monthly Application for Payment. Failure to keep or submit such records, resulting in the inability of County to claim a refund for taxes for such materials, shall render Contractor liable to County for the amount of such tax refund.

### 3.7 PERMITS, FEES AND LEGAL NOTICES

**3.7.1 Permits.** Contractor shall obtain and pay for all permits and approvals that are not stated in the Contract Documents to be the responsibility of the County. Such permits and approvals that are the responsibility of the Contractor may include local building or land use permits, California Department of Fish and Game Streambed Alteration Agreements (Section 1600 et seq.), California Department of Fish and Game collection permits, U.S. Army Corps of Engineers 404 fill and dredge authorization, Clean Water Act Section 401 authorization (managed by the local California Regional Water Quality Control Boards) land owner agreements, or other regulatory permits or approvals required for the implementation of the Project. All permits, licenses and certificates obtained by Contractor shall be delivered to County prior and as a condition to Final Completion and Contractor's right to Final Payment.

**3.7.2 Applicable Laws, Notices.** Contractor shall comply with, and give notices required by, Applicable Laws bearing on performance of the Work.

**3.7.3 Bonds, Undertakings.** Contractor shall, without Contract Adjustment, procure and obtain all bonds required of the County or the Contractor by the municipality in which the Project is located or by any other public or private body with jurisdiction over the Project. In connection with such bonds, the Contractor shall prepare all applications, supply all necessary back-up material and furnish the surety with any required personal undertakings. The Contractor shall also obtain and pay, without Contract Adjustment, all charges for all approvals for street closings,

parking meter removal and other similar matters as may be necessary or appropriate from time to time for the performance of the Work.

**3.7.4 Notice of Violations.** Contractor shall immediately notify County in writing of any instruction received from County, or any other Project Team member that, if implemented, would cause a violation of any Applicable Law.

**3.7.5 Governmental Authority Approvals.** Where the Contract Documents state, or Applicable Laws require, that materials, processes or procedures must be approved by a Governmental Authority, Contractor shall be responsible for satisfying the requirements and obtaining the approval of such Governmental Authority.

### **3.8 CONTRACTOR'S PERSONNEL**

**3.8.1 Key Persons.** Contractor's employees acting as project manager, scheduler and superintendent constitute Key Persons. Individuals acting as Key Persons who are not already identified in Contractor's Post-Award Submittals shall be identified in writing to County prior to commencement of the Work.

**3.8.2 Background Check.** Contractor shall perform, prior to commencing Work on the Site, a thorough background check of each of the Key Persons and shall not, without prior written approval of County, employ any person to act as a Key Person if such background check, or other information known to Contractor, discloses a felony conviction or other matter which casts any reasonable doubt on the competency, reliability or honesty of such person.

**3.8.3 Project Manager.** The Key Person acting as project manager shall be deemed to have full authority to contractually bind Contractor, including, without limitation, the authority to bind Contractor to the terms of Contract Adjustments.

**3.8.4 Transfer.** Contractor's Key Personnel are deemed of essence to the Construction Contract. No Key Person shall, for so long as he/she is employed by Contractor, be transferred to any other project nor any of his/her responsibilities reassigned at any time during performance of the Work without the prior written approval of County, which approval may be granted or withheld in County's sole and absolute discretion.

**3.8.5 Removal.** County shall have the right, at any time, to direct the removal and replacement of any Key Person if his/her performance is determined by County, in its sole and absolute discretion, to be unsatisfactory.

**3.8.6 Replacement.** Any individual proposed by Contractor as a replacement for a Key Person must be approved in advance by County, such approval not to be unreasonably withheld, after submission by Contractor to County of complete information concerning such individual's experience and qualifications.

**3.8.7 Communications.** Important communications by Key Persons shall be confirmed in writing by Contractor. Other communications by Key Persons shall be confirmed on written request in each case.

**3.8.8 Contact Information.** Contractor shall provide to County, prior to the start of the Work, telephone numbers where Key Persons can be reached 24-hours a day, 7 Days a week.

**3.8.9 Signatures.** Prior to commencing the Work, Contractor shall submit to County a facsimile of the signatures of the Key Person acting as project manager, as well as any other representatives of Contractor with authority to sign on behalf of and contractually bind Contractor.

**3.8.10 Exclusion from Site.** Contractor shall at all times maintain good discipline and order at the Site among its employees and the employees of the Subcontractors. Any person in the employ of Contractor or any of the Subcontractors, of any Tier, whom County deems, in its sole and absolute discretion, incompetent, unfit, intemperate, troublesome or otherwise undesirable shall be excluded from the Site and shall not again be employed on the Site except with written approval of County.

### 3.9 CONTRACTOR'S CONSTRUCTION SCHEDULE

3.9.1 **Preparation.** Within twenty-one (21) Days after issuance by County of the Notice of Intent to Award, the Contractor shall prepare and submit a Construction Schedule for the Work, both in hard copy and electronically, for the County's approval. The Construction Schedule shall in all respects conform to and be consistent with the time requirements for the Project set forth in the Construction Contract.

3.9.2 **Format.** The Construction Schedule shall be in the form of a critical path progress schedule that shows, in graphic form, a plan for performance of the Work within the Contract Time. It shall be prepared, using Primavera P3, as a time-scaled bar chart showing: (1) continuous flow from left to right and activities and milestones that are critical to Substantial Completion and Final Completion of the Work; (2) identification of "float"; and (3) a clearly highlighted critical path. Durations and specific calendar days shall be clearly and legibly shown for the early and late start and finish of each activity. With the exception of County Review Periods and Governmental Authority Review Periods, any activity with more than fifteen (15) Days in duration will be segmented into fifteen (15) Day increments. No more than ten percent (10%) of the activities shall be shown as critical. Techniques or methods designed to suppress depiction of available float are strictly prohibited.

3.9.3 **Detail.** Activities shown in the Construction Schedule shall be in sufficient detail to demonstrate a practical plan to complete the design, engineering, fabrication and construction within the Contract Time and shall, at a minimum, include the following:

- .1 the start and finish date of each activity;
- .2 the anticipated percent of completion at the end of each month;
- .3 the weighted labor value expressed as a percentage of the total labor cost of the Work for each activity;
- .4 the final manpower curves by trade;
- .5 the anticipated purchase and delivery of major materials and equipment;
- .6 the County's occupancy requirements;
- .7 receipt and incorporation of materials, products or equipment to be furnished by County (if any);
- .8 County Review Periods and County Review Dates that are acceptable to and approved by County;
- .9 Governmental Authority Review Periods; and
- .10 the activities identified as being on the critical path to Substantial Completion and Final Completion of the Work.

3.9.4 **Updates.** Throughout the performance of the Work, weekly updates shall be delivered, in hard copy and, if required by County, in an electronic form satisfactory to County. In addition, Contractor shall regularly prepare and submit to County short term, three (3) week "look-ahead" schedules generated from the Construction Schedule approved by County. Except to the extent permitted by Contract Adjustment to the Contract Time approved by County in a duly executed Change Order or Unilateral Change Order, in no event shall the Contractor's updates or "look ahead" schedules alter the dates for Substantial Completion or Final Completion set forth in the Construction Schedule approved by County.

3.9.5 **Governing Schedule.** The governing schedule for the Work shall be the updated Construction Schedule approved by the County. Unless otherwise directed in a writing signed by County, no other schedule shall

be used or relied upon by the Contractor or its Subcontractors in planning or performing the Work or in connection with any request for a Contract Adjustment to the Contract Time.

**3.9.6 Submittal Schedule.** Within twenty-one (21) Days after the receipt by the Contractor of the Notice of Intent to Award, the Contractor shall prepare and submit, in accordance with the Contract Documents, a Submittal Schedule for the County's approval. The Submittal Schedule shall be coordinated with the Construction Schedule and allow time for review of the Submittals as may be required by the Contract Documents, or if none is required, a reasonable time for such review. Contractor shall keep the Submittal Schedule current and updated in the same manner as required for updating of the Construction Schedule.

**3.9.7 Schedule Responsibility.** Contractor is and shall remain solely responsible, notwithstanding the County's review or approval thereof, for the accuracy, suitability and feasibility of all schedules it prepares for the Project, including, without limitation, the Construction Schedule, Submittal Schedule, "look ahead" schedules, recovery schedules and any updates thereof.

**3.9.8 Condition of Payment.** Compliance by Contractor with the requirements of this Section 3.9 and the other provisions of the Contract Documents pertaining to preparing, submitting, revising and updating the Construction Schedule and Submittal Schedule is a condition to County's obligation to make payment to Contractor. Recognizing that scheduling is a continuing, cumulative and recurring obligation, failure by County or to assert a right to withhold payment under this Paragraph 3.9.8 due to a noncompliance by Contractor with its schedule obligations shall not waive or diminish the County's right to withhold or disapprove of future payments on account of such prior, or any other past or future, noncompliance of the same or similar nature.

**3.9.9 Scheduling by County.** Without limitation to County's other rights under the Contract Documents, if Contractor fails after written notice by County to perform any part of its obligations relating to scheduling, County shall have the right, but not the obligation, to retain one or more schedule consultants to perform, in whole or in part, the Contractor's obligations or supplement the scheduling services provided by Contractor and to reimburse County for the costs of such consultant services by withholding such costs from payments to Contractor.

### **3.10 DOCUMENTS AT SITE, REPORTING, MEETINGS**

#### **3.10.1 Documents at Site**

**.1 Contract Documents, Submittals.** Contractor shall at all times while performing Work at the Site maintain, in good order, at the Site: (1) one legible set of the permitted Contract Documents; (2) one legible copy of the current version of the other Contract Documents; (3) one legible and current version of approved Shop Drawings, Product Data, Samples and other Submittals; (4) one approved Storm Water Pollution Prevention Plan (SWPPP); and (5) one copy of all reports prepared pursuant to the Mitigation, Monitoring, and Reporting Program (MMRP) requirements of the California Environmental Quality Act.

**.2 Record Documents.** Contractor shall maintain Record Drawings and Specifications in a satisfactory record condition by posting, on a weekly basis (or, in the case of building or site mechanical, electrical, plumbing or fire sprinkler systems, as soon thereafter as is reasonable and practical), thoroughly and neatly, on the Drawings and Specifications all Changes to the Work and the location of the Work, including, without limitation, the location of portions of the Work shown diagrammatically, as occurs in the actual construction of the Work. The Record Drawings and Specifications and other Record Documents shall be prepared or converted, if requested by County, to electronic form (such as, AutoCAD, Adobe Acrobat or other software satisfactory to County). All Record Drawings and Specifications and other Record Documents shall be deemed the sole property of County and, at the earlier of Final Completion or termination of the Construction Contract, shall be turned over to County. At the time they are so turned over to County, they shall be manually signed by Contractor's superintendent certifying that, to the best of his/her knowledge, they are true and accurate and that the indications thereon represent the actual condition of the Work.

**.3 Availability for Review.** Copies or originals of all documents required to be maintained by Contractor at the Site or required to be submitted to County or the Architect shall be available at all times at the Site while Work is being performed for review by County, Inspector of Record, Architect and Governmental Authorities.

**.4 Condition of Payment.** Compliance by Contractor with the requirements of this Paragraph 3.10.1 shall be deemed a condition to Contractor's right to payment upon its Applications for Payment.

**3.10.2 Daily Reports.**

**.1 Delivery.** At the end of each Day that Contractor performs the Work on the Site, Contractor shall submit a daily report to County (on the form provided or approved by County) together with applicable delivery tickets for all labor, materials and equipment furnished that Day. If requested by County, daily reports shall be delivered electronically.

**.2 Content.** Daily Reports shall include the following information:

- (1) Labor - The names of the workers, and for each such worker his/her classification and hours worked.
- (2) Material - A list of the different materials used and for each different material the quantity used.
- (3) Equipment - The type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable.
- (4) Inspection and Testing Activities – A list of inspections performed by name of inspector and testing company and the type of inspection, items of the Work involved and a description of the outcome of such inspection or test.
- (5) Visitors, Guests, Dignitaries – A list of visitors and guests by name, title, company and purpose of visit.
- (6) Areas of the Work – A statement of the areas of the Site on which the Work was performed and a detailed description of the stage, status and progress of the Work in each such area at the beginning and end of the Day.
- (7) Accidents, Delays, Defective Work – A description in detail of any injuries to the workers, accidents or delays that occurred or Defective Work that was encountered.
- (8) Other Services and Expenditures – A description of other services and expenditures in such detail as County may require.

**.3 Payment.** Timely and complete submission of daily reports by Contractor shall be a condition to Contractor's right to payment under the Construction Contract.

**3.10.3 Progress Meetings.** Contractor shall attend all progress meetings at the Site, at which meetings progress of the Work shall be reported in detail with reference to the then-current updated Construction Schedule approved by the County. Progress meetings shall be held weekly, or at such other time or frequency as County, in its sole and absolute discretion, deems necessary. A representative of each Subcontractor then actively performing Work, or immediately scheduled to become active, shall have a competent and knowledgeable representative present at such progress meeting to report on the condition of the Work of such Subcontractor and to receive relevant information. Meeting notes shall be taken by the County or Architect and distributed to all meeting attendees and all other affected parties.

**3.10.4 Notice Requirements.** Under no circumstances shall information contained in Contractor's daily job reports, monthly reports or job meeting minutes relieve Contractor of its obligations to comply with, serve as a substitute for, nor constitute a waiver by County of its right to insist upon, Contractor's compliance with the provisions of the Contract Documents relative to timely and complete notice to County of Changes, Delays, Claims or other matters for which written notice is required by the Contract Documents.

**3.10.5 Availability for Review.** Copies or originals of all Record Documents, daily reports, job meeting minutes and other documents required to be maintained or actually maintained by Contractor at the Site or required to be submitted to County or Architect shall be available at the Site for review by County, Architect, Inspectors of Record, County Consultants and Governmental Authorities.

### **3.11 SUBMITTALS**

**3.11.1 Not Contract Documents.** Shop Drawings, Product Data, Samples and other Submittals are not Contract Documents. Their purpose is to demonstrate for those portions of the Work for which Submittals are required the way Contractor proposes to conform the Work to the designs and other information in the Contract Documents.

**3.11.2 Coordination with Others.** Contractor shall cooperate in the coordination of Contractor's Shop Drawings, Product Data, Samples and other Submittals with related documents submitted by the Separate Contractors.

#### **3.11.3 Submission by Contractor.**

**.1 Submission.** All Shop Drawings, Product Data, Samples and other Submittals required by the Contract Documents shall be submitted to Architect for its review and approval, with a copy to County and to such of County's Consultants or Separate Contractors as County may direct in writing. Informational submittals (i.e., Submittals upon which no responsive action is expected) shall be limited to those Submittals so identified in the Contract Documents. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.

**.2 Contractor Approval.** The Contractor shall review, stamp "approved" and submit Contractor's Shop Drawings, Product Data, Samples and other Submittals to the Architect, in accordance with the latest Submittal Schedule approved by the County. The Contractor's approval and submission of Submittals constitutes a representation that the Contractor has determined or verified materials and field measurements and conditions related thereto, and that it has checked and coordinated the information contained within such Submittals with the requirements of the Contract Documents and with the Submittals for related Work. Submittals without evidence thereon of the Contractor's approval shall be returned, without further consideration, for resubmission in accordance with these requirements.

**.3 Transmittal.** All Submittals shall be accompanied by an accurately completed transmittal in the form required by County. With respect to Submittals of documents, the transmittal shall give a list of the numbers of the sheets submitted. All sheets shall be marked with the name of the Project and the name of Contractor shall be numbered consecutively and referenced to the sheets or paragraphs of the Drawings and Specifications affected. A separate transmittal form shall be used for each specific item or class of material or equipment for which a Submittal is required. Transmission of Submittals of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency dictates review of the group or package as a whole. Any Submittal not accompanied by such transmittal form, or where all applicable items on the form are not completed, may be returned for re-submittal without review.

**.4 Timing.** Submittals shall be provided within the time frame specified in the Contract Documents, in accordance with the Construction Schedule and Submittal Schedule and at a time sufficiently early to allow review of the same by the Architect without causing Delay to construction progress. Contractor will be responsible to pay, at Contractor's Own Expense, additional services fees and costs incurred by County to the Architect, Inspectors of Record and County Consultants in order to expedite review of Submittals which are not submitted in a timely fashion.

**.5 Content.** Submittals shall consist of the appropriate combination of catalog sheets, material lists, manufacturer's brochures, technical bulletins, specifications, diagrams and product samples, necessary to describe a system, product or item. Submittals shall show in detail the size, sections and dimensions of all members, the arrangement and construction of all connections, joints and other pertinent details, and all holes, straps and other fittings for attaching the Work. When required by the Architect or the Contract Documents, engineering computations shall be submitted.



**.6 Professional Certifications.** When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

**.7 Multiple Submittals.** Except where the preparation of a Submittal is dependent upon the approval of a prior Submittal, all Submittals pertaining to the same class or portion of the Work shall be submitted simultaneously.

**.8 Notation of Revisions.** Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or other Submittals, to revisions other than those requested and approved by Architect on previous Submittals.

**.9 Duplicates.** Contractor shall be responsible for delivering duplicates of Submittals to all other persons whose work or services are dependent thereon.

**3.11.4 Review of Submittals.** Review of Submittals by Architect, County or County Consultants is subject to the limitations of Paragraph 4.2.6, below. Contractor shall, notwithstanding any review or approval thereof by County, Architect or a County Consultant, be solely responsible for the content of all Submittals. Without limitation to the foregoing, deviations in Submittals from requirements of the Contract Documents shall remain the sole responsibility of Contractor unless Contractor has specifically informed Architect in writing of such deviation at the time of submission of the Submittal and Architect has given specific written approval thereof.

**3.11.5 Contract Adjustments.** Subject to Contractor's rights and obligations under Article 7, below, revisions indicated on Shop Drawings, Product Data, Samples or other Submittals shall not be considered as a basis for Contract Adjustments.

**3.11.6 Compliance with Contract.** Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or other Submittals until the respective Submittal has been returned by the Architect with an indication that it has been reviewed and that the Work addressed by the Submittal may proceed. Such Work shall be in accordance with such Submittals, unless such Submittal indicates that there are corrections to be made. If corrections are indicated to be made then the Work shall be in accordance with the re-submitted and corrected Submittal that is reviewed and returned to the Contractor by the Architect.

### **3.12 USE OF SITE**

**3.12.1 Staging Area.** Contractor will be assigned staging space on or adjacent to the Site, and all field offices, materials and equipment shall be kept within this area. Unless otherwise required by the Contract Documents, Contractor shall be responsible for restoring such areas and surrounding areas to the condition they were in prior to Contractor's commencement of the Work.

**3.12.2 Existing Improvements.** During the installation of the Work, Contractor shall ensure that Existing Improvements are adequately protected. Upon Final Completion of the Work, all Existing Improvements not required by the Contract Documents to be demolished as part of the Work that have been damaged by the actions or inactions of Contractor or its Subcontractors shall be restored to the condition they were in prior to Contractor's commencement of the Work.

**3.12.3 Operations at Site.** Contractor shall confine its activity, access and parking at the Site to areas permitted by Applicable Laws and County and shall not unreasonably encumber the Site with materials or equipment. Contractor acknowledges that it is experienced in performing construction within limited and confined areas and spaces such as those that are anticipated to exist on this Project and agrees to assume responsibility, without a Contract Adjustment, to take all special measures (including, without limitation, those related to protection, storage, staging and deliveries) as may be necessary to adapt its performance to the constraints of the Site.

**3.12.4 Coordination.** Contractor shall coordinate Contractor's operations with, and secure the approval of, County before using any portion of the Site.

**3.12.5 Unauthorized Use.** Personnel of Contractor and the Subcontractors shall not occupy, live upon or otherwise make use of the Site during any time that the Work is not being performed at the Site, except as otherwise approved by County.

**3.12.6 Site Security.** Contractor is responsible for the security of the Site and all of the Work, as well as the work of the Separate Contractors or County's own forces that occurs on the Site. Fences, barricades and other perimeter security shall be maintained in good condition and secured with locking devices. Damage to fences, barricades or other perimeter security, regardless of the cause, shall be repaired immediately at Contractor's Own Expense. Graffiti and unauthorized postings shall be removed or painted over so as to maintain a clean and neat appearance. Mobile equipment and operable machinery shall be kept locked or otherwise made inoperable whenever left unattended.

**3.12.7 Persons on Site.** Contractor shall not allow any person, other than the workers on the Project, authorized representatives of a union, or other individuals authorized by County, to come upon any portion of the Site where the Work is being performed. Only authorized personnel will be permitted on the Site. Contractor shall at all times maintain good discipline and order among its employees and the employees of the Subcontractors. Any person in the employ of Contractor or of any Subcontractors whom County may deem, in its sole and absolute discretion, incompetent, unfit, intemperate, troublesome or otherwise undesirable shall be excluded from the Site and shall not again be employed on the Site except with written approval of County and all Losses to Contractor or County associated therewith shall be borne by Contractor at Contractor's Own Expense.

**3.12.8 County Uses and Activities.** Contractor shall, prior to performing the Work at an operating or occupied County facility, become informed and take into specific account the uses by County and others of the Site and Existing Improvements, including, without limitation, business operations, public uses, employee uses, visitor uses, planned functions and ceremonies, and coordinate its planning, staging, scheduling, barricading and other performance of the Work so as to cause the minimum amount of interference or disturbance, whether before or after operating hours.

**3.12.9 Dust, Fumes, Noise.** Contractor shall take preventive measures to minimize, and eliminate wherever reasonably possible, generation of dust, fumes and noise.

**3.12.10 Confinement of Operations.** Contractor shall confine apparatus, the storage of materials and the operations of the workers to limits indicated by Contract Documents or as otherwise directed by County in writing.

**3.12.11 Prohibited Substances.** Contractor shall not permit (1) the possession or use of alcohol or controlled substances on the Site or (2) smoking in other than designated smoking areas approved by County.

**3.12.12 Survey Markers.** Contractor shall not disturb or cover any survey markers, monuments or other devices marking property boundaries or corners. If such markers are covered they shall be uncovered and if disturbed they shall be replaced by Contractor by means of the services of a licensed land surveyor. The costs of such uncovering and replacement shall be at Contractor's Own Expense.

**3.12.13 Drainage, Erosion.** Contractor is responsible for and shall make corrections to changes in patterns of surface water drainage resulting from, and related erosion control made necessary by, the performance of the Work.

**3.12.14 Trenches.** As required by California Labor Code §6705, if the Contract Price exceeds Twenty-Five Thousand Dollars (\$25,000) and involves the excavation of any trench or trenches five (5) feet or more in depth, Contractor shall, in advance of commencing excavation, submit to County a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the Shoring Systems Standards established by the Construction Safety Orders of the California Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer, employed by Contractor at Contractor's Own Expense. Nothing in this Paragraph 3.12.14 shall be deemed to allow the use of a system less effective than that required by such Construction Safety Orders. No excavation of such trench or trenches shall be commenced until such plan has been approved by County and Architect. Nothing in this Paragraph 3.12.14 shall be construed to impose any liability, including, without limitation, any tort liability, upon the County or upon any of its officers, agents, representatives or employees.

### 3.13 CUTTING AND PATCHING

Contractor shall be responsible for all cutting, fitting or patching required to complete the Work and to make its parts fit together properly both among themselves and with any Existing Improvements and the work of the Separate Contractors and of County's own forces. In all cases, cutting shall be performed under the supervision of competent mechanics skilled in the applicable trade and openings shall be cut as small as possible to prevent unnecessary damage. Contractor shall not damage or endanger a portion of the Work, Existing Improvements or fully or partially completed construction of County's own forces or of the Separate Contractors by cutting, patching, excavating or otherwise altering such construction. Contractor shall not cut or otherwise alter such Existing Improvements or construction by Separate Contractors or by County's own forces except with the written consent of such Separate Contractors or County, which consent shall not be unreasonably withheld, delayed or conditioned. When asked, Contractor shall not unreasonably withhold from the Separate Contractors or County the Contractor's consent to Separate Contractors' or County's own forces' cutting or other alteration of the Work as required to complete the work of the Separate Contractors or County's own forces.

### 3.14 UTILITIES AND SANITARY FACILITIES

**3.14.1 Contractor Responsibility.** Except as otherwise required by California Government Code §4215, Contractor shall contact all relevant utility providers and arrange for obtaining all available information, concerning location of subsurface utility lines. Prior to commencement of any digging, Contractor shall make its own investigation, including exploratory excavations, to determine the locations and type of Work which could result in damage to such utilities. In accordance with California Government Code §§4216 et seq., except in an emergency, Contractor shall contact the appropriate regional notification center at least two (2) the working days, but not more than fourteen (14) Days, prior to commencing any excavation, if the excavation will be conducted in an area which is known, or reasonably should be known, to contain sub-service installations, and shall obtain an inquiry identification number from the regional notification center. Contractor shall not assume, unless actual observed surface conditions at the Site indicate otherwise, that utilities are located in the same location as indicated on the as-built records or other information obtained by Contractor. Contractor shall conduct potholing in advance of digging in any areas where there are not apparent surface conditions at the Site indicating the actual location of underground utilities and be at all times vigilant in watching for any conditions encountered, above or below the surface of the ground, that might indicate that underground utilities are at locations other than those indicated by the as-built records or other information obtained by Contractor. Contractor shall perform its digging operations in a slow and meticulous manner so as to avoid wherever reasonably possible damaging existing underground utilities. Contractor shall, at Contractor's Own Expense, make good any Loss to County or others as a result of Contractor's failure to perform any of its obligations under this Paragraph 3.14.1. Nothing stated in this Paragraph 3.14.1 shall be interpreted as requiring Contractor to do subsurface exploration or potholing for the purpose of locating subsurface utilities at the Site prior to the Bid Closing Deadline or as precluding the Contractor from receiving a Contract Adjustment for unknown subsurface utilities constituting Differing Site Conditions that are encountered in the course of performing the Site investigation or potholing required by this Paragraph 3.14.1.

**3.14.2 County Responsibility.** If and to the extent required by California Government Code §4215, County assumes the responsibility for removal, relocation, and protection of those existing main or trunkline utility facilities located at the Site at the time of commencement of the Work that are not identified in the Contract Documents. Provided that Contractor has exercised the Standard of Care in performing the Work in accordance with the Contract Documents, Contractor shall be entitled to a Contract Adjustment for, relocating, repairing or removing any utility facilities not indicated in the Contract Documents with reasonable accuracy, including, without limitation, equipment on the Site necessarily idled thereby. Delays caused by County's or a utility owner's failure to provide for the removal or relocation of such utility facilities shall constitute a Compensable Delay. Nothing herein shall be deemed to require County to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings or meter junction boxes located on or adjacent to the Site.

**3.14.3 Temporary Utilities.** All utilities, including but not limited to electricity, water, gas and telephone, used in performance of the Work (including, without limitation, meters and temporary distribution systems from distribution points to points on Site where a utility is needed and "tap fees") shall be furnished and paid for by Contractor or, if furnished by County, shall be paid for by Contractor at Contractor's Own Expense. Upon Final Completion of the Work, Contractor shall remove all temporary distribution systems. If the Work involves an addition

to an existing facility, Contractor may, with written permission of County, granted or withheld in County's sole and absolute discretion, use County's existing utilities by making prearranged payments to County for utilities used by Contractor. When it is necessary to interrupt any existing utility service to make connections, a minimum of two (2) working days' advance notice shall be given to County. Interruptions shall be of the shortest possible duration and shall be scheduled during a time of Day that minimizes its impact on the operations of the existing facility. Any Loss to County or Contractor associated with interruption of a utility service as a result of Contractor's breach of, or failure to fully comply with, its obligations under this Paragraph shall be paid for by Contractor at Contractor's Own Expense.

**3.14.4 Sanitary Facilities.** Contractor shall provide sanitary temporary toilet facilities, for the use of all the workers, in no fewer numbers than required by Applicable Laws, plus such additional facilities as may be directed by County. Such facilities shall be maintained in a sanitary condition at all times. Use of existing or permanent toilet facilities shall not be permitted except by written consent of County.

### **3.15 CLEANING UP**

**3.15.1 Contractor Responsibility.** Contractor at all times shall keep the Site free from debris such as waste, rubbish and excess materials and equipment caused by the performance of the Work. At the end of each Day that Work is performed, Contractor shall not leave debris under, in or about the Site but shall promptly dispose of or remove same from the Site. Without limitation to the other clean up requirements of the Contract Documents, upon Final Completion, Contractor shall: (1) clean the interior and exterior of the buildings, including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections and any areas where debris has collected so surfaces are free from foreign material or discoloration; (2) clean and polish all glass, plumbing fixtures, finish hardware and similar finish surfaces and equipment; and (3) remove temporary fencing, barricades, planking, sanitary facilities and similar temporary facilities from the Site.

**3.15.2 Cleanup by County.** If Contractor fails upon 24 hours' notice by County to perform its obligation to clean up, County may arrange to do so, and the cost thereof shall be borne by Contractor at Contractor's Own Expense.

### **3.16 ACCESS TO THE WORK**

**3.16.1 County.** County, Inspectors of Record, Architect and County Consultants, and their representatives, and such other persons as authorized by County, shall at all times have access to the Work, either in preparation or in progress. Contractor shall provide safe and proper facilities for such access so that they and their representatives may perform their functions safely.

**3.16.2 Separate Contractors.** County, using its own forces or those of Separate Contractors, may, at any time during the performance of the Work, enter the Site for the purpose of performing construction or for any other purpose. Contractor shall cooperate with County, County's own forces and Separate Contractors and not interfere with other work being done by them or on their behalf.

**3.16.3 Delivery Routes.** Contractor shall arrange for delivery of material over routes designated by County.

### **3.17 INTELLECTUAL PROPERTY RIGHTS**

Contractor shall pay all royalties and license fees relating to use of Intellectual Property Rights pertaining to Work performed. Contractor shall defend suits or claims for infringement of Intellectual Property Rights and shall defend, indemnify and hold harmless the Indemnitees from Loss on account thereof in accordance with the terms of Section 3.18, below, unless the infringement is due to a particular design, process, product or product of a particular manufacturer that is required by the Contract Documents; provided, however, that if Contractor has information leading it to believe that the use of a particular design, process or product required by the Contract Documents would constitute an infringement of an Intellectual Property Right, then Contractor shall nonetheless be responsible to provide such defense, indemnification and hold harmless if such information is not promptly furnished in writing to County.

### 3.18 INDEMNIFICATION

**3.18.1 Contractor's Indemnity Obligation.** To the fullest extent permitted by Applicable Laws, Contractor agrees to indemnify, immediately defend at its own expense and hold harmless, County, Board of Supervisors, and each of their respective members, officers, employees, agents, insurers and volunteers ("Indemnitee(s)"), through legal counsel reasonably acceptable to County, from any and all Losses, whether real or alleged, regardless of whether caused in part by such Indemnitee or its agents, servants or independent contractors who are directly responsible to such Indemnitee, arising out of or relating to any of the following:

- .1 any act or omission of Contractor or a Subcontractor, of any Tier;
- .2 the activities of Contractor or a Subcontractor, of any Tier, on the Site or on other properties related to performance of the Work or the preparation for performance of the Work;
- .3 the payment or nonpayment of any Subcontractor, of any Tier, for the Work performed, except where such nonpayment is the result of a breach by County of its payment obligations under the Contract Documents;
- .4 the existence or dispersal of any Hazardous Substances or Mold on the Site as a result of the failure of Contractor or a Subcontractor, of any Tier, to comply with its obligations under the Contract Documents;
- .5 the violation by Contractor or a Subcontractor, of any Tier, of an obligation under Section 3.17, above, involving infringement of an Intellectual Property Right; or
- .6 the violation by Contractor or a Subcontractor, of any Tier, of any Applicable Law, including, without limitation, the violation of any requirement of the State of California General Permit for Storm Water Discharges Associated with Construction Activity and subsequent amendments or orders for construction activities as applicable thereto (including, without limitation, the requirements of a Storm Water Pollution Prevention Plan) or the violation of any applicable requirement of any local or regional Air Quality Management District (AQMD) (including, without limitation, a violation of any of the requirements set forth in the County MOU with AQMD dated January 6, 2004 Agenda Item 3.1 (for projects in the Coachella Valley) or AQMD Rule 403 (for projects west of the Coachella Valley));

PROVIDED, HOWEVER, that nothing contained herein shall be construed as obligating Contractor to indemnify an Indemnitee for Losses resulting from the sole negligence, active negligence or willful misconduct of such Indemnitee or its agents, servants or independent contractors who are directly responsible to such Indemnitee or from a defect in design furnished by such Indemnitee, where such sole negligence, active negligence, willful misconduct or design defect has been determined by agreement of Contractor and that Indemnitee or has been adjudged by the final and binding findings of a court or arbitrator of competent jurisdiction. In instances where the active negligence or willful misconduct of an Indemnitee or its agents, servants or independent contractors who are directly responsible to such Indemnitee or a defect in a design furnished by such an Indemnitee accounts for only a portion or percentage of the Loss involved, the obligation of Contractor will be for that portion or percentage of the Loss not due to such active negligence, willful misconduct or design defect.

**3.18.2 Indemnification of Adjacent Property Owners.** In the event Contractor enters into an agreement with the owners of any adjacent property to enter upon such property for the purpose of performing the Work or other activities incidental to the Work, Contractor shall fully indemnify, defend and hold harmless any person or entity which owns or has any interest in such adjacent property against any Loss resulting from the acts or omissions of the Contractor or its Subcontractors. The form and content of such indemnification agreement shall be approved by County prior to commencement of any Work on or around such property.

**3.18.3 Insurance and Employment Benefits.** The indemnification, defense and hold harmless obligations of Contractor under this Section 3.18, as well as any such obligations stated elsewhere in the Contract Documents: (1) shall not be limited by the amounts or types of insurance (or the deductibles or self-insured retention amounts of such insurance) which any Indemnitee, Contractor or any Subcontractor carries or is required to carry under the terms of the Contract Documents; (2) is independent of and in addition to the Indemnitees' rights under the insurance to be provided by an Indemnitee, Contractor or any Subcontractor; and (3) shall not be limited, in the event of a claim

against an Indemnitee by an employee of Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, by a limitation on amount or type of damages, compensation or benefits payable by or for Contractor or Subcontractor under any worker's compensation act, disability benefit act or other employee benefit program.

**3.18.4 Subcontractor Indemnity Agreements.** Contractor agrees to obtain or cause to be obtained executed defense and indemnity agreements with provisions identical to those set forth in this Section 3.18 from each and every Subcontractor, of every Tier.

**3.18.5 Implied Indemnity Rights.** Notwithstanding anything stated in this Section 3.18 or elsewhere in the Contract Documents to the contrary, an Indemnitee's right to seek equitable indemnity and contribution from Contractor is in no way diminished, limited or precluded by any agreement by Contractor to provide express contractual indemnity to such Indemnitee. Contractor's obligations under this Section 3.18 shall be deemed to completely eliminate and preclude any right by Contractor to seek contractual or equitable indemnity or contribution from any Indemnitee for any Loss covered by the Contractor's express indemnification obligations under this Section 3.18.

**3.18.6 Obligation to Defend.** The Contractor's obligation to defend under this Section 3.18 includes, without limitation, the obligation to immediately reimburse an Indemnitee for any attorney's fees, court costs (statutory and non-statutory), arbitration and mediation expenses, professional, expert and consultant fees, investigative costs, postage costs, document copying costs, telecopy costs and any and all other costs and expenses associated with defense of such Indemnitee as and when incurred by any Indemnitee in defense of a claim by any third person or entity as a result of Contractor's failure or refusal to comply with its immediate defense obligation to such Indemnitee. Nothing stated in this Section 3.18 or elsewhere in the Contract Documents shall be interpreted as providing or implying that the obligation of Contractor to defend an Indemnitee against an alleged Loss that is within the scope of the Contractor's indemnification obligation under this Section 3.18 or under any other provision of the Contract Documents is to any extent released, excused, limited or relieved by a finding, determination, award or judgment by a court or arbitrator that the alleged Loss was due to circumstances not within the scope of such indemnification obligation.

**3.18.7 Enforcement.** The Indemnitees shall be entitled to recover their attorneys' fees, costs and expert and consultant costs in pursuing or enforcing a right to defense and/or indemnification under this Section 3.18.

### **3.19 LABOR, WAGES, PAYROLL RECORDS**

**3.19.1 Public Work.** This Work is a "public work" as defined in Labor Code §1720 and must be performed in accordance with the requirements of Labor Code §§1720 to 1850 and Title 8 California Code of Regulations §§16000 to 17270, which govern the payment of prevailing wage rates on public works projects.

**3.19.2 Prevailing Wage Rates.** Pursuant to the provisions of Article 2 (commencing at §1770), Chapter 1, Part 7, Division 2 of the Labor Code of California, the Board of Supervisors has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime Work in the locality in which the Work is to be performed for each craft, classification or type of worker needed to execute the Work from the Director of the Department of Industrial Relations. These rates are on file with County and copies will be made available to any interested party on request. Contractor shall post a copy of such wage rates at the Site. The adoption of such wage rates is not a representation that labor can be obtained at these rates. It is the responsibility of Contractor to inform itself as to the local labor conditions. Holiday and overtime Work, when permitted by Applicable Laws, shall be paid for at a rate of at least one and one-half times the adopted rate of per diem wages, unless otherwise specified. Holidays shall be defined in the collective bargaining agreement applicable to each particular craft, classification or type of worker employed.

**3.19.3 Unclassified Workers.** Any worker employed to perform the Work not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director of the Department of Industrial Relations shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to the Work to be performed by him/her, and such minimum wage rate shall be retroactive to time of initial employment of such person on the Project in such classification.

**3.19.4 Per Diem Wages.** Contractor shall pay or shall cause to be paid each worker engaged in the Work not less than the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any of the Subcontractors and such workers. Pursuant to California Labor Code §1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time and subsistence pay.

**3.19.5 Applicable Laws.** Contractor represents and warrants that the Contractor's Bid and the Contract Price includes funds sufficient to allow Contractor to comply with all Applicable Laws governing the labor or services to be provided. Contractor shall defend and indemnify the Indemnitees in accordance with Section 3.18, above, for any violation of any Applicable Law, including but not limited to California Labor Code §2810, and agrees to pay all assessments, including wages and penalties, made against County in relation to such violations.

**3.19.6 Posting at Site.** Contractor shall post at appropriate conspicuous points on the Site the prevailing wage rates of the Department of Industrial Relations in accordance with 8 California Code of Regulations 16100(b).

**3.19.7 Worker Hours.** As provided in Article 3 (commencing at §1810), Chapter 1, Part 7, Division 2 of the California Labor Code, eight (8) hours of labor shall constitute a legal day's work. The standard work day of any worker employed at any time by Contractor or any of the Subcontractors performing the Work, or any part of the Work, shall, except as hereinafter provided, be limited and restricted by Contractor to eight (8) hours per day, between the hours of 6:00 A.M. and 6:00 P.M. (unless otherwise required by Applicable Laws), plus one-half hour unpaid lunch approximately midway through the shift, provided that Contractor or any of the Subcontractors may establish a four day/ten-hour schedule consistent with Applicable Laws pertaining to payment of prevailing wages and the provisions any applicable collective bargaining agreement. A regular-work week shall constitute forty (40) hours during any one week. Notwithstanding the provisions hereinabove set forth, the parties hereto may agree to changes in the work day or the work week as permitted by Applicable Laws, and Contractor and all Subcontractors must pay the appropriate prevailing wage rate for those hours and days worked.

**3.19.8 Overtime.** Overtime work performed by employees of Contractor or any of the Subcontractors shall be compensated according to the applicable general prevailing rate established by the Department of Industrial Relations for holiday and overtime work for each craft, classification or type of worker in the locality in which the Work is to be performed.

**3.19.9 Payroll Records.** It shall be the sole responsibility of Contractor to ensure compliance with the provisions of Applicable Laws and the Contract Documents relating to maintenance and submission of payroll records. Pursuant to the provisions of California Labor Code §1776, Contractor shall keep, and shall cause each Subcontractor performing any portion of the Work to keep, accurate certified payroll records, showing the name, address, social security number, worker classification and straight-time and overtime hours worked each Day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by Contractor in connection with the Work. Certified payroll records must be in the payroll reporting format prescribed by the Division of Labor Standards Enforcement. If there is no work by Contractor or a Subcontractor in a given week, Contractor must keep and submit a certified "Nonperformance" payroll record, indicating "no work" for that week. Contractor shall submit all certified payroll records to County in complete, unredacted form with an original signature on the Statement of Compliance, along with, and as a condition to, its Applications for Payment. Additionally, payroll records shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

**.1** a certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his or her authorized representative on request;

**.2** a certified copy of all such payroll records shall be made available for inspection or furnished upon request to County, the Division of Labor Standards Enforcement and/or the Division of Apprenticeship Standards of the Department of Industrial Relations or such other person or entity as designated by County;

**.3** a certified copy of all such payroll records shall be made available upon request by the public for inspection or the copying thereof, provided that (1) such request is made by the public through either County, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement of the Department of Industrial Relations, (2) such requested payroll records have not previously been provided pursuant to Subparagraph 3.19.9.2,

above, then the requesting individual or entity shall, prior to being provided the records, reimburse the costs of preparation by Contractor, the Subcontractors and the entity through which the request was made, and (3) the public shall not be given access to records at the principal office of Contractor;

.4 Contractor and each Subcontractor shall within ten (10) Days after receipt of a written request file a certified copy of such payroll records with the person or entity that requested the records;

.5 Contractor shall provide, and shall cause each Subcontractor to provide, payroll records as defined in Title 8 California Code of Regulations §16000 to County within ten (10) Days after receipt of written request, at no cost to County;

.6 any copy of such payroll records made available for inspection by, and copies furnished to, the public shall be redacted in a manner so as to prevent disclosure of an individual's name, address, and social security number, except that any copy made available for inspection by, and copies furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (29 U.S.C. Section 175a) shall be marked or redacted only to prevent disclosure of an individual's name and social security number, and in either event, the name and address of Contractor or the Subcontractor performing the Work shall not be so obliterated; and

.7 any copy made available to an agency included in the Joint Enforcement Strike Force on the Underground Economy established pursuant to Section 329 of the Unemployment Insurance Code and other law enforcement agencies investigating violations of law shall, upon request, be provided nonredacted copies of certified payroll records;

.8 Contractor shall inform County concurrently with the submission of its initial Application for Payment, of the location of such payroll records, including the street address, city and county, and thereafter shall, within five (5) working days, provide a notice of any change of location and address of such payroll records.

**3.19.10 Apprentices.** Contractor acknowledges that, even if performance of the Work involves a dollar amount greater than or a number of working days greater than that specified in California Labor Code §1777.5, it shall be the sole responsibility of Contractor, for all apprentice occupations, to ensure compliance with California Labor Code §1777.5, including, without limitation, the following provisions:

.1 Apprentices of any crafts or trades may be employed and, when required by California Labor Code §1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the California Labor Code.

.2 Every such apprentice shall be paid the prevailing rate of per diem wages for apprentices in the trade to which he or she is registered and shall be employed only at the work of the craft or trade to which he or she is registered.

.3 Only apprentices, as defined in California Labor Code §3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4 (commencing at §3070), Division 3 of the California Labor Code, are eligible to be employed at the apprentice wage rate on Public Works. The employment and training of each apprentice shall be in accordance with either: (1) the apprenticeship standards and apprentice agreements under which he or she is training, or (2) the rules and regulations of the California Apprenticeship Council.

.4 Contractor and any of the Subcontractors employing workers in any apprenticeable craft or trade in performing any of the Work shall apply to the applicable joint apprenticeship committee for a certificate approving Contractor or the Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

.5 Prior to commencing the Work, Contractor shall submit contract award information to an applicable apprenticeship program that can supply apprentices to the Site of the Work. The information submitted shall include an estimate of journeyman hours to be performed under the Construction Contract, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. A copy of this information shall also be submitted to County if requested by County.



.6 The ratio of the Work performed by apprentices to journeymen employed in a particular craft or trade on the Work may be no higher than the ratio stipulated in the apprenticeship standards under which the apprenticeship program operates, where Contractor or the Subcontractor agrees to be bound by those standards, but, except as otherwise provided in this Paragraph, in no case shall the ratio be less than one (1) hour of apprentice work for every five (5) hours of journeyman work. Apprentices may comprise up to thirty percent (30%) of the work force of each particular craft, classification or type of worker employed, unless the applicable joint apprenticeship committee establishes a lower percentage. To the extent possible, fifty percent (50%) of the apprentice work force shall consist of first-year apprentices.

.7 The interpretation and enforcement of California Labor Code §1777.5 shall be in accordance with the rules and procedures of the California Apprenticeship Council.

.8 Contractor and all the Subcontractors shall comply with California Labor Code §1777.6, which forbids certain discriminatory practices in the employment of apprentices.

.9 Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work, paying special attention to California Labor Code §§1777.5, 1777.6, and 1777.7 and Title 8, California Code of Regulations, §§200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California.

**3.19.11 Pre-Construction Meetings, Interviews.** Contractor shall attend any pre-construction meetings held by County to discuss labor requirements. Contractor and the Subcontractors shall allow County, County Consultants and the Department of Industrial Relations, and designated representatives of each, to conduct, at their discretion, interviews of workers at the Site during working hours.

#### **3.19.12 Penalties for Violations.**

.1 **Prevailing Wage Violations.** Pursuant to California Labor Code §1775, Contractor and any of the Subcontractors shall, as a penalty, pay an amount not to exceed Two Hundred Dollars (\$200) for each Day, or portion thereof, for each worker paid less than the prevailing rates, determined by the Director of the Department of Industrial Relations, for the trade or craft in which such worker is employed by Contractor or, except as provided by said §1775, by any of the Subcontractors, of any Tier, for performance of the Work. The amount of this penalty shall be determined by the Labor Commissioner and shall be based on consideration of both: (1) whether the failure of Contractor or the Subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, whether the error was promptly and voluntarily corrected upon being brought to the attention of Contractor or the Subcontractor; and (2) whether Contractor or the Subcontractor has a prior record of failing to meet its prevailing wage obligations. The difference between the amount owed to each worker pursuant to such prevailing wage rates, and the amount paid to each worker for each Day or portion thereof for which each worker was paid less than the prevailing wage rate, shall be paid to each worker by Contractor.

.2 **Working Hour Violations.** Pursuant to Labor Code §1813, Contractor shall pay a penalty of Twenty-Five Dollars (\$25) per worker employed in the performance of the Work by Contractor or by any of the Subcontractors for each Day during which such worker is required or permitted to work more than eight (8) hours in any Day and forty (40) hours in any one calendar week in violation of the provisions of Article 3 (commencing at §1810), Chapter 1, Part 7, Division 2 of the California Labor Code.

.3 **Payroll Record Violations.** Pursuant to California Labor Code §1776, Contractor shall in the event of a failure to comply within ten (10) Days with any written notice requesting the records enumerated in subdivision (a) of said §1776, pay a penalty of One Hundred Dollars (\$100) for each Day, or portion thereof, for each worker, until Contractor has strictly complied with such request. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

.4 **Apprenticeship Violations.** Pursuant to California Labor Code §1777.7, if Contractor or the Subcontractor is determined by the Chief of the Division of Apprenticeship Standards (the "Chief") to have knowingly committed a first-time violation of California Labor Code §1777.5, Contractor or the Subcontractor shall pay, as a civil penalty, an amount not exceeding One Hundred Dollars (\$100) for each full Day of noncompliance, provided that the

amount of this penalty may be reduced by the Chief if the penalty would be disproportionate to the severity of the violation. In lieu of this penalty, the Chief may, for a first-time violation and with the concurrence of the joint apprenticeship committee, order Contractor or the Subcontractor to provide apprentice employment equivalent to the work hours that would have been provided for apprentices during the period of noncompliance. If such violation by Contractor or the Subcontractor is a second or subsequent violation committed within a three (3) year period from a previous violation of §1777.5, Contractor or the Subcontractor shall pay, as a civil penalty, to County the sum of not more than Three Hundred Dollars (\$300) for each full Day of noncompliance. County shall withhold the amount of the civil penalty from contract progress payments then due or to become due. In addition, if Contractor or the Subcontractor is determined to have knowingly committed a serious violation of any provision of §1777.5, the Chief may deny to Contractor or the Subcontractor, and to its responsible officers, the right to bid on or be awarded a contract to perform work as a subcontractor on any subsequent project for County for a period of up to one (1) year for the first violation and for a period of up to three (3) years for a second or subsequent violation.

**3.19.13 Subcontractor Provisions.** Contractor shall include, and shall require the Subcontractors to include, contractual provisions in all contracts they enter into for the performance of the Work requiring compliance with the provisions of this Section 3.19 at no additional cost.

**3.19.14 Condition of Payment.** Compliance by Contractor with the requirements of this Section 3.19 and each of its Paragraphs shall be a condition to Contractor's right to payment under its Applications for Payment. Without limitation to the foregoing, payments to Contractor shall not be made when payroll records are delinquent or inadequate.

### **3.20 LABOR CODE §2810**

**3.20.1 Application.** The provisions of this Section 3.20 apply only if the Contractor has not executed a collective bargaining agreement covering the workers who will be employed to perform the Work.

**3.20.2 Declaration by Contractor.** If a Declaration of Sufficiency of Funds has not been submitted by Contractor as a Post-Award Submittal, then it must be submitted prior to Award. In executing the Construction Contract, Contractor warrants and represents that all of the statements contained in its Declaration of Sufficiency of Funds remain true and correct as of the date of execution of the Construction Contract and may be relied upon by County in determining whether there appears to be sufficient funds in the Contractor's Bid to allow the Contractor to comply with all Applicable Laws governing the labor or services to be provided for the performance of the Work. The truth and accuracy of the statements contained in said Declaration and in this Paragraph 3.20.2 constitute a material part of the Contractor's consideration for, and a material inducement to the County's entering into, the Construction Contract.

**3.20.3 Continuing Duty.** To the extent that any of the information provided in the Declaration of Sufficiency of Funds submitted by Contractor relating to numbers of workers or independent contractors that will be employed or utilized for performance of the Work was or is based upon a best estimate, rather than actual figures or information, then the Contractor assumes the continuing duty to the County to ascertain the actual figures and information requested in the Declaration of Sufficiency of Funds and to provide such actual figures and information to the County in the form of a revised and updated Declaration of Sufficiency of Funds once the actual figures and information become known.

### **3.21 URBAN RUNOFF AND STORM WATER COMPLIANCE**

**3.21.1 Contractor's Responsibility.** If and to the extent storm water permitting, control, mitigation or discharge control is required by Applicable Laws, the Contractor shall: (1) prior to starting any Work at the Site, sign and implement the Storm Water Management Plans or Storm Water Pollution Prevention Plans as previously prepared by the County's Consultant for civil engineering or by others; (2) take all necessary steps to monitor, report, enforce and otherwise implement and comply with the requirements of the Storm Water Permit, Storm Water Management Plans and Storm Water Pollution Prevention Plans and all Applicable Laws pertaining to the elimination or mitigation of storm water pollutant discharge to separate storm sewer systems or other watercourses, including without limitation, applicable requirements of the State Water Resources Control Board, Santa Ana, San Diego, and/or Colorado Region Water Quality Control Boards and municipal storm water management programs; (3) adhere to and implement the Special Provisions for Urban Runoff and Water Pollution Control set forth in the Specifications;

and (4) ensure that the Work is constructed in conformance with those post-construction best management practices (BMPs) identified within the project-specific Water Quality Management Plan (WQMP).

3.21.2 Inspections, Reports. Contractor shall immediately notify the person identified to Contractor as the County's "project manager" for the Project of all inspections by Government Authorities (including, but not limited to, any regional board staff) and, if practicable, arrange for participation by such Governmental Authorities in any other pertinent inspections conducted at the Site. Contractor shall provide to County copies of all reports and monitoring information related to the matters covered by this Section 3.21.

3.21.3 Violations. The Contractor recognizes and understands that failure to comply with the requirements of any applicable storm water-related permit issued by the State of California of the United States pursuant to the Clean Water Act (Title 33 U.S.C. §§ 1251 et seq) and/or the Porter Cologne Water Quality Control Act (California Water Code §§13000 et seq.) is a violation of Applicable Laws. Contractor shall be responsible for all Losses and for any liability (including, without limitation, fines, penalties and other administrative liabilities and costs) imposed by Applicable Laws as a result of the Contractor's failure to comply with Applicable Laws, including, without limitation, the requirements of this Section 3.21.

3.21.4 **Condition of Payment.** Compliance by the Contractor with the requirements of this Section 3.21 shall be a condition to the Contractor's right to payment under its Applications for Payment.

3.21.5 **Costs of Compliance.** The Contractor represents and warrants that it has included in its Bid all costs of compliance with the requirements of this Section 3.21.

### 3.22 **SOLID WASTE MANAGEMENT**

Contractor shall comply with all provisions of Applicable Laws (including, without limitation, the requirements of the California Public Resources Code, rules and regulations of the California Integrated Waste Management Board and provisions of any Site-specific plans adopted by County) that are applicable to the activities of contractors performing construction or related activities on the Site. Compliance by Contractor with the requirements of this Section 3.22 shall be a condition to Contractor's right to payment under its Applications for Payment.

### 3.23 **CEQA COMPLIANCE**

No Work that is subject to California Environmental Quality Act (CEQA) shall proceed by Contractor until Contract Documents satisfying the CEQA process are reviewed and approved by the County. Contractor shall comply with all applicable CEQA requirements. If there is a federal nexus (e.g. a source of federal funding) to the Project, compliance by Contractor with the National Environmental Policy Act (NEPA) will be required in addition to and in conjunction with compliance with requirements of CEQA. The Contractor shall comply with the conditions identified on the Plans and Specifications for compliance with the California Environmental Quality Act, including, without limitation, all requirements pertaining to Mitigation, Monitoring, and Reporting Program (MMRP).

### 3.24 **AQMD COMPLIANCE**

Contractor is responsible for full and complete compliance with, as applicable: (1) AQMD Rule 403.1, County Ordinance 742, the County MOU with AQMD dated January 6, 2004 Agenda Item 3.1 (for projects in the Coachella Valley); or (2) AQMD Rule 403 (for projects west of the Coachella Valley). Any fines imposed by AQMD on the County, as well as any other Loss to County, as a result of non-compliance by Contractor with the applicable provisions of the foregoing requirements are the responsibility of Contractor and upon request by County will be paid to County by Contractor or may be withheld by County from amounts due to Contractor under its Applications for Payment.

**ARTICLE 4  
CONSTRUCTION ADMINISTRATION**

**4.1 ARCHITECT**

**4.1.1 Scope of Authority.** The Architect shall have the authority to act on behalf of County only as expressly provided in the Contract Documents and subject to such limitations on authority as set forth in Paragraph 4.1.2, below. As clarification of the foregoing, if the Contract Documents provide that the Architect has the right to approve of, consent to or direct that Contractor take or forbear from taking an action, such authority shall be limited to issuing such approval, consent or direction and shall not include, or be interpreted to include, authority to bind County with respect to any of the matters set forth in Paragraph 4.1.2, below. If Contractor's compliance with such approval, consent or direction of the Architect would involve or require authorization by County within the scope of the matters set forth in Paragraph 4.1.2, below, Contractor has the obligation, in addition to complying with the Architect's approval, consent or direction, to take steps in accordance with the Contract Documents to obtain such authorization of County as may be required and failing to do so shall not have any right to recourse or recovery from County on account of Contractor's action taken or Work performed in response to such approval, consent or direction by Architect.

**4.1.2 Limitations on Authority.** Without limitation to the other limitations on the Architect's authority expressed or implied under Paragraph 4.1.1, above, and notwithstanding anything else set forth in the Contract Documents to the contrary, Architect does not have authority to: (1) obligate or commit County to any payment of money; (2) obligate County to any adjustment to the Contract Price or Contract Time; (3) relieve Contractor of any of its obligations under the Contract Documents; (4) approve or order any Work involving Delay or Extra Work; or (5) perform any act, make any decision or give any direction or approval that is described in these General Conditions as an act, decision, direction or approval that is to be performed, made or given by any person or entity other than Architect.

**4.1.3 Work Stoppage.** Architect's authority includes, without limitation, the authority to stop the Work whenever such stoppage may be necessary, in Architect's opinion, for the proper execution of the Work. Any Work that is stopped or disapproved by order of Architect shall be resumed if and when County so directs in writing, with or without the concurrence of the Architect.

**4.1.4 Replacement.** County may, in its sole discretion, substitute another person or entity, or add persons or entities, to perform the functions of Architect or to exercise some or all of the authority of Architect provided for in the Contract Documents.

**4.1.5 County Rights.** All rights and authority conferred upon Architect under the Contract Documents constitute rights that County may, in its sole and absolute discretion, exercise in writing on its own behalf, irrespective of whether the County has ordered the removal, replacement or a change in the authority of the Architect.

**4.2 ADMINISTRATION OF THE CONSTRUCTION CONTRACT**

**4.2.1 Observations of the Work.** Architect will visit the Site as appropriate to the stage of the Work to observe the Work in progress. Observations shall be for the purpose of ascertaining the progress of the Work and that the character, scope, quality and detail of construction (including workmanship and materials) comply with the Contract Documents, the Architect's directives, approved Submittals and clarifications issued by Architect. Observations shall be separate from any inspections which may be provided by others.

**4.2.2 Means, Methods.** Construction means, methods, techniques, sequences, procedures and safety precautions and programs in connection with the Work are solely the responsibility of Contractor. Neither County nor Architect: (1) has control over or charge of, nor are they responsible for, Contractors or any Subcontractor's construction means, methods, techniques, sequences, procedures, safety precautions or programs in connection with the Work, all of which are, as between Contractor and County, solely Contractor's responsibility; (2) is responsible for Contractor's failure to carry out the Work in accordance with the Contract Documents; or (3) has control over, charge of, or responsibility for acts or omissions of Contractor, the Subcontractors or their agents or employees, or of any other persons performing portions of the Work.

**4.2.3 Communications by Contractor.** County shall be provided by Contractor with copies of all communications from Contractor or the Subcontractors to Separate Contractors or the Architect. Contractor shall not rely on oral or other non-written communications.

**4.2.4 Review of Applications for Payment.** If requested by County, Architect will review and certify all Applications for Payment by Contractor, including Applications for Payment requesting Progress Payments and Final Payment. In such cases, if the Architect and County do not concur in respect to the amount to be paid to Contractor, County's determination of the amount due will prevail.

**4.2.5 Rejection of the Work.** Architect will have authority to reject Work that does not conform to the Contract Documents and to require additional inspection or testing, in accordance with Article 10, below, whether or not such Work is fabricated, installed or completed. Whenever Architect considers it necessary or advisable for implementation of the intent of the Contract Documents, Architect will have authority to require additional inspection or testing of the Work in accordance with Article 10, below, whether or not such Work is fabricated, installed or completed. Neither Architect's authority to act under this Paragraph 4.2.5 nor a decision made in good faith either to exercise or not to exercise such authority, shall give rise to a duty or responsibility of Architect to Contractor, the Subcontractors, their agents or employees, or other persons performing any of the Work. County shall have the right, notwithstanding a recommendation by the Architect pursuant to this Paragraph 4.2.5 to reject a portion of the Work, to elect to accept the Work rejected by Architect and to direct in writing the manner in which the Work is to be performed and Contractor shall comply therewith.

**4.2.6 Review of Submittals.** Architect and such other County Consultants as Architect or County determines appropriate will review, approve or take other appropriate action upon the Contractor's Submittals. Such review, approval and other action taken in regard to a Submittal is for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents and is not conducted for the purpose of determining the technical accuracy and completeness of the Submittal, checking details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the sole responsibility of Contractor. Actions by Architect and County Consultants in connection with review of a Submittal by Contractor will be taken with such promptness as to cause no unreasonable Delay in the Work of Contractor or in the activities of the Separate Contractors or County, while allowing sufficient time in their judgments to permit adequate review. Whether or not County has identified a particular Submittal for review by Architect or a County Consultant, Contractor shall in all cases submit Submittals sufficiently in advance to allow time to permit adequate review by Architect and other County Consultants. Neither Architect's nor any County Consultant's review of a Submittal shall: (1) relieve Contractor of its obligations under Section 3.11, above; (2) constitute approval of safety precautions or, unless otherwise specifically stated in writing by the Architect or County Consultant at the time such Submittal is returned to Contractor; (3) be construed as an approval of any construction means, methods, techniques, sequences or procedures; and (4) if it involves review or approval of a specific item, be construed as indicating approval of an assembly of which such item is a component.

**4.2.7 Changes.** After consultation with the Architect, County will prepare the Change Orders, Unilateral Change Orders and Construction Change Directives for execution and take appropriate action thereon in accordance with Article 7, below.

### **4.3 CLAIMS**

**4.3.1 Submission of Claims.** All Claims by Contractor shall be submitted in accordance with the procedures set forth in this Section 4.3.

#### **4.3.2 Arising of Claim.**

**.1 Changes.** A Claim by Contractor involving a Contract Adjustment due to a Compensable Change or Deleted Work arises upon issuance of a decision denying, in whole or in part, Contractor's Change Order Request. Such Claim shall be prepared and submitted in accordance with the requirements of this Section 4.3, including, without limitation, Paragraphs 4.3.3 through 4.3.5, below.

**.2 Other Claims.** Claims by Contractor other than those described in Subparagraph 4.3.2.1, above, arise at the time that County receives written notice by Contractor of Contractor's intent to file the Claim. Such

notice of intent shall be given no later than five (5) Days after the Discovery Date relative to such circumstances (even if Contractor has not yet experienced a Loss or Delay due to such circumstances) and shall state the event or condition giving rise to the Claim and its probable effect, if any, upon the Contract Price and Contract Time. **FAILURE BY CONTRACTOR TO SUBMIT A NOTICE OF INTENT TO FILE CLAIM IN ACCORDANCE WITH THIS SUBPARAGRAPH 4.3.2.2 SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO FURTHER RECOURSE OR RECOVERY UPON SUCH CLAIM.**

**4.3.3 Content of Claims.** A Claim must include the following:

- .1 a statement that it is a Claim and a request for a decision on the Claim;
- .2 a detailed description of the act, error, omission, unforeseen condition, event or other circumstance giving rise to the Claim;
- .3 supporting documentation as follows: (1) if the Claim involves a Contract Adjustment due to Compensable Change or Deleted Work, documentation demonstrating that a complete Notice of Change and Change Order Request were timely and properly submitted as required by Article 7, below; (2) if the Claim involves an adjustment to the Contract Time, documentation demonstrating that a complete Notice of Delay and Request for Extension were timely and properly submitted as required by Article 7 and Article 8, below; and (3) if the Claim does not involve a Contract Adjustment on the basis of Compensable Change or Deleted Work, documentation demonstrating that a notice of intent to file the Claim was timely and properly submitted as required by Subparagraph 4.3.2.2, above;
- .4 a detailed justification for any remedy or relief sought by the Claim, including, without limitation, all of the following: (1) a detailed cost breakdown in the form required for submittal of Change Order Requests, which complies with the prohibition on "total cost" calculations set forth in Paragraph 7.7.15, below; and (2) job cost records substantiating the actual costs that have been incurred; and
- .5 a written certification, signed by a responsible managing officer or principal of Contractor's organization who has the authority to sign contracts on behalf of Contractor and who has personally investigated the matters alleged in the Claim, in the following form:

"I hereby certify under penalty of perjury that I am a managing officer or principal of [text] (Contractor's name) and that I have reviewed the Claim presented herewith on Contractor's behalf and/or on behalf of [text] (Subcontractor's(s) name(s)) and that the following statements are, to the best of my knowledge after diligent inquiry into the circumstances of such Claim, true and correct:

(i) the facts alleged in or that form the basis for the Claim are true and accurate;

(ii) I do not know of any facts or circumstances, not alleged in the Claim, that by reason of their not being alleged render any fact or statement alleged in the Claim materially misleading;

(iii) I have, with respect to any request for money or damages alleged in or that forms the basis for the Claim, reviewed the job cost records (including those maintained by Contractor and by any Subcontractor, of any Tier, that is asserting all or any portion of the Claim) and confirmed with reasonable certainty that the losses or damages alleged to have been suffered by Contractor and/or such Subcontractor were in fact suffered in the amounts and for the reasons alleged in the Claim;

(iv) I have, with respect to any request for extension of time or claim of delay, disruption, hindrance or interference alleged in or that forms the basis for the Claim, reviewed the job schedules (including those maintained by Contractor and by any Subcontractor, of any Tier, that is asserting all or any portion of the Claim) and confirmed that the delays or disruption alleged to have been suffered by Contractor and/or such Subcontractor were in fact experienced for the durations, in the manner, and with the consequent effects on the time and/or sequence of performance of the Work, as alleged in the Claim; and,

(v) Contractor has not received payment from County for, nor has Contractor previously released County from, any portion of the Claim.

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date: \_\_\_\_\_

4.3.4 **Noncompliance.** Failure by Contractor to comply with Paragraph 4.3.3, above, shall give County the right, without obligation, to deny the Claim or return the Claim without any response.

4.3.5 **Submission of Claims.**

.1 **Time for Filing.** All Claims and supporting documentation and certifications required to be submitted by Contractor must be submitted to the County within thirty (30) Days after the Claim arises (as "arises" is defined in Paragraph 4.3.2, above). No Claims by Contractor are permitted after Final Payment.

.2 **Condition Precedent.** Contractor's strict compliance with the requirements of this Section 4.3 as to a Claim shall be considered a condition precedent to Contractor's right to initiate or seek determination of its rights in any legal proceedings with respect to such Claim.

4.3.6 **Response to Claims by Contractor.**

.1 **Claims under \$50,000.** Claims by Contractor that are less than Fifty Thousand Dollars (\$50,000) shall be responded to by County by issuance of a Good Faith Determination of the Claim in writing within forty-five (45) Days of receipt of the Claim, unless County requests additional information or documentation of the Claim within thirty (30) Days of receipt of the Claim, in which case County shall respond to the Claim after receipt of the further information or documentation by issuing its Good Faith Determination of the Claim within the longer of either (1) fifteen (15) Days, or (2) the period of time taken by Contractor in producing the additional information or documentation.

.2 **Claims over \$50,000.** Claims by Contractor that are over Fifty Thousand Dollars (\$50,000) shall be responded to by County by issuance of a Good Faith Determination of the Claim in writing within sixty (60) Days of receipt of the Claim, unless County requests additional information or documentation of the Claim within thirty (30) Days of receipt of the Claim, in which case County shall respond to the Claim after receipt of the further information or documentation by issuing its Good Faith Determination within the longer of either (1) thirty (30) Days, or (2) the period of time taken by Contractor in producing the additional information or documentation.

4.3.7 **Meet and Confer.** If Contractor disputes County's Good Faith Determination of a Claim by Contractor, or if County fails to respond within the prescribed time set forth in Paragraph 4.3.6, above, Contractor may

so notify County, in writing, within fifteen (15) Days of Contractor's receipt of County's Good Faith Determination, or within fifteen (15) Days of County's response due date in the event of a failure to respond, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon demand, County shall schedule a meet and confer conference within thirty (30) Days of such demand for discussion of settlement of the dispute. If either County or Contractor determines that the meet and confer process has not been successful, it shall have the right to declare the meet and confer process closed by written notice to the other party so stating.

#### **4.3.8 Claims Based on Differing Site Conditions.**

**.1 Contractor Responsibility.** Save and except as hereinafter provided in this Paragraph 4.3.8 for Contract Adjustments due to Differing Site Conditions, Contractor agrees at Contractor's Own Expense to assume the risk and costs of Extra Work and Delay due to concealed or unknown conditions, surface or subsurface, at the Site or in Existing Improvements.

**.2 Differing Site Conditions.** Differing Site Conditions are those conditions at the Site or in Existing Improvements and not otherwise reasonably ascertainable by Contractor in the performance of its obligations under the Contract Documents (including, without limitation, conditions not reasonably ascertainable by Contractor from documents or information described in Paragraph 3.2.1, above, that were provided or available to Contractor for its review prior to the Bid Closing Deadline) that constitute: (1) hazardous materials that constitute hazardous waste, as defined in California Health and Safety Code §25117, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of Applicable Laws; (2) subsurface or concealed conditions at the Site or concealed conditions in Existing Improvements which differ materially from those indicated by the Contract Documents or other information that was either reviewed by Contractor or that Contractor was given the opportunity to review prior to the Bid Closing Deadline; or (3) unknown physical conditions at the Site or concealed conditions in Existing Improvements of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.

**.3 Notice of Change.** If Contractor encounters conditions it believes constitute Differing Site Conditions, then Contractor shall, before such conditions are disturbed, give Notice of Change as required by Paragraph 7.6.1, below, stating, without limitation, a detailed description and precise location of the conditions encountered.

**.4 Investigation by County.** Upon receipt of notice from Contractor as required by Subparagraph 4.3.8.3, above, County shall promptly investigate Contractor's report of Differing Site Conditions.

**.5 Change Order Request.** If Contractor intends to seek a Contract Adjustment based upon Differing Site Conditions, it shall submit a complete and timely Change Order Request in accordance with Paragraph 7.6.2, below, setting forth its request for a Contract Adjustment.

**.6 Contract Adjustments.** If, following Contractor's compliance with its obligations under this Paragraph 4.3.8, County finds that Differing Site Conditions exist, then, unless the Contractor's right to Contract Adjustment has been waived as pursuant to Paragraph 3.2.3, above, a Contract Adjustment shall be made for the resulting Compensable Change and Compensable Delay, in such amount and duration as County determines by issuance of a Good Faith Determination are reasonable and permitted by these General Conditions.

#### **.7 WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO STRICTLY COMPLY WITH THE REQUIREMENTS OF THIS PARAGRAPH 4.3.8 PERTAINING TO CONTRACT ADJUSTMENT BASED ON A CLAIM FOR DIFFERING SITE CONDITIONS SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO FURTHER RECOURSE OR RECOVERY UPON SUCH CLAIM.**

**.8 Final Completion.** No claim by Contractor for additional compensation for Differing Site Conditions shall be allowed if asserted after Final Payment.

**4.3.9 Continuous Work.** Contractor shall, notwithstanding the existence of a Claim by Contractor that is disputed by County, maintain continuous performance, without interruption, suspension or slowing, of the Work and its



other obligations (1) pending issuance by County of a Good Faith Determination of the Claim and (2) thereafter in compliance with the terms of such Good Faith Determination.

#### 4.4 ATTORNEY'S FEES

If any legal action, arbitration or other legal proceeding is brought in connection with or related to the interpretation, performance or enforcement of the Contract Documents or the performance or nonperformance of the Work, including, but not limited to, an action to rescind the Construction Contract, the prevailing party therein shall be entitled to recover from the other party the prevailing party's actual costs, expenses and attorneys' fees at arbitration, mediation, trial and on appeal. The determination of the "prevailing party" shall be based upon the party who prevails upon the matters actually litigated or arbitrated and shall not be determined solely based on the party receiving a net monetary recovery.

#### 4.5 NOTICE OF THIRD-PARTY CLAIMS

County shall provide notification to Contractor within a reasonable time after receipt of any third-party claim relating to the Construction Contract. County shall be entitled to recover from Contractor its reasonable costs of providing such notification.

#### 4.6 WAIVERS OF RIGHTS BY CONTRACTOR

**COUNTY AND CONTRACTOR ACKNOWLEDGE THAT IT IS IN THE INTERESTS OF BOTH PARTIES THAT CHANGES, DELAYS AND CLAIMS BE IDENTIFIED, QUANTIFIED, EVALUATED AND FINALLY RESOLVED PROMPTLY, CONTEMPORANEOUSLY WITH THE CIRCUMSTANCES FROM WHICH THEY ARISE, AND THAT THERE BE CERTAINTY WITH RESPECT TO THE FINALITY OF ANY RESOLUTION OF RELATED DISPUTES. ON THOSE PREMISES, AND IN FURTHER RECOGNITION OF THE FACT THAT IT WOULD BE EXREMELY DIFFICULT OR IMPOSSIBLE TO QUANTIFY, DEMONSTRATE OR PROVE THE HARM TO COUNTY IF ANY OF THE FOREGOING PREMISES IS NOT ACHIEVED DUE TO A FAILURE BY CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS CONCERNING TIMELY NOTICE OR SUBMISSIONS OF NOTICES AND CLAIMS RELATING TO CHANGES, DELAY AND CONTRACT ADJUSTMENTS, COUNTY AND CONTRACTOR AGREE THAT FAILURE BY CONTRACTOR TO CONFORM TO SUCH REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL IN AND OF ITSELF CONSTITUTE SUFFICIENT CAUSE AND GROUNDS, WITHOUT THE NECESSITY OF COUNTY DEMONSTRATING ANY ACTUAL HARM OR PREJUDICE, FOR IMPOSING UPON CONTRACTOR A FULL AND UNCONDITIONAL WAIVER BY CONTRACTOR OF ITS RIGHT TO A CONTRACT ADJUSTMENT AND OF ITS RIGHTS AND RECOURSE FOR RECOVERY OF ANY RELATED LOSS BY ANY LEGAL PROCESS OTHERWISE PROVIDED FOR UNDER APPLICABLE LAWS.**

#### 4.7 GOOD FAITH DETERMINATIONS

Wherever in the Contract Documents it is provided that the County may or shall make a determination or decision in the exercise of good faith (including, without limitation, provisions for a Good Faith Determination by County), any such determination or decision that the person exercising such right on behalf of County believes in good faith to be a proper exercise of County's rights and to have a reasonable basis in fact, whether or not such determination is in fact proper, reasonable or correct or adjudged to be so, shall be complied with by Contractor without Delay to Contractor's performance of the Work. However, unless the Contract Documents expressly provides otherwise, neither such good faith determination or decision nor Contractor's compliance therewith shall be interpreted as precluding the Contractor from exercising its rights to seek adjudication of its rights in the manner permitted by these General Conditions or Applicable Laws.

#### 4.8 ESCROW BID DOCUMENTS

If the Bidding Documents obligate Contractor to submit Escrow Bid Documents, then submission by Contractor of its Escrow Bid Documents shall constitute a warranty and representation by Contractor that it has no other written documents or electronic files containing any information that Contractor was required to include, but failed to include, as part of its performing such obligation and Contractor agrees it shall have no right to submit for consideration by County, or offer into evidence in legal proceedings, in support of a request for Contract Adjustment or a Claim any such documentation or electronic files that Contractor so failed to include in its Escrow Bid Documents.

## ARTICLE 5 SUBCONTRACTORS

### 5.1 SUBSTITUTION

5.1.1 **Substitutions Allowed.** There shall be no substitution of or addition to the Subcontractors except as permitted by Chapter 4 (commencing at §4100), Division 2, Part 1 of the California Public Contract Code (the "Act").

5.1.2 **Contractor's Own Expense.** Any increase in the cost or time of performance of the Work resulting from the replacement, substitution or addition of a Subcontractor shall be borne solely by Contractor at Contractor's Own Expense.

5.1.3 **Substantiation of Compliance.** At any time during performance of the Work it shall be the responsibility and burden of Contractor, if requested by County, to present clear and convincing evidence that Contractor is, and all times during the bidding and Award of the Construction Contract was, in full compliance with all of the applicable provisions of the Act. Failure by Contractor to present such evidence when requested shall be deemed a breach of this Section 5.1 and of the Act, thereby entitling County to exercise any or all of its rights and remedies under the Contract Document or Applicable Laws, including, without limitation, the right to cancel the Construction Contract or assess any penalties provided for by the Act.

5.1.4 **Splitting Prohibited.** Any attempt by Contractor to avoid compliance with the Act, such as, but not limited to, by splitting the work of subcontracts with Subcontractors into separate contracts or changes orders so as to not exceed the monetary threshold of the Act applicable to listing of Subcontractors, is strictly prohibited.

### 5.2 SUBCONTRACTUAL RELATIONS

5.2.1 **Written Agreements.** Contractor shall, by written agreement entered into between the Contractor and Subcontractors no later than twenty (20) Days after Award, require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents and to assume toward Contractor all the obligations and responsibilities which Contractor, by the Contract Documents, assumes toward County and the Architect. Each subcontract agreement shall preserve and protect the rights of County and the Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against Contractor that Contractor, by the Contract Documents, has against County. Contractor shall require each first-Tier Subcontractor to enter into similar agreements with their sub-subcontractors. Copies of applicable portions of the Contract Documents shall be made available by Contractor to the first-Tier Subcontractors and each Subcontractor shall similarly make copies of such Contract Documents available to each Subcontractor of a lower-Tier with which it contracts. Without limitation to the foregoing, each contract that is entered into by a Subcontractor, of any Tier, shall, without limitation, require the Subcontractor:

- .1 to perform the Work in accordance with the terms of the Contract Documents;
- .2 to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward County by the Contract Documents;
- .3 to preserve and protect the rights of County under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights;
- .4 to waive all rights (including, without limitation, rights of subrogation) that the Subcontractor or its insurers may have against County and others required by the Contract Documents to be named as additional insureds, for Losses covered by insurance carried by Contractor or County, except for such rights as the Subcontractor may have to the proceeds of such insurance held by County or such other additional insured;
- .5 to afford County and entities and agencies designated by County the same rights and remedies afforded to them under the Contract Documents with respect to access to, and the right to audit and copy at

County's cost, all of the Subcontractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, memoranda and other records and documents relating to the Work and requiring the Subcontractor to preserve all such records and other items for a period of ten (10) years after Final Completion;

.6 to recognize the rights of the County under Section 5.3, below, including, without limitation, the County's right to (1) accept assignment of the Subcontractor's agreement, (2) accept assignment of Contractor's rights as obligee under a performance bond furnished by a first-Tier Subcontractor, (3) to retain the Subcontractor pursuant to the terms of its agreement with Contractor to complete the unperformed obligations under its agreement, and, (4) if requested by the County, to require that the Subcontractor execute a written agreement on terms acceptable to the County confirming that the Subcontractor is bound to the County under the terms of its agreement with Contractor;

.7 to submit applications for payment, requests for change orders and extensions of time and claims, and to comply with all other notice and submission requirements of the Contract Documents, sufficiently in advance to allow Contractor time to comply with its obligations under the Contract Documents;

.8 to purchase and maintain insurance in accordance with the requirements of the Contract Documents;

.9 to defend and indemnify the Indemnitees on the same terms as provided in Section 3.18, above;

.10 to comply with the nondiscrimination (Article 16, below) and prevailing wage (Section 3.19, above) provisions of these General Conditions;

.11 limiting the Subcontractor's right to additional compensation or extension of time due to Differing Site Conditions and Design Discrepancies in accordance with the provisions of Section 3.2, above;

.12 to provide for a right of termination for convenience by Contractor that limits the Subcontractor's right to compensation to an allocable share of the subcontract price that corresponds to the percentage of the Work properly performed by the Subcontractor, with no additional sum payable for any other Losses, including, without limitation, prospective damages, lost profits or consequential damages, of any kind; and

.13 to provide that time is of the essence to each of the Subcontractor's obligations.

**5.2.2 Copies.** Contractor shall, upon request by County made at any time, furnish to County true, complete, and executed copies of all contracts with the Subcontractors and amendments, modifications and change orders thereto. Progress payments shall not be made for items of the Work for which County has not received such documents following request therefor by County.

**5.2.3 No Brokering.** Contractor shall not permit any portion of the Work to be contracted to a firm acting as a broker, factor or other entity not actually performing a substantial portion of the Work with its own forces; provided, however, that nothing herein shall be interpreted as precluding the right of a Subcontractor who has agreed to provide all of the materials and labor for a trade to subcontract the labor portion only to a sub-subcontractor.

**5.2.4 Third-Party Rights.** Contractor acknowledges that County is an intended third-party beneficiary to all contracts between Contractor and its first-Tier Subcontractors. Notwithstanding the foregoing or anything else to the contrary in the Contract Documents, there is no intent on the part of County or Contractor to create any rights (including, without limitation, third-party beneficiary rights) in favor of any Subcontractor, of any Tier, against County and nothing contained in the Contract Documents and no course of conduct, act or omission on the part of County shall be construed as creating a direct or indirect contractual right in favor of any Subcontractor, of any Tier, and against County.

**5.2.5 All Subcontractor Tiers.** It is the Contractor's obligation to see to it that all obligations of the Contractor are assumed by (or, "flow down") to the Subcontractors, of every Tier, by the inclusion of contractual provisions requiring each of the Subcontractors, of every Tier, to bind not only themselves but their lower-Tier Subcontractors to the obligations assumed by Contractor under the Contract Documents.

### 5.3 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.3.1 **Contingent Assignment.** Contractor hereby contingently assigns to County, or to such person or entity as County, in its sole and absolute discretion, designates, all of its interest in subcontracts entered into by Contractor with its first-Tier Subcontractors. If a first-Tier Subcontractor has provided a performance bond, then Contractor's rights under such performance bond are likewise hereby deemed contingently assigned to County or its designee and provision shall be made in the performance bond for surety's consent to such contingent assignment.

5.3.2 **Acceptance by County.** The contingent assignments provided for by this Section 5.3 will be effective only as to those subcontracts and performance bonds which County or its designee accepts in writing. Said acceptance is the sole condition upon which the effectiveness of such assignments are contingent. County or its designee may accept any such assignment at any time during the course of the Work and prior to Final Completion. Such contingent assignments are part of the consideration to County for entering into the Construction Contract with Contractor and may not be withdrawn prior to Final Completion.

5.3.3 **County Obligation.** County's or its designee's sole obligation in the event it accepts a contingent assignment of a subcontract under this Section 5.3 shall be to pay in accordance with the terms of such subcontract for Work performed after written notice of acceptance of such assignment. In the event County directs that such assignment be made to County's designee, then such designee only, and not County, shall be solely liable under such assignment for Work performed after written notice of acceptance of such assignment.

### 5.4 COMMUNICATIONS BY COUNTY

County shall have the right to communicate, orally or in writing, with the Subcontractors with respect to matters that are related to Contractor's performance of its obligations under the Contract Documents. Nothing herein shall be interpreted as extending to County the right as part of such communications to direct the manner in which any Subcontractor performs the Work. Except as otherwise provided in the Construction Contract or these General Conditions, Contractor shall be provided with a copy of all such communications that are in writing. Such communications shall not create, or be interpreted as creating, any contractual obligation of County to any Subcontractor.

### 5.5 DOCUMENT AVAILABILITY

Contractor shall make available to each proposed Subcontractor with whom it enters into a contract for performance of any portion of the Work, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound so as to ensure that all matters disclosed thereby are taken into consideration and included in the terms of such contracts and shall identify to such Subcontractor the terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. The Subcontractors shall similarly be required to make copies of applicable portions of such documents available to their respective proposed sub-subcontractors or sub-subconsultants.

### 5.6 NO LIABILITY OF COUNTY

Nothing set forth in this Article 5, and no action taken by County with respect to review or approval of the Subcontractors or their contracts, shall impose any liability or responsibility upon County nor relieve Contractor of its responsibilities under the Contract Documents or Applicable Laws.

## ARTICLE 6 COUNTY'S OWN FORCES AND SEPARATE CONTRACTORS

### 6.1 COUNTY'S RIGHT TO PERFORM CONSTRUCTION WITH OWN FORCES AND TO AWARD SEPARATE CONTRACTS

6.1.1 **Right of County.** County reserves the right to perform construction or operations related to the Project with County's own forces and to award other contracts to Separate Contractors in connection with other portions of the Project or other construction or operations on the Site.

**6.1.2 Separate Contractors.** Contractor shall ascertain to its own satisfaction the scope of the Project and the nature of any other contracts that have been or may be awarded by County to Separate Contractors in prosecution of the Project. Contractor shall look solely to such Separate Contractors, and County shall not be responsible, for any Losses for which Contractor is not provided a right or recovery by means of a right to Contract Adjustment for Compensable Change or Compensable Delay, that are suffered by Contractor or the Subcontractors, of any Tier, resulting directly or indirectly from the conduct of such work by the Separate Contractors.

**6.1.3 Coordination.** Nothing in the Contract Documents creates or will create any duty on the part of County to coordinate the Work of Contractor with the work of Separate Contractors. Contractor shall, when directed to do so by County, participate with the Separate Contractors and County in reviewing the Separate Contractors' construction schedules. Contractor and Separate Contractors will coordinate all work with the other so as to facilitate the general progress of the Project. Contractor agrees that any recovery of Losses for which Contractor is not provided a right or recovery by means of a right to Contract Adjustment for Compensable Change or Compensable Delay, that are suffered by Contractor due to a failure by a Separate Contractor to coordinate its work with the Work of Contractor will be sought directly against the Separate Contractors as set forth elsewhere in this Article 6.

**6.1.4 Disputes.** Contractor and County agree that Separate Contractors in direct contractual privity with County are third party beneficiaries of the Contract Documents, but only to the extent of claims and causes of action against Contractor arising out of or resulting from Contractor's performance or failure of performance under the Contract Documents or any act or omission of Contractor or the Subcontractors causing Loss to such Separate Contractors. Contractor consents to being sued by Separate Contractors for Losses caused by Contractor or any of the Subcontractors. Contractor hereby waives lack of privity of contract with such Separate Contractors as a defense to such actions.

**6.1.5 Remedy.** If Contractor as a result of the acts or omissions of one or more of the Separate Contractors suffers a Loss that is not compensated by means of a right given to Contractor under the Contract Documents to a Contract Adjustment, then Contractor's sole remedy is to assert a claim or cause of action directly against the Separate Contractor(s) causing the Loss and Contractor hereby releases, acquits, holds harmless and forever discharges County of and from any and all liability for such Loss.

## **6.2 MUTUAL RESPONSIBILITY**

**6.2.1 Use of Site.** Nothing contained in the Contract Documents shall be interpreted as granting Contractor exclusive use or occupancy of the Site. Contractor shall afford County's own forces and the Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities. Contractor shall not Delay the work of the Separate Contractors or County's own forces.

**6.2.2 Adjoining Work.** If part of Contractor's performance of the Work depends for proper execution or results upon construction or operations by County's own forces or Separate Contractors, Contractor shall, prior to proceeding with that portion of the Work, carefully inspect such construction and operations and promptly report in writing to the County apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Contractor will be responsible, at Contractor's Own Expense, for Losses to County resulting from any such discrepancies or defects not reported in accordance with this Paragraph 6.2.1 that were apparent or that should have been apparent to Contractor on careful inspection.

**6.2.3 Damage.** Contractor shall promptly remedy Loss caused by Contractor or its Subcontractors to completed construction or partially completed construction on the Site, or to property of County or the Separate Contractors.

**6.2.4 Disputes.** Contractor shall notify the County in writing within five (5) Days if it believes it has experienced or is experiencing any Delay or Loss due to the activities of County's own forces or the Separate Contractors or in the event of any dispute with County's own forces or a Separate Contractor.

**6.2.5 Settlement of Disputes.** If Contractor or any Subcontractor causes a Loss to a Separate Contractor, then Contractor will promptly settle the matter directly with the Separate Contractor and will defend, indemnify and hold County and the other Indemnitees harmless from any and all effects of such Loss in accordance with the terms of Section 3.18, above.

### 6.3 ALLOCATION OF CLEANUP COSTS

If a dispute arises among Contractor, the Separate Contractors and/or County as to the responsibility for maintaining the Site and surrounding area free from waste materials and rubbish, County may clean up such waste materials and rubbish and allocate the cost among those responsible as County determines in good faith to be just.

## ARTICLE 7 CHANGES IN THE WORK

### 7.1 CHANGES

7.1.1 **General.** County is authorized to make Changes in the Work in accordance with the provisions of this Article 7.

7.1.2 **Contract Adjustments.** Contract Adjustments shall only be permitted as follows: (1) the Contract Price shall only be adjusted by means of a Change Order or Unilateral Change Order for Compensable Change, Deleted Work or Compensable Delay; and (2) the Contract Time shall be adjusted by means of a Change Order or Unilateral Change Order for Excusable Delay, Compensable Delay or Deleted Work. All Contract Adjustments to the Contract Price shall conform, without limitation, to the requirements of this Article 7. All Contract Adjustments to the Contract Time shall conform, without limitation, to the applicable requirements of this Article 7 and Article 8, below.

7.1.3 **Exclusive Rights.** The rights expressly set forth in the Contract Documents for Contract Adjustments constitute Contractor's exclusive rights for additional compensation or extensions of time and are intended to be in lieu of and wholly replace any other such rights and remedies that Contractor has under Applicable Laws for recovery or relief on account of Loss or Delay in connection with performance of the Work, it being the intent of the County and Contractor that if circumstances arise for which the Contract Documents do not provide to Contractor an express right to a Contract Adjustment, then such omission of an express right shall conclusively be deemed to mean that no right to a Contract Adjustment was intended; and, consistent with that intent, no right to a Contract Adjustment on account of such circumstances shall by any means, legal or equitable, of interpretation, construction, inference, implication or application be considered, found or adjudged to exist.

7.1.4 **Written Authorization.** Any Change performed by Contractor pursuant to any direction other than a duly authorized and executed Change Order, Unilateral Change Order or Construction Change Directive shall be at Contractor's Own Expense.

7.1.5 **Prompt Performance.** Subject to the procedures set forth in this Article 7 and elsewhere in the Contract Documents, all Changes shall be performed promptly and without Delay.

### 7.2 SIGNATURES AND AUTHORIZATIONS

7.2.1 **Parties.** A Change Order shall be executed by County and Contractor. A Unilateral Change Order shall be executed by the County. Construction Change Directives shall be executed in accordance with Section 7.5, below.

7.2.2 **Form.** Change Orders, Unilateral Change Orders and Construction Change Directives shall be executed using forms furnished by County or, if requested by County, using forms furnished by Contractor that are approved by County.

#### 7.2.3 Authorization.

##### .1 Compensable Changes.

(1) **Assistant CEO/EDA.** A Compensable Change shall be performed by Contractor only if authorized by a Change Order, Unilateral Change Order or Construction Change Directive signed by the Assistant CEO/EDA in accordance with the requirements of this Article 7; provided, however, that Assistant

CEO/EDA's authority to bind the County to a Contract Adjustment shall be subject to the limitations of Public Contract Code §20142.

(2) **County's Project Manager.** The person identified by County as its "project manager" for the Project shall have the right to exercise the Assistant CEO/EDA's authority under this Paragraph 7.2.3, but only if and to the extent that such authority is expressly given to such project manager in a writing signed by the Assistant CEO/EDA (and not by a designee of the Assistant CEO/EDA).

(3) **Board of Supervisors.** Except as otherwise provided in Subparagraph 7.2.3.1 (4), below, if a Contract Adjustment increasing the Contract Price would exceed the limitations of Public Contract Code §20142, then in addition to written authorization by the Assistant CEO/EDA, such Compensable Change shall be performed only if approved by a vote of the Board of Supervisors in accordance with the requirements of Applicable Laws.

(4) **Disputed Changes.** If a dispute arises between County and Contractor over (a) whether a particular portion of the Work constitutes a Compensable Change or (b) the amount of the Contract Adjustment to which Contractor is entitled on account of a Compensable Change, then, notwithstanding such dispute, the Contractor shall, if ordered to do so in a Construction Change Directive signed by Assistant CEO/EDA, perform the disputed Work without Delay. Such direction by County shall not be interpreted as an agreement or admission by County that the disputed Change constitutes Extra Work or a Compensable Change for which Contractor is entitled to a Contract Adjustment. Compliance by Contractor with such direction shall not be interpreted as a waiver of Contractor's right to a Contract Adjustment if and to the extent that Contractor is entitled to a Contract Adjustment or Claim under the terms of the Contract Documents, including, without limitation, the right of Contractor to recover upon a Claim for the amount of any excess in the event that it is adjudged that the amount of the Contract Adjustment to which Contractor is entitled exceeds the limits of Public Contract Code §20142.

**.2 WRITING OF ESSENCE. IT IS OF THE ESSENCE TO THE CONSTRUCTION CONTRACT BETWEEN CONTRACTOR AND COUNTY THAT ALL CHANGES MUST BE AUTHORIZED IN ADVANCE, IN WRITING, AS REQUIRED BY THIS ARTICLE 7. ACCORDINGLY, NO VERBAL DIRECTIONS, COURSE OF CONDUCT BETWEEN THE PARTIES, EXPRESS OR IMPLIED ACCEPTANCE OF CHANGES OR OF THE WORK, OR CLAIM THAT THE COUNTY HAS BEEN UNJUSTLY ENRICHED (WHETHER OR NOT THERE HAS BEEN SUCH ENRICHMENT) SHALL BE THE BASIS FOR A CONTRACT ADJUSTMENT IF CONTRACTOR HAS NOT OBTAINED ADVANCE WRITTEN AUTHORIZATION IN THE MANNER REQUIRED BY THIS ARTICLE 7.**

### 7.3 CHANGE ORDERS

7.3.1 **Purpose.** The purpose of a Change Order is to establish the terms of the County's and Contractor's mutual agreement to a Contract Adjustment.

7.3.2 **Content.** A Change Order is a written instrument, prepared by the County, stating:

- .1 a Compensable Change or Deleted Work;
- .2 a Compensable Delay or Excusable Delay;
- .3 the amount of the Contract Adjustment, if any, to the Contract Price; and/or
- .4 the extent of the Contract Adjustment, if any, to the Contract Time.

### 7.4 UNILATERAL CHANGE ORDERS

7.4.1 **Purpose.** The purpose of a Unilateral Change Order is to establish the County's estimate of a disputed Contract Adjustment.

7.4.2 Good Faith Determination. The County's determination in a Unilateral Change Order of a Contract Adjustment shall be based upon a Good Faith Determination by County of the Contract Adjustment that is appropriate under the circumstances and consistent with the terms of the Contract Documents.

7.4.3 **Claim by Contractor.** If Contractor disputes any portion of the County's Good Faith Determination of a Contract Adjustment that is set forth in a Unilateral Change Order, Contractor shall file, within thirty (30) Days after issuance of the Unilateral Change Order by County, a Claim pursuant to Section 4.3, above. The amount of the Contract Adjustment requested in the Claim shall not exceed the difference between the amount (either in terms of dollar amount or number of Days) of the Contract Adjustment requested by Contractor and the amount (either in terms of dollar amount or number of Days) of the Contract Adjustment granted in the Unilateral Change Order. Contractor shall have no reserved right, and hereby waives any such right that may exist under Applicable Laws, to seek in such Claim a Contract Adjustment or recovery that is based upon any amount (either in terms of dollar amount or number of Days) that is in excess of such difference.

#### 7.4.4 **WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO SUBMIT A CLAIM PURSUANT TO SECTION 4.3, ABOVE, WITHIN THIRTY (30) DAYS AFTER ISSUANCE OF A UNILATERAL CHANGE ORDER BY COUNTY SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO FURTHER RECOURSE OR RECOVERY BASED ON AN ASSERTION THAT THE AMOUNT OF THE CONTRACT ADJUSTMENT ON ACCOUNT OF THE CHANGE OR DELAY DESCRIBED IN SUCH UNILATERAL CHANGE ORDER SHOULD BE DIFFERENT THAN THE AMOUNT OF THE COUNTY'S GOOD FAITH DETERMINATION OF THE CONTRACT ADJUSTMENT AS SET FORTH IN SUCH UNILATERAL CHANGE ORDER.**

#### 7.5 **CONSTRUCTION CHANGE DIRECTIVES**

7.5.1 **Purpose.** The purpose of a Construction Change Directive is to: (1) direct the performance of a Change that does not involve a Contract Adjustment; (2) establish a mutually agreed basis for compensation to Contractor for a Compensable Change under circumstances where performance of the Compensable Change needs to proceed in advance of the County performing a full evaluation of the Contractor's rights relative to a Contract Adjustment; or (3) direct performance of Work or a Change with respect to which there exists a dispute or question regarding the terms of a Contract Adjustment.

7.5.2 **No Contract Adjustment.** A Construction Change Directive that directs the performance of Work or a Change that does not involve a Contract Adjustment to the Contract Price or Contract Time may be authorized by either the Assistant CEO/EDA or the County's project manager and shall be promptly performed by Contractor so as to not cause Delay to any other portion of the Work. A Construction Change Directive directing performance of a Change that does not contain any statement indicating that a Contract Adjustment is requested or required shall be conclusively presumed to be a Change that is not a Compensable Change and no Contract Adjustment increasing the Contract Price or Contract Time will be made on account thereof.

7.5.3 **Agreed Contract Adjustment.** A Construction Change Directive that contains a complete or partial agreement by the County and Contractor with respect to the Contractor's right to, or the amount of, a Contract Adjustment shall be authorized in accordance with, conform to the requirements of and be binding upon County and Contractor as provided for in, this Paragraph 7.5.3.

.1 **Complete Agreement.** Each Construction Change Directive involving a Compensable Change or Deleted Work with respect to which there is complete agreement on the terms of the Contract Adjustment shall comply with the following:

(1) **Statement of Agreement.** A statement shall be included that the County and Contractor are in agreement on all of the terms of the Contract Adjustment related to performance of such Compensable Change and set forth a full description of the terms of the Contract Adjustment, including, without limitation, its effect on the Contract Price and Contract Time.

(2) **Legal Effect.**



(a) Upon Contractor.

THE AGREED TERMS OF THE CONTRACT ADJUSTMENT WITH RESPECT TO WHICH THERE IS A STATEMENT OF FULL AGREEMENT ON THE TERMS OF THE CONTRACT ADJUSTMENT FOR A CHANGE IN THE WORK SHALL BE FINAL AND BINDING UPON CONTRACTOR. ANY RIGHT OR CLAIM BY CONTRACTOR FOR ANY ADDITIONAL COMPENSATION OR EXTENSION OF TIME RELATING DIRECTLY OR INDIRECTLY TO SUCH CHANGE SHALL BE CONCLUSIVELY DEEMED WAIVED BY CONTRACTOR, EVEN IF THE CIRCUMSTANCES GIVING RISE TO SUCH ADDITIONAL COMPENSATION OR EXTENSION OF TIME WERE NOT SUSPECTED BY OR KNOWN TO THE CONTRACTOR AT THE TIME OF EXECUTION OF THE CONSTRUCTION CHANGE DIRECTIVE AND IF SUSPECTED OR KNOWN WOULD HAVE BEEN CONSIDERED BY CONTRACTOR TO HAVE BEEN MATERIAL TO CONTRACTOR'S AGREEMENT TO THE CONTRACT ADJUSTMENT SET FORTH IN THE CONSTRUCTION CHANGE DIRECTIVE.

(b) Upon County. In recognition of the fact that Construction Change Directives may be issued under circumstances in which the County may not have had the access to pertinent information required for the County to fully evaluate the circumstances giving rise to the Change, it is agreed that neither the issuance nor execution of, nor any statement contained in, nor any course of conduct in connection with, a Construction Change Directive (including, without limitation, a Construction Change Directive that constitutes a full agreement by County and Contractor on the terms of a Contract Adjustment) shall be interpreted as a waiver, release or settlement of any of County's rights relating to the subject matter of the Construction Change Directive, or as creating or implying any right of Contractor to a Contract Adjustment, if it is found by County upon further investigation that circumstances existed, not known to County at the time of executing the Construction Change Directive, demonstrating that the Contractor was not in fact entitled to a Contract Adjustment or was entitled to a Contract Adjustment on different terms than those agreed to in the Construction Change Directive.

.2 Partial Agreement. Each Construction Change Directive involving a Compensable Change or Deleted Work with respect to which there is only agreement on a portion of the terms of a Contract Adjustment shall comply with the following:

(1) Agreed Terms. The Construction Change Directive shall state those terms of the Contract Adjustment as to which there is agreement.

(a) Legal Effect. Except to the extent of any additional open (i.e., non-agreed) terms stated or reserved in the Construction Change Directive, such agreement shall have the same legal effect set forth in Subparagraph 7.5.3.1 (2), above.

(b) Time and Materials. In the event that County and Contractor agree in the Construction Change Directive to the "time and materials" method of calculation set forth in Subparagraph 7.7.1.1 (4), below, but do not agree upon a maximum price, then the total cost to County for the Work covered by the Construction Change Directive shall under no circumstances exceed a price that is reasonable, competitive and fair to County given the amount and type of Work involved and the circumstances under which the Compensable Change is performed.

(2) Open Terms. The Construction Change Directive shall state those terms of the Contract Adjustment that are "open" or "disputed"; meaning those terms as to which the County and Contractor did not reach agreement.

(a) ROM Estimate. If such open terms involve the amount of the Contract Adjustment to the Contract Price or Contract Time on account of a Compensable Change, then the Construction Change Directive shall also include a Reasonable Order of Magnitude Estimate prepared by Contractor, or prepared by County and acknowledged in writing as accepted by Contractor, of the probable amount of the Contract Adjustment to the Contract Price and Contract Time associated with performance of the Compensable Change.

(b) Legal Effect. A Reasonable Order of Magnitude Estimate constitutes neither (i) a guarantee by Contractor that the amount of the Contract Adjustment to the Contract Price or Contract Time that may be associated with the Compensable Change or Deleted Work covered by such Construction Change

Directive may not exceed the Reasonable Order of Magnitude Estimate nor (ii) authorization or agreement by County to a Contract Adjustment based on the amounts set forth in such Reasonable Order of Magnitude Estimate.

(c) **Time and Materials.** If County and Contractor state in the Construction Change Directive an agreement that the Contractor is entitled to a Contract Adjustment to the Contract Price on account of a Compensable Change, but do not state therein an agreement upon the method of calculation to be used for the Contract Adjustment from among the optional methods of calculation set forth in Paragraph 7.7.1, below, and if the County nonetheless directs Contractor to perform the Compensable Change pending future agreement on the amount of the Contract Adjustment, then it shall be conclusively presumed that County and Contractor have agreed that such Compensable Change shall be performed and compensated based upon the "time and materials" method of calculation set forth in Subparagraph 7.7.1.1 (4), below, and that the total Contract Adjustment for performance thereof shall under no circumstances exceed a price that is reasonable, competitive and fair to County given the amount and type of Work involved and the circumstances under which the Compensable Change is performed.

**7.5.4 Disputed Contract Adjustment.** Each Construction Change Directive involving a Contract Adjustment with respect to which there is a dispute or partial agreement shall, if Contractor is ordered to do so in a Construction Change Directive signed by the Assistant CEO/EDA, be performed by Contractor without Delay. Except as otherwise provided elsewhere in this Section 7.5, with respect to any open terms as to which the County and Contractor have not reached agreement both County and Contractor shall be deemed to have reserved their respective rights and defenses.

**7.5.5 Other Notices.** With respect to any Contract Adjustment or portion of a Contract Adjustment that is not fully resolved in a Construction Change Directive, neither issuance nor execution of such Construction Change Directive shall be interpreted as relieving Contractor of its obligation to comply with the requirements of these General Conditions relative to timely submission of notices required by the Contract Documents, including, without limitation, Notice of Change, Change Order Request, Notice of Delay or Request for Extension.

## **7.6 PROCEDURES**

### **7.6.1 Notice of Change.**

**.1 Submission.** Contractor shall submit a written Notice of Change to County if any instruction, request, drawing, specification, action, condition, omission, default or other circumstance occurs that constitutes a Compensable Change, Deleted Work, Compensable Delay or other matter that may involve or require a Contract Adjustment (additive or deductive). Such notice shall be provided prior to commencement of performance of the Work affected and no later than three (3) working days after the Discovery Date of such circumstance.

**.2 Form.** Notices of Change shall be provided using forms furnished by County or, if requested by County, using forms furnished by Contractor that are approved by County. Failure by County to request or approve a particular form shall not relieve Contractor of its obligation to provide a Notice of Change in a written form that complies with the requirements specified in Subparagraph 7.6.1.3, below.

**.3 Content.** Each Notice of Change in order to be considered complete shall include:

(1) a general statement of the circumstances giving rise to the Notice of Change (including, without limitation, identification of any related Construction Change Directive);

(2) a Reasonable Order of Magnitude Estimate by Contractor of any related Contract Adjustments (additive and deductive) to the Contract Price; and,

(3) if such circumstances involve a right to adjustment of the Contract Time due to Compensable Delay or Excusable Delay that has not been waived pursuant to Subparagraph 8.2.2.4, below, or Subparagraph 8.2.3.4, below, Contractor shall include, if not previously provided, a complete and timely Notice of Delay.

### **.4 WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO PROVIDE A COMPLETE AND TIMELY NOTICE OF CHANGE UNDER CIRCUMSTANCES WHERE A NOTICE OF CHANGE INVOLVING A CHANGE IS REQUIRED BY THIS PARAGRAPH 7.6.1 SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO A CONTRACT ADJUSTMENT ON ACCOUNT OF SUCH CIRCUMSTANCES AND A WAIVER OF ANY RIGHT TO FURTHER RECOURSE OR RECOVERY BY REASON OF OR RELATED TO SUCH CHANGE.**

**.5 Deductive Adjustments.** Failure by Contractor to submit a timely or proper Notice of Change under circumstances in which a Notice of Change is required shall in no way affect County's right to any deductive Contract Adjustment on account of such circumstances.

**7.6.2 Change Order Request.**

**.1 Submission.** With respect to any matter that may involve or require a Contract Adjustment (additive or deductive) of the Contract Price, Contractor shall, within fourteen (14) Days after receipt by the County of a Notice of Change pursuant to Paragraph 7.6.1, above, submit to the County a written Change Order Request.

**.2 Form.** Change Order Requests shall be provided using forms furnished by County or, if requested by County, using forms furnished by Contractor that are approved by County. Failure by County to request or approve a particular form shall not relieve Contractor of its obligation to provide a Change Order Request in a written form that complies with the requirements stated in Subparagraph 7.6.2.3, below.

**.3 Content.** Each Change Order Request in order to be considered complete shall include:

(1) a detailed description of the circumstances for the Compensable Change, Deleted Work or Compensable Delay;

(2) a complete, itemized cost breakdown (additive and deductive) of the Allowable Costs that form the basis for the Contractor's request for Contract Adjustment, including: (a) if the pricing is based on time and materials charges, all of Contractor's and each Subcontractor's Allowable Costs (including, without limitation, quantities, hours, unit prices, and rates) and Allowable Markups and (b) if the pricing is in the form of a lump sum price a detailed breakdown of the lump sum price into its component and individual items of Allowable Costs and Allowable Markup; and

(3) if such circumstances involve a right to a Contract Adjustment of the Contract Time due to Compensable Delay or Excusable Delay that has not been waived pursuant to Subparagraph 8.2.2.4, below, or Subparagraph 8.2.3.4, below, Contractor shall include, if not previously provided, a complete and timely Request for Extension.

**.4 WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO PROVIDE A COMPLETE AND TIMELY CHANGE ORDER REQUEST UNDER CIRCUMSTANCES WHERE A CHANGE ORDER REQUEST INVOLVING A CHANGE IS REQUIRED BY THIS PARAGRAPH 7.6.2 SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO A CONTRACT ADJUSTMENT ON ACCOUNT OF SUCH CIRCUMSTANCES AND A WAIVER OF ANY RIGHT TO FURTHER RECOURSE OR RECOVERY BY REASON OF OR RELATED TO SUCH CHANGE.**

**.5 Deductive Adjustments.** Failure by Contractor to submit a timely or proper Change Order Request under circumstances in which a Change Order Request is required shall in no way affect County's right to any deductive Contract Adjustment on account of such circumstances.

**7.6.3 Formal Notice of Essence.** Contractor recognizes and acknowledges that timely submission of a formal Notice of Change and Change Order Request, whether or not the circumstances of the Change may be known to the County or available to County through other means, is not a mere formality but is of crucial importance to the ability of County to promptly identify, prioritize, evaluate and mitigate the potential effects of Changes. Any form of informal notice, whether verbal or written (including, without limitation, statements in Requests for Information,

statements at regular job meetings or entries on monthly reports, daily logs or job meeting minutes), that does not strictly comply with the formal requirements of Paragraph 7.6.1, above, and Paragraph 7.6.2, above, shall therefore be insufficient.

## 7.7 PRICING

### 7.7.1 Basis of Calculation.

.1 **Changes Not Involving Time.** Contract Adjustments to the Contract Price on account of Compensable Changes or Deleted Work, other than Contract Adjustments to the Contract Price for Compensable Delay, shall be calculated according to one of the following methods:

(1) **Lump Sum.** By mutual acceptance of a lump sum proposal from Contractor based solely on Allowable Costs and Allowable Markups, that is properly itemized and supported by sufficient substantiating data to permit evaluation.

(2) **Unit Prices.** By the unit prices set forth in the Construction Contract or such other unit prices as are subsequently and mutually agreed to in writing between the County and Contractor, with no amount added thereto for Allowable Markups.

(3) **Estimating Guides.** For Compensable Changes with respect to which County elects to make a unilateral and final determination pursuant to Paragraph 7.7.11, below, by the sum of all the following:

(a) **Materials.** The reasonable value of materials and equipment documented as having been actually incorporated into the Work, which reasonable value may be less but shall never be more than Contractor's actual Allowable Costs therefor.

(b) **Labor.** An estimate of the reasonable costs of labor, installation and other services using the lower of the estimated prices for the locale of the Project (or if prices are not reported for the locale of the Project, the estimated prices that are reported for the region in which the Project is located) as reported in following recognized estimating guides: (i) R. S. Means Company, Inc. Building Construction Cost Data, Western Region - Latest Edition, P.O. Box 800 Kingston, MA 02364-800; or (ii) Lee Saylor, Inc. Current Construction Costs - Latest Edition, 9420 Topanga Canyon Boulevard, Woodland Hills, CA 91311.

(c) **Allowable Markup.** The amount that results when the applicable Allowable Markup is applied to the sum of the amounts derived from preceding Clauses (a) and (b) of this Subparagraph 7.7.1.1 (3).

#### (4) Time and Materials.

##### (a) Compensable Changes.

(i) **Contract Adjustment.** With respect to Compensable Changes, if none of the methods provided for in Subparagraphs 7.7.1.1 (1) through 7.7.1.1 (3), above, is applicable, then the additive amount increasing the Contract Price shall be calculated by taking (A) the total of the reasonable expenditures by Contractor and its Subcontractors, documented in the manner required by Paragraph 7.7.2, below, for Allowable Costs that are actually and directly incurred and paid in the performance of the Compensable Change, not to exceed for any Compensable Change a price that is reasonable, competitive and fair to County given the amount and type of Work involved and the circumstances under which the Compensable Change is performed, and (B) adding thereto the amount which results when the applicable Allowable Markups are applied to such total specified in preceding Clause (A) of this Subparagraph 7.7.1.1 (4) (a) (1).

(ii) **T & M/Guaranteed Maximums.** A Contract Adjustment that is calculated pursuant to this Subparagraph 7.7.1.1 (4) shall be subject to a not-to-exceed or guaranteed maximum price if such not-to-exceed or guaranteed maximum price has been mutually agreed upon between County and Contractor.

(iii) **Lump Sum Options.** If Contractor has reason to believe that a lump sum or unit price for a Subcontractor's performance of a portion of Extra Work authorized to be performed on a time and materials basis is available and Contractor has reason to believe such price is lower than the price that would be charged by the Subcontractor pursuant to the foregoing time and materials calculation, then Contractor has an obligation to inform County of that fact (along with the provision to the County of a complete itemized breakdown in accordance with Subparagraph 7.6.2.3(2), above) so as to afford County the opportunity, on a fully informed basis as to the component Allowable Costs and Allowable Markups that comprise such price, to avail itself of such favorable pricing.

(b) **Deleted Work.** With respect to Deleted Work (whether or not the Deleted Work involves a related Compensable Change as described in Paragraph 7.7.8, below), if none of the methods provided for in Subparagraphs 7.7.1.1 (1) through 7.7.1.1 (3), above, is applicable, then, in addition to the reduction, if any, that may be due to Owner pursuant to Subparagraph 8.2.6.2, below, (pertaining to Contract Adjustments shortening the Contract Time due to Deleted Work) and any additional reductions or credits to which County may be entitled under Paragraph 7.7.5, below, the Contract Price shall be reduced by the greater of either:

(i) the value assigned to the Deleted Work in the Schedule of Values attached to the Construction Contract, inclusive of all estimated markups by Contractor and any Subcontractor for overhead and profit set forth in the Schedule of Values (or, if insufficient detailed information on costs, overhead and profit for the Deleted Work is explicitly assigned in the Schedule of Values, as derived from the cost, bidding and/or estimating information that formed the basis for the establishment of the values set forth in such Schedule of Values); or

(ii) a reasonable estimate of the value of the Deleted Work (inclusive of all costs, overhead and profit) as of the date that the Construction Contract was executed by County and Contractor.

**.2 Changes Involving Time.** Contract Adjustments that are based on an extension of the Contract Time for Compensable Delay or a shortening of the Contract Time due to Deleted Work shall be calculated in the manner stated in the provisions of Section 3.3 of the Construction Contract and Article 8, below. Contract Adjustments that are based on an acceleration in performance of the Work that is ordered by County in writing to overcome a Compensable Delay for which the Contractor is entitled to an extension of the Contract Time that has been properly requested and is not granted by County due to a County decision to accelerate rather than extend the Contract Time shall be calculated in the manner stated in the provisions of Article 8, below.

**7.7.2 Time and Materials Documentation.** Without limitation to any other provisions of the Contract Documents, Contractor's right to reimbursement of Allowable Costs incurred by Contractor or Subcontractors in the performance of a Compensable Change for which the Contract Adjustment is calculated pursuant to the time and materials method set forth in Subparagraph 7.7.1.1 (4), above, shall be conditioned on Contractor's compliance with the following conditions with respect to documentation of the Extra Work that is involved in the performance of the Compensable Change:

**.1 Labor.** At the close of each Day on which such Extra Work is performed, Contractor shall submit to County and, if requested, to the Inspector of Record, an Extra Work report, on forms provided by County, that sets forth with respect to each and all of the actual hours spent in performance of the Extra Work on the Day that the Extra Work was performed the following: the names of the workers, their classifications, hours worked and hourly rates. Such forms shall include a written certification by Contractor's project manager or superintendent at the time of submission that the information contained therein is complete and accurate.

**.2 Materials, Equipment.** At the close of each Day on which such Extra Work is performed, Contractor shall submit to County and, if requested, to the Inspector of Record, an Extra Work report, on forms provided by County, that sets forth with respect to each and all of the materials and equipment used or consumed in the performance of the Extra Work on the Day that the Extra Work was performed, the following: a list of the materials and equipment, prices or rates charged, in the case of equipment a description of the type of equipment, identification number, and hours of operation (including loading and transportation), and copies of delivery tickets, invoices or other documentation confirmatory of the foregoing.

**.3 Other Expenditures.** At the close of each Day on which such Extra Work is performed, Contractor shall submit to County and, if requested, to the Inspector of Record, an Extra Work report, on forms provided by County, that sets forth a list of other expenditures constituting Allowable Costs incurred in performance of the Extra Work on the Day that the Extra Work was performed, along with documentation verifying the amounts thereof in such detail as County may require.

**.4 Subsequent Documentation.** Documentation not available on any Day that a portion of the Extra Work is performed shall be submitted as soon as they are available but not later than twenty-one (21) Days after the earlier of the Day of delivery or incorporation of the particular item of Extra Work at the Site.

**.5 Subcontractor Costs.** Extra Work performed by Subcontractors on a time and materials basis shall be documented in the same manner as required of Contractor under this Paragraph 7.7.2. If Owner approves of a lump sum price for a Subcontractor's performance of Extra Work, then Contractor shall submit in lieu of the documentation otherwise required by this Subparagraph 7.7.2.5, such documentation as may be requested by Owner confirming the Extra Work performed on any given Day.

**.6 Authentication.** In addition to the foregoing, County may require that Contractor comply with other reasonable requirements pertaining to observation and verification of time and materials work and authentication of time and materials tickets and invoices by persons designated by County for such purpose.

**.7 WAIVER BY CONTRACTOR.**

**THE FAILURE OF CONTRACTOR TO SUBMIT AUTHENTICATION OF COSTS IN THE MANNER REQUIRED BY THIS PARAGRAPH 7.7.2 SHALL, IF COUNTY ELECTS IN ITS REASONABLE DISCRETION TO TREAT IT AS SUCH, CONSTITUTE A WAIVER BY CONTRACTOR OF ANY RIGHT TO A CONTRACT ADJUSTMENT FOR THE ALLOWABLE COSTS INCURRED FOR PERFORMANCE OF THAT PORTION OF THE EXTRA WORK FOR WHICH CONTRACTOR HAS FAILED TO PROVIDE SUCH AUTHENTICATION.**

**7.7.3 Allowable Costs.** The term "Allowable Costs" (1) means the costs that are listed in this Paragraph 7.7.3 and (2) excludes costs that do not constitute Allowable Costs under Paragraph 7.7.4, below:

**.1 Labor.** Straight-time wages and, if specifically authorized by County in writing, overtime wages for employees employed at the Site, including wages for employees of Subcontractors performing engineering or fabrication detailing at locations other than at the Site. The use of a labor classification which would increase the Allowable Costs for Extra Work will not be permitted unless Contractor establishes the necessity for the use of such labor classification. Overtime wages and salaries shall only constitute an Allowable Cost to the extent permitted by the Contract Documents and only as specifically authorized by County in writing setting forth the amount of overtime anticipated, which amount shall be deemed the maximum amount of overtime reimbursable as an Allowable Cost. As part of the Allowable Costs permitted by this Subparagraph 7.7.3.1, Contractor shall be entitled to be reimbursed wages paid to a "time and materials clerk" employed by Contractor to track and document Compensable Changes that are authorized or permitted to be performed on a time and materials basis pursuant to Subparagraph 7.7.1.1 (4), above, provided that the time expended by such employee is verified by contemporaneously maintained time sheets maintained by such clerk showing the actual time spent tracking and documenting the performance of Compensable Changes separately from other tasks or functions performed by such clerk.

**.2 Benefits.** To the extent based on wages reimbursable under Subparagraph 7.7.3.1, above, net actual employer costs of payroll taxes (FICA, Medicare, SUTA, FUTA), insurance (as adjusted for experience modifiers, premium discounts, dividends, rebates, expense constants, assigned risk pool costs, net cost reductions due to policies with deductibles for self-insured losses, assigned risk rebates, or the like), health and welfare, pension, vacation, apprenticeship funds and benefits required by lawful collective bargaining agreements.

**.3 Materials.** Costs of materials used or consumed in the Work. Such costs for Extra Work shall be at a price that is competitive to the price charged for similar materials delivered within the general vicinity of the Site by other subcontractors, suppliers, manufacturers and distributors. The cost for any such item that is not new shall mean "fair market value" based on the estimated price a reasonable purchaser would pay to purchase the used material at the time it was used or consumed for the Work, which fair market value must be declared by Contractor and approved by County prior to such use or consumption.

**.4 Taxes.** Sales taxes on the costs of the materials described in Subparagraph 7.7.3.3, above.

**.5 Equipment Rental.** Rental charges for necessary machinery and equipment, exclusive of hand tools, whether rented from Contractor or others. No charge shall be allowed or credit required for items which have a replacement value of One Hundred Dollars (\$100) or less. The allowable rental rates shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, loading, transportation, repairs and maintenance of any kind, depreciation, storage, insurance and all incidentals. If equipment used for Extra Work is used intermittently and, when not in use, could be returned to its rental source at less expense to County than holding it at the Site, it shall be returned, unless Contractor elects to keep it at the Site at no expense to County. Under no circumstances shall the aggregate rentals chargeable for any item of equipment exceed the following percentages of the fair market value of the item at the time of its first use for the Work, which fair market value must be declared by Contractor and approved by County prior to the first use of such item in or for the Work: (1) if the item is owned by the Contractor or any company affiliated with Contractor, the aggregate rentals shall not exceed 75% of such fair market value; and (2) if the item is not owned by the Contractor or any company affiliated with Contractor, the aggregate rentals shall not exceed 100% of such fair market value. All equipment shall be acceptable to County, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and manufacturer's approved modifications shall be used to classify equipment, and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer. The cost of major repairs or overhauls of rented equipment or machinery shall be deemed a cost of business of the lessor of such equipment or machinery and shall not be reimbursable as an Allowable Cost.

**.6 Subcontractors.** Payments made by Contractor to Subcontractors; provided, however, that: (1) such payments are not otherwise precluded from reimbursement by the terms of the Contract Documents; (2) such payments are for Work performed in accordance with the requirements of the Contract Documents; (3) such payments are for amounts properly due and owing by Contractor under the terms of the governing contract between Contractor and such Subcontractor; and (4) in the case of payments for extra work performed by a Subcontractor pursuant to a change order executed between Contractor and a Subcontractor the change order was executed under circumstances in which the Subcontractor was entitled under the terms of its contract with Contractor to receive the amount of additional compensation agreed to in the change order.

**.7 Royalties, Permits.** Costs of royalties and permits.

**.8 Bonds.** Costs of bonds required to be furnished by Contractor (not Subcontractors) under the terms of the Contract Documents; provided, however, that such additional costs chargeable for Extra Work or credited for Deleted Work shall not exceed two percent (2%) of the costs described in Subparagraphs 7.7.3.1 through 7.7.3.7, above.

**7.7.4 Costs Not Allowed.** Allowable Costs shall not include any of the costs associated with any of the following (whether incurred by Contractor or a Subcontractor):

- .1** superintendent(s);
- .2** assistant superintendent(s);
- .3** project engineer(s);
- .4** project manager(s);
- .5** scheduler(s);
- .6** estimator(s);
- .7** drafting or detailing (except as otherwise permitted by Paragraph 7.7.3.1, above)
- .8** vehicles not dedicated solely to the performance of the Work;
- .9** small tools with a replacement value not exceeding One Hundred Dollars (\$100);

- .10 office expenses, including staff, materials and supplies;
- .11 on-Site and off-Site trailer and storage rental and expenses;
- .12 Site fencing not added solely due to the performance of Extra Work;
- .13 utilities, including gas, electric, sewer, water, telephone, telefax and copier equipment;
- .14 computer and data-processing personnel, equipment and software;
- .15 federal, state or local business, income and franchise taxes;
- .16 insurance (including, without limitation, general liability, automobile and worker's compensation);
- .17 without limitation to Contractor's right to liquidated damages under Section 3.3 of the Construction Contract, Losses, of any kind, incurred by Contractor or a Subcontractor, of any Tier, that arise from or relate to Delay (including Excusable Delay, Compensable Delay or Unexcused Delay) or acceleration to overcome the effects of such Delay; and
- .18 costs and expenses of any kind or item not specifically and expressly included in Paragraph 7.7.3, above.

**7.7.5 Allowable Markups.** Allowable Markups consist of the percentages set forth provided for by this Paragraph 7.7.5. Allowable Markups are deemed to cover, without limitation, the following: (1) direct and indirect overhead (including, without limitation, consumables, small tools and cleanup) and profit of the Contractor; (2) direct and indirect overhead (including, without limitation, consumables, small tools and cleanup) and profit of the Subcontractors, of every Tier; and (3) all costs that are not reimbursable to Contractor under Paragraph 7.7.4, above. Subject to the exclusions and limitations set forth in Paragraph 7.7.7, below, or elsewhere in the Contract Documents, Allowable Markups include and are limited to the following:

**.1 Self-Performed Work**

**(1) Compensable Change.** With respect to all or that portion of a Compensable Change involving Self-Performed Work, the Allowable Markup to Contractor shall be not more than five percent (5%), which percentage shall for purposes of calculating the Contract Adjustment be multiplied times the Allowable Costs incurred by Contractor in the performance thereof, including, without limitation, Allowable Costs for materials or equipment purchased by Contractor from a first-Tier Subcontractor that is not an Installation Subcontractor.

**(2) Deleted Work.** With respect to all or that portion of Deleted Work involving Self-Performed Work, Contractor shall be entitled to a credit equal to five percent (5%) of the amount of the credit for the savings to Contractor for the Self-Performed Work as calculated pursuant to Subparagraph 7.7.1.1 (4), (b), above.

**.2 Installation Subcontractors (First-Tier)**

**(1) Compensable Change.** With respect to all or that portion of a Compensable Change that is performed by a first-Tier Installation Subcontractor, the Allowable Markups to the first-Tier Installation Subcontractor and the Contractor shall be as follows:

**(a)** The Allowable Markup to the first-Tier Installation Subcontractor shall be not more than fifteen percent (15%), which percentage shall for purposes of calculating the Contract Adjustment be multiplied times the Allowable Costs incurred by such first-Tier Installation Subcontractor in the performance of such Compensable Change.

**(b)** The Allowable Markup to Contractor shall be five percent (5%), which percentage shall for purposes of calculating the Contract Adjustment be multiplied times the sum of (i) the Allowable



Costs incurred by such first-Tier Subcontractor in the performance of such Compensable Change and (ii) the amount which results when the Allowable Markups thereon that are permitted pursuant to preceding Clause (a) of this Subparagraph 7.7.5.2 (1) are multiplied times such Allowable Costs.

(2) **Deleted Work.** With respect to all or that portion of Deleted Work that was to have been performed by a first-Tier Installation Subcontractor, the Contract Price shall be reduced as provided in Subparagraph 7.7.1.1 (4), (b), above. In addition, a credit shall be due from Contractor of five percent (5%) of the amount of the total credit due pursuant to Subparagraph 7.7.1.1 (4), (b), above.

### .3 Installation Subcontractors (Second-Tier)

(1) **Compensable Change.** With respect to all or that portion of a Compensable Change that is performed by a second-Tier Installation Subcontractor, the Allowable Markups to such second-Tier Installation Subcontractor, to the first-Tier Installation Subcontractor that is above and in the same vertical contractual line of Tiers with such second-Tier Installation Subcontractor and to the Contractor, shall be as follows:

(a) The Allowable Markup to the second-Tier Installation Subcontractor shall be not more than five percent (5%), which percentage shall for purposes of calculating the Contract Adjustment be multiplied times the Allowable Costs incurred by such second-Tier Installation Subcontractor in the performance of such Compensable Change.

(b) The Allowable Markup to the first-Tier Installation Subcontractor that is above and in the same vertical contractual line of Tiers with such second-Tier Installation Subcontractor shall be not more than fifteen percent (15%), which percentage shall for purposes of calculating the Contract Adjustment be multiplied times the sum of (i) the Allowable Costs incurred by such second-Tier Installation Subcontractor in the performance of such Compensable Change and (ii) the amount which results when the Allowable Markups thereon pursuant to preceding Clause (a) of this Subparagraph 7.7.5.3 (1) are multiplied times such Allowable Costs.

(c) The Allowable Markup to Contractor shall be five percent (5%), which percentage shall for purposes of calculating the Contract Adjustment be multiplied times the sum of (i) the Allowable Costs incurred by the second-Tier Installation Subcontractor in the performance of such Compensable Change and (ii) the amounts which result when the Allowable Markups thereon that are permitted pursuant to Clauses (a) and (b) of this Subparagraph 7.7.5.3 (1) are multiplied times such Allowable Costs.

(2) **Deleted Work.** With respect to all or that portion of Deleted Work that was to have been performed by a second-Tier Installation Subcontractor, the Contract Price shall be reduced as provided in Subparagraph 7.7.1.1 (4), (b), above. In addition, a credit shall be due from Contractor of five percent (5%) of the amount of the total credit due pursuant to Subparagraph 7.7.1.1 (4), (b), above.

### .4 Other Subcontractors.

(1) **Compensable Changes:** With respect to any other Subcontractor, of any Tier, performing all or a portion of a Compensable Change who is not an Installation Subcontractor or who is an Installation Subcontractor below the second-Tier, the following shall apply:

(a) No markup shall be allowed to such other Subcontractor.

(b) The Subcontractor that is positioned in the Tier immediately above such other Subcontractor shall be entitled to an Allowable Markup of not more than five percent (5%) upon the Allowable Costs incurred by such other Subcontractor in the performance thereof.

(c) No other Allowable Markup by any Subcontractor of any Tier above such other Subcontractor shall be permitted.

(d) Contractor shall be entitled to an Allowable Markup of five percent (5%) of the sum of (i) the Allowable Costs of such other Subcontractor incurred in the performance of such Compensable

Change and (ii) the amount which results when the Allowable Markup permitted by Clause (b) of this Subparagraph 7.7.5.4 (1) is multiplied times such Allowable Costs.

**(2) Deleted Work.** With respect to all or that portion of Deleted Work that was to have been performed by such other Subcontractor who is not an Installation Subcontractor or who is an Installation Subcontractor below the second-Tier, the Contract Price shall be reduced as provided in Subparagraph 7.7.1.1 (4), (b), above. In addition, a credit shall be due from Contractor of five percent (5%) of the amount of the total credit due pursuant to Subparagraph 7.7.1.1 (4), (b), above.

**7.7.6 Review of Markups.** It is Contractor's responsibility to review information submitted by Subcontractors to ensure that all markups comply with the requirements of the Contract Documents. Payment by the County of markups that exceed Allowable Markups shall not be considered as a waiver by County of the right to require repayment by Contractor of any markup charged that is in excess of Allowable Markups and such excess amounts shall be promptly paid by Contractor to County.

**7.7.7 Exclusions and Limitations.** Allowable Markups are not permitted:

- .1 on agreed unit prices;
- .2 on materials, products or equipment furnished by County;
- .3 on liquidated damages payable to Contractor pursuant to Section 3.3 of the Construction Contract for Compensable Delay;
- .4 to a Subcontractor who contracts to perform a Compensable Change that is in fact wholly performed by another Subcontractor (for purposes of this Paragraph 7.7.7, "wholly performed" means that all of the Compensable Change, other than supervision or minor labor or materials, are furnished by such other Subcontractor); or
- .5 on any cost or compensation with respect to which the Contract Documents state that there shall be "no Allowable Markup", "no markup for overhead and profit" or words of similar meaning.

**7.7.8 Net Calculations.** If any one Change or collection of Changes in the same or related portions of the Work, or in multiple portions of Work covered by a single bulletin or instruction by County, involve both Compensable Change and Deleted Work, and if the added Allowable Costs resulting from the Compensable Change exceed the reduction calculated in accordance with Subparagraph 7.7.1.1 (4), (b), above, (excluding any Allowable Markup to the Contractor) then the calculation of Allowable Markups to Contractor shall be based on and limited to the resulting net increase in the Allowable Costs.

**7.7.9 Unit Prices.** Unless otherwise stated in the Contract Documents, unit prices stated in the Contract Documents or subsequently agreed upon by County and Contractor shall be deemed to include and encompass all costs of performance, overhead and profit, including, without limitation, all Allowable Costs and Allowable Markups. If the unit price stated in the Contract Documents is based on an estimated quantity established by County in the Construction Contract and the actual quantity of such unit-priced item varies by more than 25% above or below the estimated quantity, an equitable adjustment in the Contract Price shall be made upon demand of either County or Contractor. Such equitable adjustment shall be based solely upon any increase or decrease in Allowable Costs (without any Allowable Markups), due solely to the variation above 125% or below 75% of the estimated quantity.

**7.7.10 Discounts.** For purposes of determining Allowable Costs of a Compensable Change, all trade discounts, rebates, refunds, and returns from the sale of surplus materials and equipment shall accrue and be credited to County, and Contractor shall take all necessary steps to ensure that such discounts, rebates, refunds, and returns are secured.

**7.7.11 Prompt Pricing.** It is fundamental to the County's objective of controlling costs that performance of Compensable Changes on a time and materials basis of compensation and without a not-to-exceed price be curtailed. Contractor recognizes that prompt pricing by Contractor is critical to this objective. Accordingly, in addition to and without limitation on any of the County's other rights or remedies, including, without limitation, its right to enforce a

waiver under Subparagraph 7.6.2.4, above, it is agreed that if Contractor fails to timely submit a complete Change Order Request in accordance with Paragraph 7.6.2, above, with respect to any circumstance, event or occurrence constituting a Compensable Change then: (1) any Delay to the performance of the Work associated with the performance, delayed performance or nonperformance of such Compensable Change shall be conclusively deemed to be an Unexcused Delay; and (2) the County shall have the option, exercised in its sole discretion, to unilaterally fix and determine the amount of the Contract Adjustment to the Contract Price for such Compensable Change based on the "estimating guide" method set forth in Subparagraph 7.7.1.1 (3), above, which determination shall be conclusively final and binding upon Contractor.

**7.7.12 Final Payment.** No Claim by Contractor for a Contract Adjustment shall be allowed if asserted after Final Payment.

**7.7.13 Full Resolution.** Except as otherwise stated in Paragraph 7.7.14, below, the signing of a Change Order by Contractor and the County shall be conclusively deemed to be a full resolution, settlement and accord and satisfaction with respect to any and all Loss and Delay, whether known or unknown at the time of execution of the Change Order, related to the subject matter of the Change Order, including, without limitation, all rights to recovery of costs, expenses or damages for delay, disruption, hindrance, interference, extended or extraordinary (direct and indirect) overhead, multiplicity of changes, loss of productivity, labor, wage or material cost escalations, inefficiency, legal expenses, consultant costs, interest, lost profits or revenue, bond and insurance costs, changes in taxes and other similar and related Losses. The foregoing provisions of this Paragraph 7.7.13 shall, whether or not they are expressly stated or referenced on the face of a Change Order, be deemed to be part of the terms of the Change Order and shall be deemed to supersede and govern over any other provision contained in any proposal, estimate or other documents attached to or referenced in such Change Order that conflicts with the provisions of this Paragraph 7.7.13. **ANY RIGHT OR CLAIM BY CONTRACTOR FOR ANY ADDITIONAL COMPENSATION OR EXTENSION OF TIME RELATING DIRECTLY OR INDIRECTLY TO A COMPENSABLE CHANGE DESCRIBED IN A FULLY EXECUTED CHANGE ORDER SHALL BE CONCLUSIVELY DEEMED WAIVED BY CONTRACTOR, EVEN IF THE CIRCUMSTANCES GIVING RISE TO SUCH ADDITIONAL COMPENSATION OR EXTENSION OF TIME WERE NOT SUSPECTED BY OR KNOWN TO THE CONTRACTOR AT THE TIME OF EXECUTION OF THE CONSTRUCTION CHANGE DIRECTIVE AND IF SUSPECTED OR KNOWN WOULD HAVE BEEN CONSIDERED BY CONTRACTOR TO HAVE BEEN MATERIAL TO CONTRACTOR'S AGREEMENT TO THE CONTRACT ADJUSTMENT SET FORTH IN THE CHANGE ORDER.**

**7.7.14 Reserved Rights.** Change Orders shall be executed by Contractor without any express reservation of rights by Contractor to reserve for the future the assertion of any right of recovery from the County for Loss or Delay arising out of or relating to the subject matter of the Change Order. Execution of a Change Order, Unilateral Change Order or Construction Change Directive shall not be interpreted as a waiver, release or settlement of any rights or claims that the County may have for any of the following: (1) Defective Work; (2) liquidated damages or actual Losses for Delay; or (3) recoupment by County (by way of withholding of funds, set off or recovery from Contractor) of amounts paid by County for costs or markups on costs that the County discovers, following payment of such amounts to Contractor, do not constitute proper charges to County, or that constitute charges that are not properly substantiated, under the terms of the Contract Documents.

**7.7.15 No "Total Cost" Calculations.** Contractor represents and warrants that it has the ability to generate and maintain complete and accurate cost accounting records that, if required, will reflect the actual costs of the Work incurred or avoided for multiple Compensable Changes and, on an event-by-event basis, the effect of multiple and concurrently occurring or caused Compensable Delays on the progress of the Work. Accordingly, Contractor agrees that all Change Order Requests and Claims shall be itemized in a manner that, with reasonable mathematical certainty and without reliance upon probabilities or inferences, segregates on a discrete, event-by-event basis the direct, actual Allowable Costs associated with each individual Compensable Change or Compensable Delay. Unless otherwise agreed to by County in writing in the exercise of its sole discretion, Change Order Requests and Claims shall not be based, in whole or in part, upon any methodology (such as "total cost" or "modified total cost" methodologies) that purports to establish Contractor's entitlement to additional compensation inferentially based, solely or principally, on the difference between Contractor's total costs for the Work or a portion of the Work and its original Bid.

**7.7.16 Multiple Changes.** The County reserves the absolute right to make whatever Changes, including, without limitation, Compensable Changes or Deleted Work, that it determines, in its sole discretion, are necessary or

otherwise desirable. Under no circumstances shall the individual or cumulative number, value or scope of such Changes, or their individual and cumulative impact on the Work, become a basis for Contractor to assert any claim for breach of contract, abandonment, rescission, termination, cardinal change or reformation of the Construction Contract, nor shall such circumstances be the basis for Contractor, or any of the Subcontractors, of any Tier, to assert a right of recovery of any Loss if such right is not permitted by, or is in excess of that allowed under, the Contract Documents.

**7.7.17 Continuous Performance.** Subject to Contractor's rights under Section 15.4, below, no dispute or disagreement with respect to any Changes or Delay, including, without limitation, disputes over Contractor's right to or the terms of a Contract Adjustment, shall relieve or excuse Contractor from the obligation to proceed with and maintain continuous, expeditious and uninterrupted performance of the Work, including performance of any disputed Changes.

## **ARTICLE 8 CONTRACT TIME**

### **8.1 COMMENCEMENT AND COMPLETION**

**8.1.1 Date of Commencement.** The Date of Commencement shall not be postponed by the failure of Contractor or of persons or entities for whom Contractor is responsible to perform an obligation. Contractor shall not knowingly, except by agreement or instruction of the County in writing, commence operations on the Site or elsewhere prior to receipt of a Notice to Proceed. Contractor shall not commence any Work at the Site prior to its obtaining the insurance required by Article 11, below, and the Performance Bond and Payment Bond required by Article 12, below, and the Date of Commencement of the Work shall not be changed by the effective date of such insurance or bonds.

**8.1.2 Substantial, Final Completion.** Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion and Final Completion within the Contract Time, as adjusted for extensions of time duly permitted, authorized and noticed pursuant to Section 8.2, below.

**8.1.3 Adjustments to Contract Time.** Subject to the limitations set forth in this Article 8 and elsewhere in the Contract Documents, the Contract Time shall be extended for Compensable Delays and Excusable Delays and shall, where appropriate, be shortened for Deleted Work.

**8.1.4 Early Completion.** Nothing stated in these General Conditions or elsewhere in the Contract Documents shall be interpreted as creating any contractual right, express or implied, on the part of Contractor to finish the Work earlier than the Contract Time. Contractor has included in its Contract Price the costs of all Contractor's and its Subcontractors' direct and indirect overhead, including but not limited to all staff, temporary facilities, temporary utilities and home office overhead for the entire duration of the Contract Time. These costs have been included in the Contract Price notwithstanding Contractor's anticipation of possibly completing the Work in fewer Days than established by the Contract Time. Under no circumstances (including, without limitation, circumstances in which the County has approved in writing of Contractor completing early) shall the County be liable to Contractor for any Losses, of any kind, due to the inability of Contractor to complete the Work earlier than the Contract Time, regardless of the cause, including, without limitation, Delays due to acts or omissions (intentional or negligent) of the County, Inspectors of Record, County Consultants, Separate Contractors or others. If the Contractor anticipates completing early, it must obtain in advance County's approval in writing of such early completion. Approval by County of such early completion may be granted or withheld in the County's sole and absolute discretion.

### **8.2 DELAYS AND EXTENSIONS OF TIME**

#### **8.2.1 Adjustments to Contract Time**

**.1 Extensions.** Provided that Contractor has complied with the provisions of this Section 8.2 (including, without limitation, the requirements pertaining to timely delivery of a Notice of Delay and Request for Extension), if, as a result of Excusable Delay or Compensable Delay to the actual, as-built critical path of activities leading to achievement of Substantial Completion, Contractor is unable to achieve Substantial Completion within the Contract Time for Substantial Completion, then the Contract Time for Substantial Completion and Final Completion

shall be extended, either by Change Order or Unilateral Change Order, for the length of the proven, resulting Delay to Contractor's ability to so complete the Work. The Contract Time shall not be adjusted for Unexcused Delays.

**.2 Shortening.** Contractor shall within ten (10) Days after receiving notice of Deleted Work prepare and deliver to County a Time Impact Analysis of the impact of the Deleted Work upon the critical path to determine if the Contract Time should be shortened thereby and if so the duration of the shortening. If the County and Contractor are unable to agree upon the duration of the shortening, then County shall make a Good Faith Determination of the reasonable amount of time that the Contract Time shall be shortened on account of such Deleted Work.

**.3 Prescribed Calculations.**

**(1) Work Day Lost Calculations.** Contractor may claim an Excusable Delay or a Compensable Delay for a full Day only if all Work on a critical path activity is stopped for more than six (6) hours of a normal eight (8) hour Work Day and for a half-Day only if all Work on a critical path activity is stopped for three (3) to six (6) hours of such a normal Work Day. No Excusable Delay or Compensable Delay may be claimed if all Work on a critical path activity is stopped for less than three (3) hours of such a normal work Day. Similarly, where Deleted Work results in the projected avoidance of the need to perform more than six (6), or between three (3) and six (6) hours of all Work on a critical path activity on such a normal work day, the Contract Time shall be contracted by a full Day or half Day, respectively.

**(2) Dry Out Time Calculations.** Contract Adjustments to the Contract Time that are based upon unusual precipitation that is an Act of God as defined in Paragraph 1.1.2, above, shall include, in addition to the number of Days of Excusable Delay to which Contractor is entitled due to a cessation of Work that occurs at the Site while the unusual precipitation is occurring, an additional extension for the Delay to the critical path of activities affecting Substantial Completion that is the result of Contractor being unable, after cessation of the unusual precipitation at the Site, to proceed with performance of Work due to wet or muddy conditions at the Site (hereinafter referred to as "dry out" time); provided, however, that the amount of dry out time for which Contractor is entitled to an extension of time in any given calendar month shall not exceed the number of Days that is the product derived by multiplying (a) the number of Days of Excusable Delay to which Contractor is entitled due to a cessation of Work that occurs at the Site while such unusual precipitation is occurring, by (b) a fraction, the (i) numerator of which is the number of Days of Excusable Delay due to measurable unusual precipitation occurring at the Site during such calendar month that constitutes an Act of God as defined in Paragraph 1.1.2, above, and (ii) the denominator of which is the total number of Days of measurable precipitation occurring at the Site during said calendar month (including both the number of Days comprising the normal, 10-year monthly average of measurable precipitation recorded by NOAA and the excess, or unusual precipitation that constitutes an Act of God as defined in Paragraph 1.1.2, above).

**8.2.2 Notice of Delay.**

**.1 Submission.** Contractor shall submit written Notice of Delay to County if any instruction, request, drawing, specification, action, condition, omission, default or other circumstance occurs that constitutes an Excusable Delay or Compensable Delay or other matter that may involve or require a Contract Adjustment extending the Contract Time. Such notice shall be provided prior to performance of the Work affected or involved and no later than seven (7) Days after the Discovery Date of such circumstance.

**.2 Form.** Notices of Delay shall be provided using forms furnished by County or, if requested by County, using forms furnished by Contractor that are approved by County. Failure by County to request or approve a particular form shall not relieve Contractor of its obligation to provide Notice of Delay in a written form that complies with the requirements of this Paragraph 8.2.2.

**.3 Content.** Each Notice of Delay in order to be considered complete shall include:

**(1)** a general statement of the circumstances giving rise to the Notice of Delay (including, without limitation, identification of any related Construction Change Directive);

**(2)** a Reasonable Order of Magnitude Estimate by Contractor of any related Contract Adjustments extending the Contract Time; and

(3) if such circumstances involve a right to a Contract Adjustment to the Contract Price for Compensable Change that has not been waived by Contractor, Contractor shall include, if not previously provided, a complete and timely Notice of Change.

**.4 WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO PROVIDE A COMPLETE AND TIMELY NOTICE OF DELAY UNDER CIRCUMSTANCES WHERE A NOTICE OF DELAY INVOLVING A DELAY IS REQUIRED BY THIS PARAGRAPH 8.2.2 SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO A CONTRACT ADJUSTMENT ON ACCOUNT OF SUCH CIRCUMSTANCES AND A WAIVER OF ANY RIGHT TO FURTHER RECOURSE OR RECOVERY BY REASON OF OR RELATED TO SUCH DELAY.**

**.5 No County Notice.** Failure by Contractor to submit a timely or proper Notice of Delay under circumstances in which a Notice of Delay is required shall in no way affect County's right to a Contract Adjustment shortening the Contract Time on account of such circumstances.

**8.2.3 Request for Extension.**

**.1 Submission.** With respect to any matter that may involve or require an adjustment extending the Contract Time, Contractor shall, within fourteen (14) Days after receipt by County of a Notice of Delay pursuant to Paragraph 8.2.2, above, submit to County a written Request for Extension.

**.2 Form.** Requests for Extension shall be provided using forms furnished by County or, if requested by County, using forms furnished by Contractor that are approved by County. Failure by County to request or approve a particular form shall not relieve Contractor of its obligation to provide Requests for Extension in a written form that complies with the requirements of this Paragraph 8.2.3.

**.3 Content.** Each Request for Extension in order to be considered complete shall include:

(1) a detailed description of the circumstances giving rise to the request for Contract Adjustment to the Contract Time and a Time Impact Analysis (a Request for Extension that seeks an extension for more than one Delay shall be supported by a separate Time Impact Analysis for each separate Delay); and

(2) if such circumstances involve a right to a Contract Adjustment of the Contract Price on account of Compensable Change that has not been waived by Contractor, Contractor shall include, if not previously provided, a complete and timely Change Order Request.

**.4 WAIVER BY CONTRACTOR.**

**FAILURE BY CONTRACTOR TO PROVIDE A COMPLETE AND TIMELY REQUEST FOR EXTENSION UNDER CIRCUMSTANCES WHERE A REQUEST FOR EXTENSION INVOLVING A DELAY IS REQUIRED BY THIS PARAGRAPH 8.2.3 SHALL, IN ACCORDANCE WITH THE PROVISIONS OF SECTION 4.6 OF THE GENERAL CONDITIONS, CONSTITUTE A WAIVER BY CONTRACTOR OF THE RIGHT TO A CONTRACT ADJUSTMENT ON ACCOUNT OF SUCH CIRCUMSTANCES AND A WAIVER OF ANY RIGHT TO FURTHER RECOURSE OR RECOVERY BY REASON OF OR RELATED TO SUCH DELAY.**

**.5 Adjustments Shortening Time.** Failure by Contractor to submit a timely or proper Request for Extension under circumstances in which a Request for Extension is required shall in no way affect County's right to a Contract Adjustment shortening the Contract Time on account of such circumstances.

**8.2.4 Response by County.** After receipt of a timely and complete Request for Extension, County shall investigate the facts concerning the cause and extent of such Delay and, depending on whether the Request for Extension is justified, will notify Contractor of its approval or disapproval of all or a portion of Contractor's request. Extensions of time approved by County shall apply only to that portion of the Work affected by the Delay, and shall not apply to other portions of Work not so affected.

**8.2.5 Formal Notice of Essence.** Contractor recognizes and acknowledges that timely submission of a formal Notice of Delay and a formal Request for Extension, whether or not the circumstances of a Delay may be known to County or available to County through other means, are not mere formalities but are of crucial importance to the ability of County to promptly identify, prioritize, evaluate and mitigate the potential effects of Delay. Any forms of informal notice, whether verbal or written (including, without limitation, statements at regular job meetings or entries in monthly reports, daily logs, job meeting minutes, updated Construction Schedules or look-ahead schedules), that do not strictly comply with the formal requirements of Paragraph 8.2.2, above, and Paragraph 8.2.3, above, shall accordingly be deemed insufficient to satisfy the notice requirements of this Article 8.

**8.2.6 Compensation for Delay.**

**.1 Compensable Delay.** Contract Adjustments to the Contract Price for a Compensable Delay that involve an extension of the Contract Time shall be based, without duplication to any other Contract Adjustments to the Contract Price, on the terms of Section 3.3 of the Construction Contract. Contractor agrees to accept such right of Contract Adjustment in lieu of any other right that may exist under Applicable Laws for recovery of Losses due to Compensable Delay, whether incurred by Contractor or its Subcontractors, of any Tier.

**.2 Deleted Work.** The Contract Time and Contract Price shall be reduced by Contract Adjustment for Deleted Work (including, without limitation, Deleted Work associated with a termination by County of a portion of the Construction Contract or a deletion of portion of Work for the convenience of the County or due to an Event of Contractor Default) that results in a shortening of the Contract Time.

**(1) Contract Time.** The Contract Adjustment shortening the Contract Time for Substantial Completion shall be the number of Days that Contractor at the time of contracting would have reasonably expected to expend in performance of the Deleted Work and that, based on the Contractor's original Construction Schedule prepared on or about the time of contracting, were reasonably expected by Contractor to be critical to Substantial Completion of the Work within the Contract Time for Substantial Completion.

**(2) Contract Price.** The Contract Adjustment reducing the Contract Price shall be the product of (1) the number of Days that the Contract Time for Substantial Completion is shortened pursuant to preceding Clause (1) of this Subparagraph 8.2.6.2 multiplied times (2) the amount of liquidated damages set forth in Paragraph 3.3.2 of the Construction Contract, without any additional credit to County for Allowable Markups.

**8.2.7 Acceleration of the Work.**

**.1 Due to Unexcused Delay.** If County makes a Good Faith Determination based on County's observations of progress in performance of the Work by Contractor that Contractor will not achieve Substantial Completion of the Work within the Contract Time as adjusted pursuant to Paragraph 8.2.1, above, then Contractor shall, following receipt of a written request by County to accelerate, immediately respond in writing setting forth a detailed plan for accelerating the Work. All measures necessary, including working overtime, additional shifts, Saturdays, Sundays and holidays, to accelerate performance to ensure that the Work is performed within the Contract Time shall be taken by Contractor and the cost thereof shall be paid for by Contractor at Contractor's Own Expense. County may also take all other necessary measures to ensure no further Delays affect achievement of Substantial Completion and Final Completion of the Work within the Contract Time and the Contractor shall reimburse County, or County may withhold from payment due to Contractor, for Losses incurred by County in taking such measures.

**.2 Due to Excusable Delay.** Contractor shall have the right, exercised in its sole discretion, to accelerate performance of the Work to overcome time lost due to Excusable Delay. Such acceleration, if performed other than at the written direction of County, shall be deemed a voluntary acceleration and the cost of such accelerated performance shall be paid for by Contractor at Contractor's Own Expense. If County directs in writing that the Work be accelerated to overcome an Excusable Delay that is not concurrent with an Unexcused Delay, then Contractor shall be entitled to a Contract Adjustment to the Contract Price for such acceleration on and subject to the same terms as provided for in Subparagraph 8.2.7.3, below, in the case of an acceleration to overcome a Compensable Delay.

**.3 Due to Compensable Delay.** County shall have the right, exercised in its sole and absolute discretion, in lieu of granting a Contract Adjustment to the Contract Time for Compensable Delay, to direct in writing

the acceleration of the Work by Contractor in order to recapture time lost due to such Compensable Delay. County and Contractor shall endeavor prior to commencement of such acceleration to mutually agree upon the amount of compensation to be paid therefor. County shall have the right, in the absence of such an agreement, to direct in writing that Contractor accelerate. Contractor shall comply with such directive. Contractor's right to a Contract Adjustment to the Contract Price on account of such acceleration shall be limited to (1) the premium time portion of any overtime paid for labor provided by Contractor or any Subcontractor, plus (2) additional supervision costs for additional shifts of supervision provided at the Site by Contractor only (not by Subcontractors), plus (3) Allowable Markup thereon as provided in Paragraph 7.7.5, above. Except as directed by County in the manner stated in this Subparagraph 8.2.7.3, no statements, conduct or actions by County will be construed as creating an obligation on the part of County to agree to a Contract Adjustment to the Contract Price on account of any cost of overtime or other costs associated with an acceleration of the Work to recapture time lost due to Compensable Delay.

**8.2.8 Concurrent Delays.** For purposes of the calculations provided for in this Paragraph 8.2.8, the words "concurrent delay", "concurrently delay" or "occur concurrently" mean the portion of two or more Delays affecting the critical path to Substantial Completion that are overlapping or co-existent. Contractor's right to a Contract Adjustment of the Contract Time (pursuant to Subparagraphs 8.2.8.1, 8.2.8.2 and 8.2.8.3, below) and Contract Price (pursuant to Subparagraphs 8.2.8.4, 8.2.8.5 and 8.2.8.6, below) shall, in the case of concurrent delays, be calculated in accordance with the following:

.1 If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of Days from the commencement of the first Delay to the cessation of the Delay which ends last.

.2 If an Unexcused Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of Days, if any, by which such Excusable Delay or Compensable Delay exceeds the number of Days of such Unexcused Delay.

.3 If an Unexcused Delay occurs concurrently with both an Excusable Delay and a Compensable Delay, the maximum extension of the Contract Time shall be the number of Days, if any, by which such Excusable Delay and Compensable Delay, as determined pursuant to Subparagraph 8.2.8.1, above, exceeds the number of Days of such Unexcused Delay.

.4 If an Unexcused Delay occurs concurrently with a Compensable Delay, the maximum period of time for which Contractor shall be entitled to a Contract Adjustment to the Contract Price in accordance with Section 3.3 of the Construction Contract shall be the number of Days, if any, by which such Compensable Delay exceeds the number of Days of such Unexcused Delay.

.5 If a Compensable Delay occurs concurrently with an Excusable Delay, the maximum period of time for which Contractor shall be entitled to a Contract Adjustment to the Contract Price in accordance with Section 3.3 of the Construction Contract shall be the number of Days, if any, by which such Compensable Delay exceeds the number of Days of such Excusable Delay.

.6 If an Unexcused Delay occurs concurrently with both an Excusable Delay and a Compensable Delay, the maximum period of time for which Contractor shall be entitled to a Contract Adjustment to the Contract Price in accordance with Section 3.3 of the Construction Contract shall be the number of Days, if any, by which such Compensable Delay exceeds the number of Days of such Unexcused Delay.

**8.2.9 Delay Claims.** Claims by Contractor relating to disputed Contract Adjustments due to Delay shall be made in accordance with applicable provisions of Section 4.3, above.

**8.2.10 Exercise of County Rights.** Notwithstanding any other provision of the Contract Documents to the contrary, County's exercise in accordance with the Contract Documents of any of its rights or remedies permitted by Applicable Laws or the Contract Documents in response to a failure by Contractor or any Subcontractor to comply with the Contract Documents shall not, under any circumstances, entitle Contractor to a Contract Adjustment.



**ARTICLE 9  
PAYMENTS AND COMPLETION**

**9.1 PAYMENT BY COUNTY**

9.1.1 **Time for Payment.** County shall make payment of undisputed sums due to the Contractor upon Applications for Payment requesting Progress Payment not later than thirty (30) Days after receipt of an Application for Payment requesting Progress Payment that has been properly and timely prepared and submitted by Contractor, and approved by County, in accordance with the requirements of the Contract Documents.

9.1.2 **Not Acceptance.** No approval, inspection or use of, or payment for, the Work by County or by any person or entity acting on County's behalf shall constitute acceptance of Work that is not in accordance with the Contract Documents or a waiver of any of County's rights under the Contract Documents.

9.1.3 **Interest.** If County fails to make payment of an undisputed sum due as a Progress Payment to the Contractor as required by this Article 9, County shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of California Code of Civil Procedure §685.010. The number of Days available to the County to make payment without incurring such interest shall be reduced by the number of Days by which the County exceeds the seven (7) Day response time applicable to the County set forth in Section 9.5, below. The foregoing is the County's sole obligation with respect to payment of interest earned or accrued on an amount claimed due prior to the commencement by Contractor of legal proceedings for recovery of such amount.

9.1.4 **Disputed Payments.** Subject to Contractor's rights under Section 9.8, below, no good faith dispute or disagreement between County and Contractor with respect to the amount of any payment claimed due by Contractor shall relieve or excuse Contractor from the obligation to proceed with and maintain continuous, expeditious and uninterrupted performance of the Work.

**9.2 APPLICATIONS FOR PAYMENTS**

9.2.1 **Submission by Contractor.** Applications for Payment requesting Progress Payment shall be properly prepared and submitted by Contractor to County once a month on the twenty-fifth (25<sup>th</sup>) Day of the month. If the twenty-fifth (25<sup>th</sup>) Day of the month is a weekend or Holiday, the Application for Payment shall be submitted on the next working day.

9.2.2 **Period of Application.** The period covered by each such Application for Payment requesting Progress Payment shall be not more than thirty (30) Days ending on the twenty-fifth (25<sup>th</sup>) Day of the month in which such Application for Payment is submitted.

9.2.3 **Schedule of Values.** Each Application for Payment shall be accompanied by a Schedule of Values prepared and submitted in accordance with the requirements of the Contract Documents, including, without limitation, the provisions of Section 9.3, below.

9.2.4 **Changes in Work.** Applications for Payment may include requests for payment on account of Compensable Changes in the Work which have been properly authorized by Change Order or Unilateral Change Order.

9.2.5 **Progress Payments.** Applications for Payment requesting Progress Payments shall be based on amounts calculated in accordance with the provisions of Section 9.4, below.

9.2.6 **Percentage Completion.** Applications for Payment requesting Progress Payments shall indicate the Contractor's estimate of the percentage of completion of each line item listed in the Schedule of Values as of the end of the period covered by the Application for Payment.

9.2.7 **Projected Work.** Unless approved by County in writing in advance of an Application for Payment being submitted, which approval may be granted or denied in the sole and absolute discretion of County, Applications for Payment shall only include amounts for Work performed to the twenty-fifth (25<sup>th</sup>) Day of the month in which the

Application for Payment was submitted and shall not include request for payment of amounts for Work projected to be performed, stored or delivered beyond that date.

**9.2.8 Disagreements.** In the event of a disagreement between County and Contractor over the accuracy or reasonableness of the Contractor's statement of percentage of progress achieved that is contained in the Application for Payment, the County shall make a Good Faith Determination of the percentage, which percentage shall then be inserted by Contractor in the Application for Payment and the Application for Payment submitted, or resubmitted, incorporating such revision.

**9.2.9 Substantial Completion.** For the sole purpose of the percentage calculation set forth in Paragraph 9.2.6, above, and for no other purpose, the Work shall be deemed one hundred percent complete upon Substantial Completion and the amount released to Contractor shall, subject to County's right to withhold pursuant to Section 9.6, below, be a sum sufficient to increase the total of Progress Payments to Contractor to ninety percent (90%) of the Contract Price.

**9.2.10 Certification by Contractor.** Each Application for Payment that is submitted by Contractor shall be signed by Contractor with a certification by Contractor to County that: (1) the data comprising the Application for Payment is accurate and the Work has progressed to the point indicated; (2) to the best of Contractor's knowledge, information and belief, the Work is in accordance with the Contract Documents; (3) Contractor is entitled to payment in the amount certified; and (4) all sums previously applied for by Contractor on account of the Work performed by the Subcontractors and that have been paid by County have been paid to the Subcontractors performing such Work, without any retention, withholding or back charge by Contractor.

**9.2.11 Stored Materials.** County may, in the exercise of its sole and absolute discretion, approve or disapprove for inclusion in Contractor's Application for Payment the cost of materials to be incorporated, but not yet incorporated, in the Work and delivered and suitably stored either at the Site or at some other appropriate location acceptable to the County. As part of any request for such approval, Contractor shall furnish evidence satisfactory to County: (1) of the cost of such materials; (2) that such materials are under the exclusive control of Contractor, or if not, that title to the materials is in the County, free of any lien or encumbrance; and (3) with respect to materials stored off-Site, that the materials are safely and suitably stored in a bonded warehouse with appropriate insurance coverage satisfactory to County. No payment or approval by County pursuant to this Paragraph 9.2.11 shall (a) be construed as an inspection or acceptance of the materials; (b) relieve Contractor of its continuing and sole responsibility for the care and protection of, and sole responsibility for any Loss to, such materials, from any cause whatsoever; or (c) operate as a waiver of rights by County.

**9.2.12 Title.** Contractor warrants that title to all the Work covered by an Application for Payment will pass to County no later than the time of payment. Contractor further warrants that upon submittal of an Application for Payment all Work for which approval for payment has been previously issued by County shall, to the best of Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of Contractor, the Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials or equipment for the Work.

### **9.3 SCHEDULE OF VALUES**

**9.3.1 Initial Submission.** Within twenty-one (21) Days after issuance by County of the Notice of Intent to Award, Contractor shall submit to County a Schedule of Values, prepared in a form and incorporating a level of detail satisfactory to County, that allocates the Contract Price to various portions of the Work, including, without limitation, each portion of the Work to be performed by a Subcontractor, self-performed Work, discrete categories of direct (i.e., on-Site) overhead costs (sometimes referred to as "general conditions costs"), Contractor home office and indirect overhead and profit and amounts reserved for contingencies.

**9.3.2 Balanced Allocation.** The Schedule of Values shall be balanced, reflecting in each line item Contractor's estimated or actual cost commitments for the category of Work included in the line item and a proportionate share of Contractor's overhead and profit. Techniques, such as "front-end loading", designed to create an imbalanced cash flow are strictly prohibited.

**9.3.3 Line Estimates.** Line item values stated in the Schedule of Values that are based on Contractor's estimates, rather than actual subcontract prices, shall be identified as such and replaced with actual subcontract prices when they become available as the subcontracting process progresses.

**9.3.4 Updating.** The Schedule of Values shall be updated by Contractor each month as necessary to reflect the Contractor's actual progress in subcontracting the Work. An updated Schedule of Values shall be attached to each Application for Payment.

**9.3.5 Substantiation.** Contractor shall provide such data as County may reasonably require to substantiate that the Schedule of Values has been prepared in conformance with the requirements of the Contract Documents. Failure to provide such substantiation shall result in the Schedule of Values being deemed incomplete and unapproved by County for use by Contractor in submitting its Applications for Payment.

**9.3.6 Corrections.** If corrections are required in order to make the Schedule of Values comply with the requirements of the Contract Documents, such corrections shall be made as a condition of the Contractor's Application for Payment being considered properly prepared, submitted and complete.

**9.3.7 Changes to Work.** Costs involved in the performance of Work covered by Change Orders, Unilateral Change Orders or Construction Change Directives shall be, at the option of County, either separately scheduled or incorporated as adjustments to the respective trade lines of Work to which they apply. Except as otherwise expressly required by Article 7, above, the Schedule of Values shall not be utilized by Contractor as a basis for calculating Contract Adjustments.

**9.3.8 Applications for Payment.** The Schedule of Values prepared by Contractor in accordance with the requirements of the Contract Documents shall be used as a basis for County's review and approval or disapproval of Applications for Payment.

#### **9.4 PROGRESS PAYMENT CONDITIONS**

**9.4.1 Progress Payment Amount.** Subject to the other provisions of the Contract Documents, the amount of each Progress Payment requested in an Application for Payment shall be computed as follows:

.1 take that portion of the Contract Price properly allocable to Work (other than materials, products or equipment furnished by County) permanently incorporated at the Site as part of the Work, based on the product derived by multiplying (1) the percentage completion of each such portion of the Work times (2) the portion of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less a retention of five percent (5%) thereof;

.2 add that portion of the Contract Price that is allocable to materials and equipment (other than materials, products or equipment furnished by County) approved by County pursuant to Paragraph 9.2.11, above, and suitably stored at the Site or at a location off-Site, less a retention of five percent (5%) thereof;

.3 subtract the aggregate of previous payments made by the County; and

.4 subtract amounts, if any, that County has determined will be withheld pursuant to an exercise of the County's right to withhold pursuant to Section 9.6, below.

**9.4.2 Other Conditions and Documentation.** Contractor shall submit its Applications for Payment requesting Progress Payments to County using such forms as required by County. Without limitation to any other conditions to payment set forth elsewhere in the Contract Documents, the following shall be conditions precedent to a proper submission, and to County's approval, of each Application for Payment:

.1 submission of a Schedule of Values that complies with Section 9.3, above;

.2 submission of Contractor's certification required by Paragraph 9.2.10, above;

.3 submission of: (1) forms of conditional releases of stop notice and bond rights upon progress payment, complying with California Civil Code §3262(d)(1), for all Work performed during the time period covered by the current Application for Payment, signed by Contractor and the Subcontractors, of every Tier; and (2) forms of unconditional releases of stop notice and bond rights upon progress payment, complying with California Civil Code §3262(d)(2), for all Work performed during the time period covered by the previous Application for Payment, signed by Contractor and the Subcontractors, of every Tier;

.4 compliance by Contractor with its obligation for daily maintenance of Record Drawings and Specifications as required by Paragraph 3.10.1, above;

.5 compliance by Contractor with its obligation for submission of daily reports as required by Paragraph 3.10.2, above;

.6 compliance by Contractor with its obligations for submission of scheduling information and updating of the Construction Schedule as required by Section 3.9, above, and other provisions of the Contract Documents pertaining to preparation or updating of schedules and scheduling information;

.7 proper payment of prevailing wages as defined in California Labor Code §1720, et seq.;

.8 timely submission of adequate and complete certified payroll records for any time period that Work was performed and for which payment is being requested;

.9 submission of certifications by Contractor and the Subcontractors as required by Applicable Laws certifying that all employee benefit contributions due and owing have been paid in full;

.10 submission of sales tax information as required by Paragraph 3.6.3, above; and

.11 compliance by Contractor with all of its other obligations for submission of documentation or performance of conditions which, by the terms of the Contract Documents, constitute conditions to Contractor's right to receive payment for Work performed.

## 9.5 COUNTY APPROVAL/REJECTION OF APPLICATIONS FOR PAYMENT

9.5.1 **Review by County.** Subject to County's rights under Paragraph 9.5.4, below, County shall promptly review Applications for Payment submitted by Contractor and provide its approval or disapproval, in whole or part, within (1) seven (7) Days after receipt of an Application for Payment requesting Progress Payment, and (2) within fourteen (14) Days after receipt of an Application for Payment requesting Final Payment.

9.5.2 **Disapproval by County.** Disapproval by County disapproving of an Application for Payment shall be accompanied by an explanation of the reasons for such disapproval. Failure by County to specify in its disapproval a particular grounds for disapproval of an Application for Payment shall not waive the County's right to assert such grounds as a basis for any future disapproval, or nullification of its prior approval, of that or any other Application for Payment.

9.5.3 **Re-submittal by Contractor.** An Application for Payment that is disapproved by County shall be corrected and re-submitted by Contractor after receipt by Contractor of the notice of disapproval. A re-submitted Application for Payment shall be reviewed and responded to by County in the same manner as provided in Paragraphs 9.5.1 and 9.5.2, above. If re-submitted, the re-submitted Application for Payment shall be reviewed and responded to by County in the same manner as provided in Paragraph 9.5.1 and Paragraph 9.5.2, above. If not re-submitted, only the amount, if any, that is approved for payment shall be paid until such time as a proper Application for Payment that includes the disapproved amount has been submitted in another Application for Payment and, upon such re-submittal, approved for payment.

9.5.4 **Approval Nullification.** County reserves the right to nullify any prior approval of an Application for Payment that is later found to not be in compliance with the requirements of the Contract Documents, whether or not such noncompliance was previously actually observed or apparent on the face of the Application for Payment, and

based on such nullification County may take either of the following actions, as applicable: (1) if the Application for Payment has not yet been paid by County, disapprove of that portion of the Application for Payment that is not in compliance and withhold payment of that sum until the noncompliance is fully rectified; or (2) if the Application for Payment has been paid by County, nullify the County's prior approval and withhold payment of such disputed amounts in response to future Applications for Payment; provided, however, that in either case the amount of the County's nullification shall be limited to that portion of the amount requested in the Application for Payment that is in dispute and the amount of its withholding from the current or any future Application for Payment shall be limited to the amount nullified plus any additional withholding permitted under Section 9.6, below.

**9.5.5 No Waiver by County.** Neither approval by County or Architect of, failure by County to exercise its right of nullification with respect to, nor payment by County upon, an Application for Payment or any portion thereof shall be interpreted as or constitute a waiver or release of any of County's rights to require Contractor's full compliance with the Contract Documents.

**9.5.6 No Representation.** Neither approval by County or Architect of, failure by County to exercise its right of nullification with respect to, nor payment by County upon, an Application for Payment or any portion thereof shall be interpreted as a representation that County or Architect has: (1) made exhaustive or continuous on-Site inspections to check the quality or quantity of the Work, (2) reviewed Contractor's construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from the Subcontractors and other data requested by County or Architect to substantiate Contractor's right to payment, or (4) made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contract Price.

## **9.6 WITHHOLDING OF PAYMENT**

**9.6.1 Grounds for Withholding.** County may decline to approve an Application for Payment and withhold payment requested under any unpaid Application for Payment, in whole or in part, to such extent that County makes a Good Faith Determination that withholding is necessary, in the sole discretion of County, because of any of the following circumstances:

**.1 Third-Party Claims.** Third-party claims or stop notices filed or reasonable evidence (including, without limitation, failure by Contractor to submit conditional releases of stop notice and bond rights required by the Contract Documents) indicating the possible filing of such claims or stop notices.

**.2 Defective Work.** Defective Work not remedied.

**.3 Nonpayment.** Failure of Contractor to make proper payments to a Subcontractor for services, labor, materials or equipment or other Work.

**.4 Inability to Complete.** Reasonable doubt that the Work can be completed for the then unpaid balance of the Contract Price or within the Contract Time.

**.5 Violation of Applicable Laws.** Failure of Contractor or a Subcontractor to comply with Applicable Laws.

**.6 Penalty.** Any penalty asserted against County by virtue of Contractor's failure to comply with Applicable Laws.

**.7 Lack of Progress.** Failure by Contractor to maintain progress in accordance with the Construction Schedule.

**.8 Setoff.** Any reason specified elsewhere in the Contract Documents as grounds for a withholding, offset or setoff or that would legally entitle County to a setoff or recoupment.

**.9 Consultant Services.** Additional professional, consultant or inspection services required due to Contractor's failure to comply with the Contract Documents.

**.10 Liquidated Damages.** Liquidated damages payable to County pursuant to Section 3.2 of the Construction Contract or that there is a reasonable basis to believe will be payable to County based upon the Contractor's project date for Substantial Completion based on its update Construction Schedule or based upon other evidence available to County of the probable date that the Work will be Substantially Completed.

**.11 Damage.** Loss caused to County, a Separate Contractor or any other person or entity under contract to County, by Contractor or a Subcontractor.

**.12 Cleanup.** Cleanup performed by County and chargeable to Contractor pursuant to the terms of the Contract Documents.

**.13 Employee Benefits.** Failure of Contractor to pay contributions due and owing to employee benefits funds pursuant to any applicable collective bargaining agreement or trust agreement.

**.14 Required Documents.** Failure of Contractor to submit on a timely basis, proper and complete documentation required by the Contract Documents, including, without limitation, schedule updates, 'look ahead' schedules, pricing information, certifications and other required reports or documentation.

**.15 Labor Compliance.** Failure of Contractor or any Subcontractor to properly pay prevailing wages as defined in California Labor Code §§1720 et seq.

**.16 Nullification.** Nullification by County pursuant to Paragraph 9.5.4, above, of its prior approval of an Application for Payment.

**.17 Releases.** Failure by Contractor to submit any conditional release of stop notice and bond rights that is required pursuant to Subparagraph 9.4.2.3, above or Subparagraph 9.10.4.4, below.

**.18 Other Breach.** A breach by Contractor of any obligation or provision of the Contract Documents.

**9.6.2 Application of Withholding.** Sums properly withheld pursuant to Paragraph 9.6.1, above, may be used by County without a prior judicial determination of County's actual rights with respect to the grounds on which such withholding is based. Contractor agrees and hereby designates County as its agent for such purposes, and agrees that such payments shall be considered as payments made under the Construction Contract by County to Contractor. County shall submit to Contractor an accounting of such funds disbursed on behalf of Contractor. As an alternative to such payment, County may, in its sole and absolute discretion, elect to exercise its right to adjust the Contract Price as provided in Section 13.4, below.

**9.6.3 Final Payment.** In accordance with California Public Contract Code §7107, the amount to be withheld from Contractor's Final Payment pursuant to a withholding asserted pursuant to Paragraph 9.6.1, above, shall be limited to one hundred fifty percent (150%) of the disputed amount.

**9.6.4 Release of Withholding.** When the reasons for withholding of payment as set forth in Paragraph 9.6.1, above, are removed, approval by County will be promptly issued to Contractor for amounts previously withheld and payment of amounts withheld will be made by County within thirty (30) Days thereafter.

**9.6.5 Additional Rights.** The County's right of withholding set forth in this Section 9.6 is in addition to, and not a limitation upon, any other rights of withhold that County may have under the Contract Documents or Applicable Laws.

## **9.7 PAYMENTS BY CONTRACTOR**

**9.7.1 Payments to Subcontractors.** Contractor shall not include in its Applications for Payment sums on account of any Subcontractor's portion of the Work that it does not intend to pay to such Subcontractor. Upon receipt of payment from County, Contractor shall pay the Subcontractors performing the Work, out of the amount paid to Contractor on account of such Subcontractors' portions of the Work, the amount to which said Subcontractors are

entitled in accordance with the terms of their contracts with Contractor and Applicable Laws, including, without limitation, California Public Contract Code §7107. Contractor shall remain responsible, notwithstanding a withholding by County pursuant to the terms of these General Conditions, to promptly satisfy from its own funds sums due to all the Subcontractors who have performed the Work that is included in Contractor's Application for Payment. Contractor shall, by appropriate agreement, require each Subcontractor to make payments to its sub-subcontractors and suppliers in similar manner. County shall have no obligation to pay or be responsible in any way for payment to the Subcontractors, of any Tier.

**9.7.2 Payments in Trust.** Any funds that Contractor receives in payment for services or Work performed by a Subcontractor shall constitute assets of a trust, which trust funds shall be used for the exclusive benefit of the Subcontractor for the purpose of discharging Contractor's financial obligations on account of labor, services, materials or equipment furnished to the Project by the Subcontractor, provided that such labor, services, materials or equipment were performed in accordance with the Contract Documents, were included in an Application for Payment to County, and were paid by the County to Contractor. Contractor shall be the trustee of the trust and shall be required to deal with the trust assets for the benefit of the Subcontractor. Contractor shall not be a beneficiary of the trust. Nothing herein shall be construed as an intent to require that Contractor maintain trust funds in separate bank accounts, specifically designate any third party as a beneficiary of the trust created herein, or otherwise give rise to any cause of action against the County by any third party beneficiary of the trust created herein.

**9.7.3 Payment Information.** County will, on request, furnish to any of the Subcontractors, if practicable, information for such Subcontractor's review regarding percentages of completion or amounts applied for by Contractor and action taken thereon by County on account of portions of the Work done by such Subcontractor.

**9.7.4 Joint Payment.** County shall have the right, if deemed necessary in its sole discretion, to issue joint checks made payable to Contractor and any of the Subcontractors, of any Tier. The joint check payees shall be solely responsible for the allocation and disbursement of funds included as part of any such joint payment. Endorsement on such check by a payee shall be conclusively presumed to constitute receipt of payment by such payee. In no event shall any joint check payment be construed to create: (1) any contract between County and any of the Subcontractors, of any Tier; (2) any obligation from County to any of the Subcontractors; or (3) any third-party rights against County or Architect.

**9.7.5 Direct Negotiation of Stop Notices.** County shall have the right to directly discuss, negotiate, settle or pay, without notice to or participation by Contractor, any stop notice claims asserted by the Subcontractors, of any Tier, and to deduct such sums paid from sums due to Contractor.

**9.7.6 Release of Stop Notices.** With the exception of that portion, and only that portion, of a stop notice or other claim that arises as a result of a failure by the County to make payment to Contractor under circumstances constituting a breach of the Construction Contract by County, if any stop notice or other claim, whether invalid or valid, is filed with, served upon or made or asserted against the County or the Site by any Subcontractor, of any Tier, or their agent or employee, for money claimed due, then Contractor shall within five (5) Days after written notice by the County procure, furnish and record appropriate releases or other instruments which under Applicable Laws will fully release, extinguish and remove such stop notice or claim, as well as any notices of pending action or other notices recorded against the Site in connection with the enforcement thereof. All costs of such actions by Contractor shall be paid for by Contractor at Contractor's Own Expense. Unless and until fully released as aforesaid, the County shall have the right to retain from any payment then due, or thereafter to become due, to Contractor an amount equal to one hundred and fifty percent (150%) of the amount necessary to satisfy, discharge and defend against any such stop notice or claim and any action or proceeding thereon, including, without limitation, an amount for anticipated attorney's fees and costs. If the amount to be paid, or the amount retained, is insufficient to satisfy, discharge and defend against any such stop notice or claim and any action or proceeding thereon, then Contractor shall be liable for the difference and upon demand shall immediately deposit the same with the County. The provisions of this Paragraph 9.7.6 are in addition to such other rights as the County may have against Contractor under the Contract Documents or Applicable Laws.

**9.7.7 No County Obligation.** Neither County nor Architect shall have any obligation to pay or to see to the payment of money to any of the Subcontractors except as may otherwise be required by Applicable Laws.

## 9.8 FAILURE OF PAYMENT

If, through no fault of Contractor or failure by Contractor to comply with its obligations under the Contract Documents either: (1) approval or disapproval by County of an Application for Payment properly prepared and submitted by Contractor and requesting payment that is otherwise undisputed by County is not issued within the time period required therefor by the terms of this Article 9; or (2) the County does not (a) upon an Application for Payment properly prepared and submitted by Contractor pay to Contractor, within the time period required for payment by County, an undisputed amount approved by County as earned, which approval has not been, and is not thereafter, nullified by County, or (b) pay to Contractor an amount that has been awarded by arbitration or judgment of a court of competent jurisdiction, then Contractor may, following delivery to County of a written "10-day stop work order", stop the Work until, as applicable, an approval or disapproval by County, or payment by County, is received by Contractor. Promptly upon receipt of such approval or disapproval, or payment, as applicable, Contractor shall resume the Work. Any resulting Delay associated with the shut down and start up of the Work as a result of Contractor's proper exercise of its right to stop work under this Section 9.8 shall constitute a Compensable Delay.

## 9.9 SUBSTITUTION OF SECURITIES FOR RETENTION

**9.9.1 Public Contract Code.** Pursuant to the requirements of California Public Contract Code §22300, upon the Contractor's request, the County will make payment to the Contractor of any funds withheld from payments to ensure performance under the Contract Documents if the Contractor deposits with the County, or in escrow with a California or federally chartered bank in California acceptable to the County ("Escrow Agent"), securities eligible for the investment of State Funds under Government Code §16430, or bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the County, upon the following conditions:

.1 The Contractor shall be the beneficial owner of any securities substituted for monies withheld for the purpose of receiving any interest on such securities.

.2 All expenses relating to the substitution of securities under said §22300 and under this Section 9.9, including, but not limited to the County's overhead and administrative expenses and expenses of Escrow Agent, shall be the responsibility of the Contractor.

.3 Securities or certificates of deposit substituted for monies withheld shall be of a value of at least equivalent to the amounts of the retention to be paid to the Contractor pursuant to the Contract Documents.

.4 If the Contractor shall choose to deposit securities in lieu of monies withheld with an Escrow Agent, the Contractor, the County and Escrow Agent shall, as a prerequisite to such deposit, enter into an escrow agreement. Such escrow agreement shall be substantially in the form "Escrow Agreement for Security Deposits in Lieu of Retention" set forth in California Public Contract Code §22300(f).

.5 The Contractor shall obtain the written consent of Surety to such agreement.

.6 Securities, if any, shall be returned to the Contractor only upon satisfactory Final Completion of the Work.

**9.9.2 Substitute Security.** To minimize the expense caused by such substitution of securities, the Contractor shall, prior to or at the time the Contractor requests to substitute security, deposit sufficient security to cover the entire amount to be withheld. Should the current market value of such substituted security at any time fall below the amount for which it was substituted, or any other amount which the County withholds pursuant to the Contract Documents, the Contractor shall immediately and at the Contractor's Own Expense deposit additional security qualifying under said §22300 until the current market value of the total security deposited is no less than the amount subject to withholding under the Contract Documents. Securities shall be valued as often as conditions of the securities market warrant, but in no case less frequently than once per month.

**9.9.3 Deposit of Retentions.** Alternatively, subject to the conditions set forth in Paragraph 9.9.1, above, upon request of the Contractor, the County shall make payment of retentions directly to Escrow Agent at the expense of the Contractor, provided that the Contractor, the County and Escrow Agent shall, as a prerequisite to such



payment, enter into an escrow agreement in the same form as prescribed in Subparagraph 9.9.1.4, above. At the Contractor's Own Expense, the Contractor may direct the investment of the payments into securities and interest bearing accounts and the Contractor shall receive the interest earned on the investments. Escrow Agent shall hold such direct payments by the County under the same terms provided herein for securities deposited by the Contractor. Upon satisfactory Final Completion of the Work, the Contractor shall receive from Escrow Agent all securities, interest and payments received by Escrow Agent from the County, less escrow fees and charges of the Escrow Account, according to the terms of said §22300 and the Contract Documents.

## 9.10 FINAL PAYMENT

9.10.1 **Payment by County.** Subject to the County's right of withholding as set forth in Section 9.6, above, or elsewhere in the Contract Documents, Final Payment shall be made by County not more than sixty (60) Days after completion of the Work as defined in Clauses (1), (2), (3) or (4) of California Public Contract Code § 7107(c), whichever definition is earliest satisfied.

9.10.2 **Application for Final Payment.** Upon issuance by County of the Notice of Final Completion pursuant to Paragraph 9.13.5, below, Contractor shall submit to County its Application for Payment requesting Final Payment.

9.10.3 **Review by County.** County will review and approve or disapprove of the Application for Payment requesting Final Payment as provided in Section 9.5, above.

9.10.4 **Conditions to Final Payment.** Without limitation to any other conditions to payment set forth elsewhere in the Contract Documents, the following shall be conditions to a proper submission, and to County's approval, of Contractor's Application for Payment requesting Final Payment:

- .1 submission of Contractor certification as required by Paragraph 9.2.10, above;
- .2 submission of consent of Surety, if any, to Final Payment;
- .3 submission of a certificate evidencing that the insurance required by the Contract Documents is in force;
- .4 submission of conditional releases and waivers of stop notice and bond rights upon final payment in the form required by California Civil Code §3262(d)(3) executed by Contractor and by all the Subcontractors, of every Tier;
- .5 submission of all Close-Out Documents (including, without limitation, complete, accurate Record Drawings and Specifications certified by Contractor as required by Paragraph 3.10.1, above);
- .6 timely submission of adequate and complete certified payroll records for any time period that Work was performed, which have not been submitted by Contractor in connection with its previous Applications for Payment;
- .7 proper payment of prevailing wages as defined in California Labor Code §§1720, et seq.;
- .8 submission of certifications by Contractor and each Subcontractor, as required by any applicable collective bargaining agreement or trust agreement or Applicable Laws, certifying that all employee benefit contributions due and owing have been paid in full; and
- .9 submission of any other documents or information required by the Contract Documents as a condition of Final Payment or Final Completion.

9.10.5 **Disputed Amounts.** Pursuant to California Public Contract Code § 7107, County may deduct and withhold from Final Payment an amount of up to one hundred fifty percent (150%) of any disputed amounts, including,

without limitation, amounts to protect County against any Loss caused or threatened as a result of Contractor's failing to fully satisfy the conditions of Final Completion and Final Payment.

**9.10.6 No Waiver by County.** The making of Final Payment by County shall not constitute a waiver by County of any rights or claims, including, without limitation, any right or claim for reimbursement of Allowable Costs or Allowable Markup paid to Contractor that is determined by County, either before or after Final Payment, to have been not due to Contractor.

#### **9.10.7 WAIVER BY CONTRACTOR.**

**ACCEPTANCE OF FINAL PAYMENT BY CONTRACTOR OR A SUBCONTRACTOR SHALL CONSTITUTE A WAIVER OF ALL RIGHTS BY THAT PAYEE AGAINST COUNTY FOR RECOVERY OF ANY LOSS, EXCEPTING ONLY THOSE CLAIMS THAT HAVE BEEN SUBMITTED BY CONTRACTOR IN THE MANNER REQUIRED BY SECTION 4.3, ABOVE, PRIOR TO, OR AT THE TIME OF CONTRACTOR'S SUBMISSION TO COUNTY OF, ITS APPLICATION FOR PAYMENT REQUESTING FINAL PAYMENT.**

#### **9.11 SUBSTANTIAL COMPLETION**

**9.11.1 Contract Time.** Contractor shall achieve Substantial Completion of the Work, or such portion of the Work as may be designated at any time by County for separate delivery, in accordance with the requirements of the Contract Time and other provisions of the Contract Documents.

**9.11.2 Request for Inspection.** Contractor shall notify the County when Contractor believes that the Work, or portion thereof designated by the County in the Contract Documents or otherwise for separate delivery, is Substantially Complete.

**9.11.3 Substantial Completion Inspection.** When Contractor gives notice to County that it has achieved Substantial Completion of the Work, or a County designated portion thereof, unless the County determines that the Work or County designated portion thereof is not sufficiently complete to warrant an inspection to determine Substantial Completion, County, Inspector of Record, Architect and such others as may be designated by County will inspect the Work, or such County designated portion thereof.

**9.11.4 Substantial Completion Punch List.** At the conclusion of such inspection, County shall prepare and give to Contractor (or, Owner may request that Contractor prepare and provide to County) a Substantial Completion Punch List of items, if any, to be completed or corrected for Substantial Completion. If Contractor disputes any of the items included, it shall so note its objection on the Substantial Completion Punch List. Contractor shall proceed within forty-eight (48) hours after preparation of the Substantial Completion Punch List to commence correction or completion of the items on the Substantial Completion Punch List, including, without limitation, any disputed items, and all such items of Work shall be completed promptly by Contractor before the Work will be considered as Substantially Complete. Failure by County, Architect, Inspector of Record or Contractor to include an item on the Substantial Completion Punch List does not alter the responsibility of Contractor to perform the Work in accordance with the Contract Documents. Items of Work necessary for Substantial Completion that, for any reason, have been omitted from the Substantial Completion Punch List shall be added to the Substantial Completion Punch List and Contractor shall, at the request of County, Architect or Inspector of Record made at any time prior to Final Payment commence correction or completion of such items within forty-eight (48) hours and all such items of Work shall be completed by Contractor promptly and before the Work will be considered as Substantially Complete.

**9.11.5 Re-Inspection.** Contractor shall notify County when the items of Work shown on the Substantial Completion Punch List are completed. County, Inspector of Record, Architect and such others as County deems necessary or appropriate will then make a further inspection to determine whether such Work is Substantially Complete. If such inspection, or any subsequent re-inspection required pursuant hereto, discloses any item, whether or not included on the Substantial Completion Punch List, which must be completed or corrected before Substantial Completion, Contractor shall, as a condition of Substantial Completion, complete or correct such item, which shall then be re-inspected to confirm that such Work is Substantially Complete. Contractor shall reimburse County, or County may at its option withhold from Contractor's payments, amounts incurred by County to the Inspector of Record, Architect, County Consultants or others whose services, for reasons within the control or responsibility of

Contractor or the Subcontractors, are necessary for more than two (2) such re-inspections to determine Substantial Completion.

**9.11.6 Notice of Substantial Completion.** When County determines that the Work, or such designated portion thereof, is Substantially Complete, County will prepare a Notice of Substantial Completion on the County's form, which shall state the date of Substantial Completion. If the Notice of Substantial Completion is for the entire Work, then the County will attach to it the Final Completion Punch List prepared in accordance with Paragraph 9.13.2, below. Regardless of the date the Notice of Substantial Completion is issued, Substantial Completion shall be deemed to have occurred on the date stated in the Notice of Substantial Completion.

## **9.12 PARTIAL OCCUPANCY OR USE**

County reserves the right to beneficially occupy all or any portion of the Work at any time before Substantial Completion of the entire Work. Beneficial occupancy means that County has assumed physical occupancy and use of all or such portion of the Work. Commencement of improvements or other work by Separate Contractors in order to ready the Work for use or occupancy by County shall be unconditionally permitted in all cases prior to Substantial Completion and shall not constitute a taking of beneficial occupancy by County. Exercise by County in accordance with the provisions of this Section 9.12 of its right to take beneficial occupancy shall not constitute grounds for a Contract Adjustment. The County's right of beneficial occupancy of all or a portion of the Work prior to Substantial Completion shall be subject to the following conditions:

**9.12.1** County and such others as County deems necessary will make an inspection of the portion of the Work to be beneficially occupied and prepare a list of items to be completed or corrected in the same manner as required by and subject to the same conditions as set forth in Section 9.11, above.

**9.12.2** Beneficial occupancy by County shall not be construed as Acceptance of that portion of the Work which is to be occupied.

**9.12.3** Except as otherwise provided in this Section 9.12, beneficial occupancy by County shall not constitute a waiver of rights of the County against Contractor. Notwithstanding anything stated in this Section 9.12 or elsewhere in the Contract Documents to the contrary, beneficial occupancy by County shall not constitute a waiver of rights of County relating to Defective Work in the area beneficially occupied or in any other portion of the Work.

**9.12.4** Prior to the County's taking beneficial occupancy, Contractor shall submit to County an itemized list of each piece of equipment located in or serving the area to be occupied stating the date operation of such piece of equipment commenced, together with operating instructions, manuals and other information required by the Contract Documents. Contractor shall provide, in the areas beneficially occupied, on a continual basis, utility services, elevator service, and heating and cooling systems in operable condition commencing at the time of beneficial occupancy and until Final Completion of the entire Work. County shall be responsible, from and after taking occupancy, for utility consumption, regular operation and regular maintenance of such systems or equipment.

**9.12.5** County shall pay all normal operating and maintenance costs resulting from its use of equipment in areas beneficially occupied.

**9.12.6** County shall pay all utility costs that arise out of its beneficial occupancy.

**9.12.7** Contractor shall not be responsible for providing security in areas beneficially occupied.

**9.12.8** County shall use its best efforts to prevent its beneficial occupancy from interfering with the conduct of Contractor's remaining Work.

**9.12.9** Contractor shall not be required to repair damage caused solely by County's beneficial occupancy.

**9.12.10** Contractor shall continue to maintain all insurance required by the Contract Documents in full force and effect.

## 9.13 FINAL COMPLETION

9.13.1 **Contract Time.** Contractor shall expeditiously and diligently perform the Work after Substantial Completion, including, without limitation, all items of Work on the Final Completion Punch List that accompanies the Notice of Substantial Completion, so as to achieve Final Completion within the requirements of the Contract Time for Final Completion.

9.13.2 **Final Completion Punch List.** Contractor shall prepare and submit to County at the time that Contractor requests inspection for Substantial Completion of the entire Work pursuant to Paragraph 9.11.2, above, a draft proposed Final Completion Punch List of items of Work that will be required to be completed or corrected for Final Completion. Items identified in the course of any inspection for Substantial Completion that are required to Finally Complete the Work following Substantial Completion shall be added to the proposed Final Completion Punch List and the revised Final Completion Punch List attached to the Notice of Substantial Completion. If Contractor disputes any of the items included, it shall so note its objection on the Final Completion Punch List. When Contractor considers the Final Completion Punch List to be complete, it shall promptly sign and deliver the Final Completion Punch List to the County. Failure by County, Architect, Inspector of Record or Contractor to include an item on the Final Completion Punch List does not alter the responsibility of Contractor to perform the Work in accordance with the Contract Documents. Items of Work necessary for Final Completion that, for any reason, have been omitted from the Final Completion Punch List shall be added to the Final Completion Punch List upon request by the County made at any time prior to Final Payment and completion of such items shall be made promptly and before the Work will be considered Finally Complete.

9.13.3 **Performance of Punch List.** Contractor shall proceed promptly and in accordance with the Contract Time to correct and complete the items on the Final Completion Punch List, including, without limitation, any disputed items, and all such items of Work shall be completed by Contractor before the Work will be considered as Finally Complete.

9.13.4 **Request for Final Inspection.** Contractor shall notify County when Contractor believes that the Work is Finally Complete. County, Inspector of Record, Architect and such others as County deems necessary or appropriate will then make a further inspection to determine whether such Work is Finally Complete. If such inspection, or any subsequent re-inspection required pursuant hereto, discloses any item, whether or not included on the Final Completion Punch List, which must be completed or corrected before Final Completion, Contractor shall, as a condition of Final Completion, complete or correct such item, which shall then be re-inspected to confirm that such Work is Finally Completed. Contractor shall reimburse County, or County may at its option withhold from Contractor's payments, amounts incurred by County to the Inspector of Record, Architect, County Consultants or others whose services, for reasons within the control or responsibility of Contractor or the Subcontractors, are necessary for more than two (2) inspections to determine Final Completion.

9.13.5 **Notice of Final Completion.** When County determines that the Work is Finally Complete, County will prepare a Notice of Final Completion on the County's form, which shall state the date of Final Completion. Regardless of the date the Notice of Final Completion is issued, Final Completion shall be deemed to have occurred on the date stated in the Notice of Final Completion.

9.13.6 **Acceptance by County.** Acceptance may be exercised by County, in its sole and absolute discretion, either after Final Completion or, without waiving or releasing Contractor from any of its obligations under the Contract Documents, at any time after Substantial Completion and prior to Final Completion.

9.13.7 **Notice of Completion.** In addition to issuance of the Notice of Substantial Completion and Notice of Final Completion, County shall have the right, exercised in its sole and absolute discretion, to record a Notice of Completion pursuant to California Civil Code §3093.

9.13.8 **No Waiver by County.** No inspections conducted pursuant to this Article 9 nor any approvals or certificates issued by County, Architect or Inspector of Record shall be deemed to be a waiver or limitation on County's right to insist on Final Completion and full performance of all other conditions to Final Payment under the Contract Documents prior to issuance of Final Payment to Contractor.

**ARTICLE 10**  
**INSPECTIONS, SAFETY AND HAZARDOUS SUBSTANCES**

**10.1 INSPECTIONS**

**10.1.1 General.** One or more Inspectors of Record, including special inspectors as required, may be employed by County and assigned to the Work. The fees of Inspectors of Record shall be directly paid for by County. IF INSPECTORS OR RECORD ARE ASSIGNED TO THE WORK, THEN NO WORK SHALL BE CARRIED ON EXCEPT UNDER THE INSPECTION, AND WITH THE KNOWLEDGE, OF THE APPROPRIATE INSPECTOR(S) OF RECORD, and Contractor shall be responsible, at Contractor's Own Expense, to remove and replace any Work performed without such inspection by the appropriate Inspector of Record.

**10.1.2 Coordination.** Contractor shall schedule, arrange, and coordinate its activities with the activities of the County, Inspectors of Record, Architect, County Consultants and others designated by County to inspect or observe the Work. When, in order to comply with the intent of the Contract Documents, inspection or observation must be made at the plant or mill of the manufacturer or fabricator of material or equipment, Contractor shall notify the County, as well as any other persons identified by County as assigned by it to inspect or observe the Work, a sufficient length of time in advance to allow for arrangements to be made for such inspection or observation.

**10.1.3 Uncovering of Work.** County or an Inspector of Record shall have the right to request that any portion of the Work be uncovered by Contractor for inspection. Except as otherwise provided in Paragraph 10.1.1, above, if such Work is found to be in accordance with the Contract Documents, then all of the additional costs incurred in uncovering, replacing and re-covering the Work shall constitute grounds for Contractor, upon proper notice and request pursuant to Article 7, above, to receive a Contract Adjustment for Compensable Change and if such uncovering, replacing and re-covering of the Work causes a Delay, such Delay shall constitute grounds for Contractor, upon proper and timely notice and request pursuant to Article 8, above, to receive a Contract Adjustment for Compensable Delay. If such Work is not in accordance with the Contract Documents, then such costs of uncovering, replacing and re-covering shall be paid for by Contractor at Contractor's Own Expense and any resulting Delay shall be consider an Unexcused Delay.

**10.1.4 Off-Hours Inspections.** Contractor shall request approval by County before arranging any inspections either: (1) before 7:00 am or after 3:00 pm on Monday through Friday, or (2) on any Saturday, Sunday, holiday or any other time when Work is not usually in progress. Such request shall be delivered to County at least two (2) working days in advance of the inspection being performed. Approval or disapproval of such request is in the sole and absolute discretion of County. Except where such off-hours inspections are due to a breach by County of an obligation under the Contract Documents, the additional cost (over and above that which would be required for inspections during regular business hours) to County of the inspection shall be paid for by Contractor at Contractor's Own Expense.

**10.1.5 Access to the Work.** Contractor shall make available for use by County, Inspectors of Record, Architect, County Consultants and others assigned to inspect or observe the Work, any equipment (wheelbarrow, shovel, ladder, man-lift, etc.) that is available or in use on Site, and is required to assist in such inspections or observations.

**10.1.6 Right to Stop Work.** County shall have the right, but not the obligation, to order Contractor to stop performance of Work. Inspectors of Record shall, only if and to the extent permitted by Applicable Laws or if they are given written authority to do so by County, have the authority, but not the obligation, to stop the Work whenever provisions of Contract Documents are not being complied with, or the conduct of the Work poses a probable risk of harm to persons or property.

**10.1.7 No County Duty.** No authority of the County, Inspectors of Record, Architect, County Consultants or others designated by County to inspect the Work that is conferred by the Contract Documents nor any decision made by any of them in good faith either to exercise or not exercise such authority, nor any recommendation by any of them, shall give rise to a duty or responsibility on the part of any of them to Contractor or to the Subcontractors, of any Tier.

**10.1.8 Contractor Responsibility.** Inspections or observations by the County, Inspectors of Record, County Consultants or others shall not in any way relieve Contractor from its sole responsibility for full compliance with all of the terms and conditions of the Contract Documents, nor be construed to lessen, to any degree, Contractor's responsibility for providing efficient and capable superintendence as required herein or for incorporating into the Work only those items of the Work that conform to the Contract Documents.

**10.1.9 Reimbursement to County.** Without limitation to any other provisions of the Contract Documents, Contractor shall reimburse the County at Contractor's Own Expense, or County shall have the right, at its option, to withhold from payments due to Contractor, costs of inspections, observations or testing and other Losses that are incurred for any of the following reasons: (1) Contractor has failed to execute the Work in accordance with the Contract Documents; (2) materials or equipment have been substituted by Contractor, without prior approval by the County and Architect; (3) Defective Work; or (4) to conduct load testing of certain portions of the structure that have not fully met the requirements of the Contract Documents.

## **10.2 SAFETY PRECAUTIONS AND PROGRAMS**

**10.2.1 General Safety Obligation.** Contractor shall, notwithstanding the activities of others (such as, but not limited to, the County, Architect, Inspectors of Record, County Consultants or others designated by County to prepare safety recommendations or inspect or observe the Work), be solely responsible, on a twenty-four (24) hours a Day, seven (7) Days a week basis, for initiating, maintaining and supervising all safety precautions and programs on the Site in connection with the preparation, performance, observation or inspection of the Work, including all necessary precautions to protect and safeguard all persons and property from loss, injury, death or damage resulting, directly or indirectly, from the activities of Contractor or the Subcontractors, including, without limitation, all of the following:

- .1 persons in and around the Site, as well as their personal property and vehicles;
- .2 the Work, materials and equipment to be incorporated therein under care, custody or control of Contractor or the Subcontractors, of any Tier, whether in storage on or off the Site, including, without limitation, the provision of temperature control, covering and enclosures necessary to prevent Loss due to adverse weather conditions;
- .3 other property at the Site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, curbs, roadways, structures (including, without limitation, protection from settlement or loss of lateral support) and utilities not designated for removal, relocation or replacement in the course of construction; and
- .4 construction and operations by the County, Architect and Inspectors of Record.

**10.2.2 Contractor's Safety Program.** Prior to starting the Work, Contractor shall prepare and submit to County a Safety Program, which shall comply with the requirements of the Contract Documents and shall include, at a minimum, guidelines, requirements and procedures for the following: safety management policy; emergency response plan; illness and injury prevention procedures; safety meetings; accident investigation; basic accident causes; safety inspection checklist; fire prevention and control; report forms; and employee safety manual and procedures for achieving compliance with safety requirements of insurers. A copy of the Safety Program shall be maintained on Site at all times and provided to the County upon request. Contractor is solely responsible for monitoring activities at the Site for compliance with the Safety Program and for the enforcement thereof.

**10.2.3 Safety Orders.** Contractor shall comply with all Applicable Laws, including, without limitation, all safety laws, standards, orders, rules, regulations and building codes, to prevent accidents or injury to persons on, about or adjacent to the Site and to provide a safe and healthful place of employment. Contractor shall, at Contractor's Own Expense, correct any violations of Applicable Laws occurring or threatened by conditions on the Site.

**10.2.4 Safety Representative.** Contractor shall designate a responsible member of its organization on the Site, who meets the qualification and competency requirements of Applicable Laws and whose sole duty shall be giving safety instructions, prevention of accidents and overall job site safety (including, without limitation, posting of information and other notices regarding safety that are required under occupational safety and health laws and

compliance with reporting and other occupational safety requirements pertaining to the protection of the life, safety and health of the workers). The name of the person so designated shall be reported to the County by Contractor prior to the commencement of any Work on the Site.

**10.2.5 Protection.** Contractor shall take reasonable precautions to protect the Work and all building materials, equipment, temporary field offices, storage sheds, and other public and private real and personal property that might be affected, directly or indirectly, by Contractor's activities associated with performance of the Work, and shall make good, at Contractor's Own Expense, all Loss due to failure to provide such reasonable precautions.

**10.2.6 Safeguards, Disabled Access.** Contractor shall erect and maintain, as required by existing conditions and performance of the Work, all necessary safeguards for safety and protection, including, without limitation, safety devices, belts, nets, barriers, safety rails, canopies, danger signs, fire protection, no smoking prohibitions, warnings against hazards, safety regulations postings and notifications to owners and users of adjacent sites and utilities, and shall, as required by Applicable Laws, make provision for access for, and provide assistive devices to, persons with disabilities, including, without limitation, providing safe pathways of travel around areas where construction is being performed so that occupants, visitors, the public and others on the Site with disabilities are afforded reasonably direct and barrier-free access to areas of the Site and Existing Improvements.

**10.2.7 Fire, Explosives, Hazardous Substances.** Contractor shall take all necessary precautions to guard against and eliminate possible fire hazards. Explosives may be used or stored only when authorized in writing by the County. Explosives shall be handled, used and stored in accordance with Applicable Laws. When use or storage of explosives or other Hazardous Substances or methods of construction involving use of dangerous materials or equipment are necessary for execution of the Work, Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

**10.2.8 First Aid.** Contractor shall maintain emergency first aid treatment for all workers and other persons on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C.A. §§651 et seq.) and all other Applicable Laws.

**10.2.9 Unsafe Conditions.** Contractor shall immediately correct any condition that exists on the Site, or that County, in its reasonable judgment, determines to exist on the Site, that is unsafe or potentially unsafe to persons or property.

**10.2.10 Responsibility for Loss.** Contractor shall promptly remedy Loss to any property or person caused in whole or in part by the failure of Contractor, the Subcontractors, of any Tier, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable to fully comply with the requirements of this Article 10, except Loss attributable solely to the negligent acts or omissions of the County, Inspectors of Record, Architect, County Consultants or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable, in whole or in part, to the negligence, willful misconduct or violation of Applicable Laws by Contractor or a Subcontractor, of any Tier, or the failure by Contractor to comply with the Contract Documents. The foregoing obligations of Contractor are in addition to and not a limitation upon Contractor's indemnity obligations under Section 3.18, above.

**10.2.11 Loading, Storage.** Contractor shall be responsible for coordinating the storage and staging of materials and equipment on-Site and off-Site and shall not load or store or permit any part of the Work or the Site to be loaded or stored so as to endanger the safety of persons or risk loss or damage to property.

**10.2.12 Emergency.**

**.1 Contractor Responsibility.** In an emergency involving safety or protection of persons or property, Contractor shall act immediately, either at County's direction or as otherwise necessary under the circumstances, to prevent any Loss. In such cases, Contractor shall immediately notify County, which notice may be oral, followed within twenty-four (24) hours after occurrence of the incident by written confirmation of the occurrence of such emergency and Contractor's action in response thereto.

**.2 County Action.** If, in the sole discretion of County, the condition is immediately threatening life or property, County may, with or without notice to Contractor, take whatever immediate action is necessary to

correct the life-threatening condition, and the costs thereof, including, without limitation, any fees or costs of Architect, Inspectors of Record, County Consultants or others to whom County may be liable, shall be borne by Contractor at the Contractor's Own Expense.

**10.2.13 No County Responsibility.** Nothing set forth in this Section 10.2 or elsewhere in the Contract Documents shall be interpreted as an assumption of any responsibility on the part of County or other persons or entities other than the Contractor and the Subcontractors, to report such conditions to Contractor nor as relieving Contractor of any of its responsibilities under the Contract Documents.

**10.2.14 Separate Contractors.** With respect to work of a Separate Contractor being performed within an area of the Site that is under the responsibility or control of the Contractor, Contractor shall: (1) provide copies of the Safety Program to the Separate Contractors and advise the Separate Contractors of the areas of the Site to which the Safety Program applies and where compliance with the Safety Program is expected; (2) protect the Separate Contractors' work and workers from Loss due to the actions or inactions of Contractor and the Subcontractors; and (3) notify the Separate Contractor and County of any observed violation by the Separate Contractor of the Safety Program or of any violations by the Separate Contractor of Applicable Laws governing safety on the Site. Nothing herein shall be interpreted as relieving the Separate Contractors from their obligations to comply with the Contractor's Safety Program, as excusing any failure by a Separate Contractor from performing its obligations under its contracts with County or Applicable Laws or as obligating Contractor to directly supervise or enforce the obligations of the Separate Contractors to comply with the requirements of the Safety Program or Applicable Laws relating to safety.

### 10.3 HAZARDOUS SUBSTANCES, MOLD

#### 10.3.1 Hazardous Substances.

##### .1 On Site Conditions.

**(1) Existing Conditions.** In the event Contractor or its Subcontractors encounter materials existing or otherwise present at the Site that are reasonably believed to be Hazardous Substances that have not been rendered harmless, Contractor and Subcontractors shall, except in cases where the removal, encapsulation or abatement of such Hazardous Substances is indicated by the Contract Documents to be part of the Work to be performed by Contractor, immediately stop Work in the area affected and report the condition to County in writing. Contractor and Subcontractors shall continue Work in unaffected areas reasonably believed safe. County shall then promptly arrange for the sampling, testing and profiling of such suspected Hazardous Substances to confirm the nature, quantity or concentration thereof. In the event that such suspected Hazardous Substances are determined not to be Hazardous Substances or to be Hazardous Substances but not of sufficient nature, quantity or concentration to trigger handling and manifesting of the same as a hazardous waste upon disturbance and removal, then Contractor and its Subcontractors shall, without any Contract Adjustment, be obligated to resume the portion of the Work that was suspended and shall proceed to handle and dispose of such materials pursuant to the Contract Documents, taking all reasonable precautions that are applicable under the circumstances. If, alternatively, the suspected Hazardous Substances are determined to be Hazardous Substances of sufficient nature, quantity or concentration to trigger handling and manifesting of the same as hazardous waste upon disturbance and removal, the parties shall determine what, if any, action to take with respect to such Hazardous Substances, whether to resume Work with respect to such Hazardous Substances, taking all reasonable precautions that are applicable under the circumstances, and what, if any, Contract Adjustment is appropriate and mutually agreed in order to account for any increased cost of, or Delay in connection with, handling or disposal of Hazardous Substances not already contemplated and provided for in the Contract Documents.

**(2) Contractor Release.** Contractor and its Subcontractors shall not cause the discharge, release, emission, spill, storage, treatment or disposal of any Hazardous Substance on or adjacent to the Site, except as required and permitted by the Contract Documents and Applicable Laws in connection with Contractor's performance of an obligation to remove Hazardous Substances as part of the Work agreed to be performed under the Contract Documents or as otherwise required under the provisions of this Subparagraph 10.3.1.1. Should Contractor or its Subcontractors discharge, release, emit, spill, treat, store or dispose of any Hazardous Substance on the Site in violation of the foregoing obligation or otherwise in violation of Applicable Laws, Contractor shall at Contractor's Own Expense and without limitation to County's other rights or remedies for default immediately (a) inform County in writing of such event, (b) advise County with respect to any release reporting or



notification requirement that may apply as a result of such event, (c) assist County in complying with any such reporting or notification requirement as determined by County, and (d) perform any investigation, remediation, removal or other response that is necessary or desirable in order to abate or clean up the condition resulting from such event to the full satisfaction of County and any applicable Governmental Authority. Such Hazardous Substances shall be removed and properly disposed of as soon as they can be accepted at an appropriate disposal facility, and in no event later than sixty (60) Days after such waste is generated, unless a longer time is approved by County.

## **.2 Remediation by Contractor.**

(1) **Application.** The provisions of this Paragraph 10.3.1.2 shall apply only if the Work to be performed by Contractor includes within its scope the removal, abatement, moving, handling, containment, disposal or transport of Hazardous Substances

(2) **Advance Submissions to County.** Before Contractor or any of its Subcontractors moves, removes, or transports Hazardous Substances to a facility for the receipt, treatment, storage or disposal of the Hazardous Substances ("Hazardous Substances Facility"), Contractor shall cause the person or entity who will be moving, removing or transporting the Hazardous Substances to provide to County the following: (a) verification of the Hazardous Substance Facility's or other transporter's licensed status to haul such materials; (b) verification of the Hazardous Substance Facility's licensed status, including a current permit to receive the specific materials to be transported there; (c) certification that the Hazardous Substance Facility is not under enforcement action by the U.S. Environmental Protection Agency ("EPA") or applicable State Governmental Authority or listed on any applicable EPA or applicable State Government Authority list of violating facilities; (d) verification of the Hazardous Substances Facility's EPA Identification Number (if applicable); and (e) original executed letter(s) of indemnity from the Hazardous Substances Facility bearing the Hazardous Substance Facility's letterhead. Contractor further warrants that the selected Hazardous Substance Facility is appropriately licensed and permitted to store, treat and dispose of Hazardous Substances waste in connection with the Work.

(3) **Contractor Responsibility.** Contractor warrants that it is aware of and understands the hazards which are presented to persons, property and the environment in performance of the transportation, storage and disposal of the Hazardous Substances described in the Contract Documents. Contractor and its Subcontractors and agents shall be responsible for the following: (a) processing the application for, and receiving on behalf of the County or appropriate entity, an EPA or state-equivalent generator identification number (if required); (b) preparing manifests and other shipping documents; (c) making all necessary arrangements (after consultation with County) for any off-Site transportation, treatment, storage and disposal of such Hazardous Substances in accordance with Applicable Laws; (d) ensuring the proper and lawful transportation and disposal of such Hazardous Substances, even if such services are performed by other entities under contract with Contractor or its Subcontractors; and (e) taking any necessary actions to ensure such proper transport and disposal in the event of any contingency, such as the rejection of the Hazardous Substances as nonconforming by any waste disposal facility. Contractor shall promptly provide to County copies of all manifests and other shipping documents confirming the receipt and proper disposal of all Hazardous Substances at the Hazardous Substances Facility, even if such services are performed by other entities under contract with Contractor or its Subcontractors.

(4) **Reporting Requirements.** Contractor shall comply with any Hazardous Substances release reporting requirements to Governmental Authorities directly applicable to Contractor. Notice of such reporting must be provided in advance to County or concurrently in the event of an emergency.

(5) **Samples.** Contractor and its Subcontractors shall retain all media samples for the longer of (a) the longest holding period specified in any federal, state or local laboratory analytical procedures or guidance for the analyses performed; or (b) three months for soil samples and thirty (30) Days for water samples. Further storage or transfer of samples will be made at County's expense upon County's written request of Contractor. Contractor shall require by contract that each and every Subcontractor and agent of Contractor or a Subcontractor who performs testing of samples in connection with the Work properly disposes of such samples in accordance with Applicable Laws after completion of testing and notice to County. Regarding any such samples which may remain on-Site, provided County has approved of such on-Site storage in advance, County agrees to pay all costs associated with the storage, transport, and disposal of such samples.

(6) **Verification.** Upon Final Completion of the Work, Contractor shall confirm to County in writing that: (a) all Hazardous Substances specified for removal in the Contract Documents have been removed; and (b) all Hazardous Substances wastes removed from the Site as part of the Work have been disposed of in accordance with this Subparagraph 10.3.1.2 and Applicable Laws in a Hazardous Substances Facility.

10.3.2 **Mold.** Contractor is responsible to immediately notify County in writing if any conditions in the construction materials incorporated or to be incorporated into the Work or present in Existing Improvements are encountered at the Site that Contractor or any Subcontractor knows or, in the exercise of due care of a Contractor and not that of a consultant with special or technical expertise in the subject of Mold, should know indicate the presence of Mold or if untreated are likely to result in the growth of Mold. Contractor shall thereafter take such precautions as are reasonably required to prevent the exposure of persons to such conditions until they have been evaluated. Except as otherwise authorized by the Contract Documents or as are usual and customary according to prevailing standards of the construction industry in the vicinity of the Project, Contractor shall not allow water or moisture to come into contact with materials in Existing Improvements or with materials located at the Site that are incorporated or to be incorporated into the Work and if such contact occurs, the areas affected shall be inspected by Contractor, using appropriate consultants experienced in testing and evaluating Mold, for the presence of Mold and evaluated for the potential of future growth of Mold. All portions thereof that are found to indicate the presence of Mold, or that are found to be in a condition that has the potential for becoming a source of Mold, shall be removed and replaced. Costs incurred by Contractor due to its failure to perform its obligation under this Paragraph 10.3.2 shall be borne by Contractor at Contractor's Own Expense.

10.3.3 **Release of County.** Contractor assumes the risk that its employees or the employees of its Subcontractors, and other persons that they cause or permit to be present on the Site, may be exposed to known or unknown Hazardous Substances or Mold. Under no circumstances shall County be liable for, and Contractor hereby fully and unconditionally releases County and the other Indemnitees from, and agrees to defend and indemnify County and the other Indemnitees on the terms set forth in Section 3.18, above, against, any and all known and unknown Losses resulting from or relating to the exposure of any employee of Contractor or its Subcontractors, or other person that they cause or permit to be present on the Site, to: (1) Hazardous Substances or Mold encountered in connection with or as a result of the performance of the Work, or (2) Hazardous Substances or Mold not necessarily encountered in connection with the performance of the Work, but to which any of them may nevertheless be exposed as a result of their being present on the Site.

10.3.4 **Communications with Governmental Authorities.** Contractor shall provide to County copies of all written communications with Governmental Authorities or others relating to Hazardous Substances or Mold (other than privileged communications); provided, however, that non-disclosure of privileged communications shall not limit Contractor's obligation to otherwise comply with the terms of the Contract Documents, including, without limitation, this Section 10.3.

10.3.5 **Subcontractors.** Contractor shall include provisions in all contracts it enters into with Subcontractors for the Work requiring them to assume toward Contractor and County the same obligations that Contractor assumes toward County under this Section 10.3. Contractor shall require the Subcontractors to ensure that such provisions are included in all contracts they enter into with all lower-Tier Subcontractors.

## ARTICLE 11 INSURANCE

### 11.1 INSURANCE

11.1.1 **Contractor's Insurance Requirements.** Without limiting or diminishing any of the Contractor's obligations to defend, indemnify or hold the County harmless as set forth elsewhere in the Contract Documents, Contractor shall procure and maintain or cause to be maintained throughout the performance of the Work and for the duration of any guarantee or warranty provided under the Contract Documents, at Contractor's Own Expense, the following insurance coverages:

.1 **Workers' Compensation.** If the Contractor has "employees", as defined by the State of California, the Contractor shall provide a policy of statutory Workers' Compensation Insurance (Coverage A) as prescribed by the laws of the State of California. Such policy shall include Employers' Liability (Coverage B) including

Occupational Disease with limits not less than \$1,000,000 per person per accident. Such policy shall be endorsed to waive subrogation in favor of the County and, if applicable, to provide a Borrowed Servant/Alternate Employer Endorsement. Pursuant to §3700 of the California Labor Code, Contractor shall file with the County before commencing the Work the following signed certification:

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

**.2 Commercial General Liability.** Contractor shall provide a policy of Commercial General Liability insurance coverage, including but not limited to, premises liability, contractual liability, products and completed operations liability, personal and advertising injury, and cross liability coverage, covering claims which may arise from or out of Contractor's performance of its obligations hereunder. Such policy shall name the County, its agencies, districts, special districts and departments, and their respective directors, officers, elected or appointed officials, agents, employees and representatives, including, without limitation, the members of the Board of Supervisors, and all other Indemnitees, as "additional insureds" and contain a waiver of subrogation in favor of the County and all other such additional insureds. Such policy's limit of liability shall not be less than \$1,000,000 per occurrence combined single limit. If such policy contains a general aggregate limit, it shall apply separately to the Construction Contract or be no less than two (2) times the occurrence limit.

**.3 Vehicle Liability.** If vehicles or mobile equipment are used in the performance of the Work or other obligations under the Contract Documents, then Contractor shall provide a policy of liability insurance coverage for all owned, non-owned or hired vehicles so used in an amount not less than \$1,000,000 per occurrence combined single limit. If such policy contains a general aggregate limit, it shall apply separately to the Construction Contract or be no less than two (2) times the occurrence limit. Such policy shall name the County, its agencies, districts, special districts and departments, and their respective directors, officers, elected or appointed officials, agents, employees and representatives, including, without limitation, the members of the Board of Supervisors, and all other Indemnitees, as "additional insureds" and contain a waiver of subrogation in favor of the County and all other such additional insureds.

**.4 Property (Physical Damage).** Contractor shall provide a policy of all-risk property insurance coverage for the full replacement value of all Contractor's equipment, improvements/alterations, temporary structures, and systems, including without limitation, items owned by others in the Contractor's care, custody or control, used on the Site or other County-owned property, or used in any way connected with the performance of the Work.

**.5 Builder's All Risk (Course of Construction) Insurance.** The Bid Form utilized by Contractor to prepare its Bid states whether the Contractor shall include Builder's All Risk (Course of Construction) Insurance for the Project. If the Bid Form states that such insurance shall be included by the Bidder in its Bid, then Contractor shall provide a policy of Builder's All Risk (Course of Construction) insurance coverage including (if the Work is located in an earthquake or flood zone or if required on financed or bond financing arrangements) coverage for earthquake and flood, covering the County, Contractor and every Subcontractor, of every Tier, for the entire Project, including property to be used in the construction of the Work while such property is at off-Site storage locations or while in transit or temporary off-Site storage. Such policy shall include, but not be limited to, coverage for fire, collapse, faulty workmanship, debris removal, expediting expense, fire department service charges, valuable papers and records, trees, grass, shrubbery and plants. If scaffolding, falsework and temporary buildings are insured separately by the Contractor or others, evidence of such separate coverage shall be provided to County prior to the start of the Work. Such policy shall be written on a completed value form. Such policy shall also provide coverage for temporary structures (on-Site offices, etc.), fixtures, machinery and equipment being installed as part of the Work. Contractor shall be responsible for any and all deductibles under such policy. Upon request by County, Contractor shall declare all terms, conditions, coverages and limits of such policy. NOTWITHSTANDING THE FOREGOING, COUNTY RETAINS THE RIGHT EXERCISED AT ANY TIME PRIOR TO AWARD TO ELECT TO USE ITS OWN BUILDER'S ALL RISK (COURSE OF CONSTRUCTION) INSURANCE and in the event County so elects to deduct the price for such insurance that is stated in Contractor's Bid, or if not so stated the amount included by Contractor for such insurance in the preparation of the Contractor's Bid, from the Contract Price by means of a Contract Adjustment

pursuant to Change Order or Unilateral Change Order. If the County so provides the All Risk (Course of Construction) insurance for the Project, then Contractor shall assume the cost of any and all applicable policy deductibles (currently, \$50,000 per occurrence) and shall insure its own machinery, equipment, tools, etc. from any loss of any nature whatsoever.

**11.1.2 Other Mandatory Insurance Requirements.** The Contractor shall comply with the following requirements, which shall be deemed applicable to all carriers and insurance policies provided pursuant to Paragraph 11.1.1, above:

**.1 Insurer Rating.** Any and all insurance carrier(s) providing insurance coverage under any and all policy(ies) of insurance provided by Contractor pursuant to Paragraph 11.1.1, above, shall be admitted to the State of California and have an A M BEST rating of not less than A: VIII (A:8) (unless such requirements are waived in writing by the County Risk Manager, and if the County's Risk Manager waives such requirement for a particular insurer such waiver is only valid for that specific insurer and only for one policy term);

**.2 Self Insured Retentions.** Contractor shall advise County in writing the dollar amount of any "self insured retention" maintained by the Contractor that exceeds \$500,000 per occurrence. Each such self insured retention must have the prior written consent of the County Risk Manager before the commencement of any Work or operations or activities relating to the Work. If Contractor is notified that a self insured retention is unacceptable to the County, then at the election of the County, exercised in the County's sole and absolute discretion, by means of the written approval of the County's Risk Manager, the insurance carriers affected shall either: (1) reduce or eliminate such self-insured retention as respects the Construction Contract; or (2) procure a bond, satisfactory to County and approved by County in writing, which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.

**.3 Evidence of Insurance.** Contractor shall cause Contractor's insurance carrier(s) to furnish to the County either: (1) properly executed original certificate(s) of insurance and certified original copy(ies) of endorsement(s) effecting the coverage(s) required by this Section 11.1, or (2) if requested to do so orally or in writing by the County Risk Manager, provide original, certified copy(ies) of policy(ies) including all endorsement(s) and all attachment(s) thereto, showing such insurance is in full force and effect. Such certificate(s) and all policies of insurance provided by Contractor pursuant to this Section 11.1 shall contain the covenant of the insurance carrier(s) that thirty (30) Days' written notice shall be given to the County prior to any material modification, cancellation, expiration or reduction in coverage of such insurance. Each certificate of insurance and endorsement shall be signed by an individual expressly authorized by the insurance carrier to do so on the carrier's behalf. Contractor shall, if requested, provide written proof of such authorization. ***Contractor shall not commence any Work or any activities or operations related to the performance of the Work unless and until Contractor has complied with all of the requirements of this Section 11.1.***

**.4 Modification, Cancellation, Changes in Limits.** A material modification, cancellation, expiration, or reduction in coverage, shall constitute an Event of Contractor Default for which County shall have right, without limitation to its other rights or remedies provided for in the Contract Documents or under Applicable Laws, to terminate this Construction Contract. Such Event of Contractor Default may only be deemed cured if the County receives, prior to the effective date of such material modification, cancellation, expiration or reduction in coverage, properly executed original certificate(s) of insurance and original, certified copy(ies) of policy(ies) and endorsement(s), including all attachment(s) thereto, evidencing that the coverage(s) required by this Section 11.1 is(are) and will continue, without any gap in coverage, in full force and effect in accordance with all of the requirements of this Section 11.1

**.5 Primary Coverage.** It is understood and agreed to by County and Contractor that the Contractor's insurance coverage(s) provided under this Section 11.1 shall be construed as primary insurance, and the County's insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory.

**.6 Additional Coverages.** County reserves the right to modify, adjust, add to and/or increase the types, amounts and terms of any insurance required under this Section 11.1 if the County Risk Manager determines, in the exercise of his/her sole and absolute discretion, that the type, amount or terms of the insurance required by this Section 11.1 has(have) become inadequate or that additional risk or exposure exists (such as, without

limitation, the use of aircraft, watercraft, cranes, etc.) due to: (1) a Change in the Work; (2) the period of time of Contractor's actual performance of the Work continuing for longer than five (5) years from the Date of Commencement, whether due to Contract Adjustment or for any for any other reason; or (3) other circumstances not reasonably foreseeable to County.

**.7 Subcontractors.** Contractor shall include provisions in its subcontracts requiring each Subcontractor to assume an obligation toward Contractor to furnish insurance that complies with all of the requirements of this Section 11.1 as apply to Contractor's insurance provided to Owner and requiring such Subcontractors to furthermore include provisions in their contracts with lower-Tier Subcontractors likewise requiring such lower Tier Subcontractors assume the same obligations for providing such insurance and for passing through all such obligations to all lower Tier Subcontractors.

**.8 Self-Insurance.** If approved by County, in the exercise of its sole and absolute discretion, the insurance requirements contained in this Section 11.1 may be met with a program(s) of self-insurance provided that such program has been submitted to County and approved in writing by County prior to commencement of the Work or of any activity or operation related to the performance of the Work.

**.9 Notice of Claim.** Contractor agrees to notify County of any claim by a third party or any incident or event that may give rise to a claim arising from the performance of the Work.

## **ARTICLE 12 BONDS**

### **12.1 PERFORMANCE BOND AND PAYMENT BOND**

**12.1.1 Performance and Payment Bonds.** Within ten (10) Days after the issuance of the Notice of Intent to Award and prior to commencing Work, Contractor shall deliver to County a good and sufficient labor and materials payment bond ("Payment Bond") and a good and sufficient performance bond ("Performance Bond"), each in the amount of one hundred percent (100%) of the Contract Price.

**12.1.2 Changes.** The penal amounts of the Performance Bond and Payment Bond shall be increased on account of Change Orders and Unilateral Change Orders increasing the Contract Price. If requested by County, Contractor shall deliver to County evidence of such increases.

**12.1.3 Replacement.** Should any bond required hereunder or any Surety on such bond become or be determined by County to be insufficient, it shall be replaced within ten (10) Days by a bond that fully complies with the requirements of this Section 12.1.

**12.1.4 Duration.** The Payment Bond shall remain in effect until Acceptance of the Work and all Claims of Contractor and the Subcontractors, of any Tier, have been fully and finally resolved. The Performance Bond shall remain in effect and assure faithful performance of all Contractor's obligations under the Contract Documents, including, without limitation, all warranty obligations.

**12.1.5 Condition of Payment.** No payments to Contractor for Work performed shall be made or due until there has been full compliance with the requirements of this Section 12.1.

**12.1.6 Surety Rating.** Any Surety company issuing the Payment Bond or Performance Bond shall be, at all times while such bond is in effect, an Admitted Surety. The Surety company issuing the Performance Bond shall additionally have at all such times a current A.M. Best rating of A VIII (A:8) or better.

**12.1.7 Premiums.** The premiums for the Performance Bond and Payment Bond are included in the Contract Price and shall be paid by Contractor at Contractor's Own Expense.

**12.1.8 Obligee.** The Performance Bond shall name County as obligee. All performance bonds, if any, purchased by Subcontractors shall name County as a dual obligee with Contractor.

12.1.9 **No Exoneration.** The Performance Bond and Payment Bond shall contain provisions to the effect that Changes, Change Orders, Unilateral Change Orders, Construction Change Directives, Modifications, Changes and Contract Adjustments shall in no way release or exonerate Contractor or its Surety from their obligations and that notice thereof is waived by the Surety.

12.1.10 **Communications.** County shall have the right to communicate with Surety with respect to matters that are related to performance of the Work. Contractor shall be provided with a copy of all such communications that are in writing. Such communications shall not create or be interpreted as creating any contractual obligation of County to Surety.

12.1.11 **No Limitation.** The requirements of this Section 12.1 pertaining to the Performance Bond and the Payment Bond shall be without limitation to any other obligations Contractor may have under Applicable Laws to provide bonding for the benefit of, and to assure payment to the Subcontractors performing the Work for, the Project.

12.1.12 **Subcontractor Bonds.** Each performance bond, if any, furnished by a first-Tier Subcontractor shall include a provision whereby the Surety consents to the contingent assignment of Contractor's rights under such bond to County as provided in Section 5.3, above.

12.1.13 **Claims.** By incorporation of the Construction Contract into the Performance Bond issued by Surety, Surety shall be deemed, subject to the other terms of the Performance Bond, to be bound by all of the obligations assumed by Contractor under the Contract Documents, including, without limitation, bound by any determination, resolution, award or judgment entered or made upon any Claim by or against Contractor.

## ARTICLE 13 UNCOVERING AND CORRECTION OF THE WORK

### 13.1 UNCOVERING OF THE WORK

If a portion of the Work is covered contrary to the request or direction of County, Inspector of Record or Architect, or contrary to the requirements of the Contract Documents, it must, if required by the any of them, be uncovered for observation and be re-covered by Contractor at Contractor's Own Expense.

### 13.2 CORRECTION OF THE WORK

Contractor shall promptly correct Defective Work, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. All such Defective Work shall be either: (1) replaced and all the Work disturbed thereby made good by Contractor at Contractor's Own Expense; or (2) County may exercise its option pursuant to Section 13.4, below, to accept such Work and adjust the Contract Price.

### 13.3 GUARANTEE TO REPAIR PERIOD

13.3.1 **Guarantee To Repair Period.** Besides guarantees and warranties required elsewhere in the Contract Documents, Contractor guarantees the Work as provided hereinbelow. The period of this guarantee, termed the "Guarantee To Repair Period," is for one (1) year commencing as follows:

.1 for any portion of the Work that, upon Substantial Completion of the overall Work, is fully and finally complete and usable in all respects independent of other portions of the Work that are not fully and finally complete, on the date of Substantial Completion of such portion of the Work;

.2 for space beneficially occupied or for separate systems fully utilized prior to Substantial Completion, from the first date of such beneficial occupancy or full utilization, as established by an appropriate written notice by County of intent to take beneficial occupancy; or

.3 for all Work other than that described in Subparagraph 13.3.1.1, above or Subparagraph 13.3.1.2, above, from the date of Final Completion of the Work.

**13.3.2 Repair by Contractor.** Subject to the provisions of Paragraph 13.3.3, below, Contractor shall do the following: (1) correct, repair, replace, remove and restore, to the County's satisfaction, any Defective Work that becomes apparent during the progress of the Work or during the Guarantee To Repair Period; (2) correct, repair, replace, remove and restore, to the County's satisfaction, any other parts of the Work and any other real or personal property which is damaged or destroyed as a result of Defective Work or the correction of Defective Work; and (3) remove from the Site all the Work identified by the County as Defective Work, whether incorporated or not and whether discovered before or after Substantial or Final Completion. Ordinary wear and tear, abuse, or neglect by County or by County employees, its staff, visitors, public or others (except for those under the control or responsibility of Contractor or its Subcontractors) who are authorized or admitted by County to enter, use or occupy the Work, or who enter, use or occupy the Work after Final Completion, are excepted from the foregoing guarantee. All Losses resulting from Defective Work, including, without limitation, all costs of such correction, repair, replacement, removal and restoration, additional testing, inspection and additional service fees and costs of the Inspector of Record, Architect, County Consultants or others whose services may be made necessary thereby as well as any Loss to any other parts of the Work and any other real or personal property which is damaged or destroyed as a result of Defective Work or the correction, repair, replacement, removal or restoration of Defective Work, shall be paid for by Contractor at Contractor's Own Expense. Contractor shall correct, repair, replace, remove and restore Defective Work at such times as are acceptable to the County and in such a manner as to avoid, to the greatest extent practicable, disruption to the activities of the County, its staff, visitors, the public or others. Contractor shall notify the County in writing upon the completion of such correction, repair, replacement, removal and restoration.

**13.3.3 Notice by County.** Except as otherwise provided in this Paragraph 13.3.3 where immediate corrections are needed due to dangerous conditions or risk of imminent Loss or interruption of County operations, the County will give notice to Contractor of Defective Work observed prior to Final Completion in accordance with the provision of Section 15.1, below, governing the occurrence of an Event of Contractor Default and the Contractor shall proceed to cure such Event of Contractor Default in accordance with the requirements of Section 15.1, below, and Paragraph 13.3.2, above. With respect to Defective Work observed after Final Completion, the County will give notice to Contractor with reasonable promptness and Contractor shall commence the correction, repair, replacement, removal and restoration as required by Paragraph 13.3.2, above, no later than ten (10) Days after mailing of such notice to Contractor and Contractor shall thereupon diligently and continuously prosecute such correction, replacement, repair, or restoration to completion. Notwithstanding the foregoing, if in the County's opinion the presence of Defective Work, whether observed prior to Final Completion or after Final Completion and during the Guarantee To Repair Period, poses a risk or threat: (1) to life, safety or the protection of property; (2) of imminent Loss to the County or to any other person or entity; or (3) of causing an interruption in the operations of the County, then County will have the right, in the exercise of its sole and absolute discretion, to proceed with correction or replacement of the Defective Work without prior notice to Contractor, but in such cases will attempt to notify Contractor as soon as possible of the conditions encountered and the action taken by County. Such action by County without prior notice to Contractor shall not relieve Contractor of its responsibility for the costs of such County action or for any Loss occasioned by the Defective Work or necessitated by the County's action, whether such Loss occurs before or after such County action is implemented or completed.

**13.3.4 Correction by County.** If Contractor fails to perform any of its obligations under Paragraph 13.3.2, above, to correct, repair, replace, remove or restore then County, or Separate Contractors under the County's direction, may, notwithstanding any other provisions of this Article 13, proceed to do so and all costs associated therewith (including, without limitation, the cost to store any materials removed) shall be the responsibility of and paid by Contractor at Contractor's Own Expense. Such action by County will not relieve Contractor of the guarantees provided in this Article 13 or elsewhere in the Contract Documents. In addition to Contractor's other obligations under Paragraph 13.3.2, above, Contractor shall correct, repair, replace, remove and restore, to the County's satisfaction and at Contractor's Own Expense any other parts of the Work and any other real or personal property that are damaged or destroyed as a result of such actions by County or the Separate Contractors.

**13.3.5 Sale.** If Contractor does not pay the costs of, or any of the Losses associated with, the correction, repair, replacement, removal or restoration required by the provisions of Paragraph 13.3.2 through Paragraph 13.3.4, above, then within five (5) Days after notice by the County, County may sell any materials or other items of Work removed at auction or at private sale or otherwise dispose of such materials or items and shall account for the net proceeds thereof, after deducting all such costs and Losses, and all costs of sale. If such net proceeds of sale do not cover the Losses for which Contractor is liable to the County, the County may at its option reduce the Contract Price or any payments due to Contractor by such deficiency or recover such deficiency from Contractor.

13.3.6 **No Limitation.** Contractor's obligations under this Article 13 are in addition to, and not in limitation of, its warranty obligations under Section 3.5, above, and any other obligation, guaranty or warranty of Contractor or any other third party under the Contract Documents. Nothing contained in this Article 13 shall be construed to shorten any periods of limitation with respect to other obligations of Contractor under the Contract Documents that are for longer specified periods. Establishment of the Guarantee To Repair Period in no way limits either Contractor's liability for Defective Work or the time within which proceedings may be commenced to enforce Contractor's obligations under the Contract Documents.

#### 13.4 ACCEPTANCE OF NONCONFORMING WORK

Notwithstanding any other provisions of the Contract Documents to the contrary, the County shall have the option, exercised in its sole and absolute discretion after notice to Contractor, in lieu of requiring that Defective Work be remedied or corrected, to reduce the Contract Price to reflect the reduced value of the performance received by County. Such option shall be exercised solely by written notice to Contractor and shall not be implied from any act or omission by County. If there are no remaining payments of the Contract Price to be made to Contractor, or if the remaining payments and retention are insufficient to cover the amount of the reduction of the Contract Price, Contractor shall promptly pay to County the amount of any such deficiency.

### ARTICLE 14 MISCELLANEOUS PROVISIONS

#### 14.1 GOVERNING LAW

The interpretation and enforcement of the Construction Contract and other Contract Documents and of the performance by the parties thereunder shall, notwithstanding application of the principles of conflicts of laws, be governed by the laws of the State of California. The Superior Court for the County of Riverside shall have exclusive jurisdiction and venue over any legal proceedings arising out of or involving the interpretation or enforcement of, or other matters relating to, the Construction Contract, the other Contract Documents or the performance of the parties thereunder.

#### 14.2 TIME OF ESSENCE

All time limits stated in the Contract Documents relative to Contractor's performance of its obligations under the Contract Documents are of the essence.

#### 14.3 SUCCESSORS AND ASSIGNS

The Construction Contract and other Contract Documents shall be binding on successors, assigns and legal representatives of County and Contractor, respectively. Contractor shall not assign, sublet or transfer an interest in or claim under this Construction Contract without advance written approval of County, which approval may be granted or withheld by County in its sole and absolute discretion, and any assignment, subletting or transfer without written approval by County shall be deemed void from its inception. Any assignment, subletting or transfer, whether or not approved by County, will not release Contractor from any of its obligations under the Contract Documents to County. County shall have the right to assign, sublet or transfer its interest in or any claim under the Construction Contract upon written notice to Contractor.

#### 14.4 WRITTEN NOTICE

Any notice from one party to the other or otherwise under the Contract Documents shall be in writing and shall be dated and signed by the party giving such notice or by a duly authorized representative of such party. Any such notice shall be deemed to have been duly served if served in the following manner:

14.4.1 **Notice to County.** If notice is given to County, by personal delivery thereof to County or by depositing same in United States mail, enclosed in a sealed envelope addressed to County at Economic Development Agency, Riverside Centre, 3403 Tenth Street, 4th Floor, Riverside, CA 92501, and to such other address as set forth in the Bidding Documents as the location for submission of Bids and sent by registered or certified mail with postage prepaid.



**14.4.2 Notice to Contractor.** If notice is given to Contractor, by personal delivery thereof to Contractor or to Contractor's project manager or superintendent at the Site, or by depositing same in United States mails, enclosed in a sealed envelope addressed to Contractor at its address stated in the Construction Contract, or if none is so stated at its last known address and sent by registered or certified mail with postage prepaid.

**14.4.3 Notice to Surety.** If notice is given to the Surety, by personal delivery to the Surety or by depositing same in United States mail, enclosed in a sealed envelope, addressed to the Surety at the address of the Surety shown in the applicable Performance Bond or Payment Bond (or, if none is shown, the last known address for the Surety), and sent by registered or certified mail with postage prepaid.

#### **14.5 RIGHTS AND REMEDIES**

**14.5.1 County Rights.** Rights and remedies available to the County under the Contract Documents are in addition to and not a limitation of County's rights and remedies otherwise available under other provisions of the Contract Documents or Applicable Laws.

**14.5.2 Writing Required.** Provisions of the Contract Documents may be waived by County only in writing signed by the Director stating expressly that it is intended as a waiver of specified provisions of the Contract Documents.

**14.5.3 Subsequent Breach.** A waiver by either party of any breach of any term, covenant, or condition contained in the Contract Documents shall not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained therein whether of the same or a different character.

#### **14.6 NO NUISANCE**

Contractor shall not maintain, commit or permit the maintenance or commission of any nuisance in connection with the performance of Work.

#### **14.7 EXTENT OF AGREEMENT**

The Contract Documents represent the full and complete understanding of every kind or nature between the parties and all preliminary negotiations and prior representations, proposals and contracts, of whatever kind or nature, are merged herein and superseded hereby. No verbal agreement or implied covenant shall be held to vary the provisions of the Contract Documents. Any modification of this Construction Contract or the other Contract Documents will be effective only by written instrument signed by both County and Contractor and shall, if required by Applicable Laws, be formally approved or ratified by the Board of Supervisors.

#### **14.8 NO THIRD-PARTY RIGHTS**

Nothing contained in the Construction Contract or the other Contract Documents is intended to make any person or entity who is not a signatory to this Construction Contract a third-party beneficiary of any right of Contractor (including, without limitation, any right of Contractor to a benefit derived from, or to the enforcement of, an obligation assumed by County) that is expressly or impliedly created by the terms of the Contract Documents or by operation of Applicable Laws.

#### **14.9 SEVERABILITY**

Should any part, term, portion or provision of the Construction Contract or the other Contract Documents, or the application thereof to any party or circumstance, be held to be illegal, invalid or in conflict with Applicable Laws, or otherwise be rendered unenforceable or ineffectual, the validity of the remaining parts, terms, portions or provisions, or the application thereof to any other party or circumstances, shall be deemed severable and the same shall remain enforceable and valid to the fullest extent permitted by Applicable Laws.

#### 14.10 PROVISIONS REQUIRED BY APPLICABLE LAWS

Each and every provision of law and clause required by Applicable Laws to be inserted in the Construction Contract or other Contract Documents shall be deemed to be inserted in the Contract Documents shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted or if inserted and requires correction, then upon request of either party these General Conditions shall forthwith be amended by the parties to the Construction Contract to make such insertion or correction.

#### 14.11 SURVIVAL

All provisions of the Contract Documents that either expressly, or by their nature, require performance or assumption by Contractor of an obligation that extends beyond termination of the Construction Contract or Final Completion of the Work, including, without limitation, Contractor's obligations of, or relating to, indemnification, insurance, ownership of documents, retention and audit of books and records, warranties and guaranties and resolution of Claims shall be deemed to survive either termination of the Construction Contract or Final Completion of the Work.

#### 14.12 FEDERAL GRANTS

In the event of a federal grant or other federal financing participation in the funding of the Project, Contractor shall, as required in connection with, or as a condition to, such federal grant or other federal financing participation, permit access to and grant the right to examine its books covering its services performed and expenses incurred under the Construction Contract or other Contract Documents by the federal agency and comply with all applicable federal agency requirements including, without limitation, those pertaining to work hours, overtime compensation, non-discrimination, and contingent fees.

#### 14.13 PROHIBITED INTERESTS

Contractor agrees not to accept any employment or representation which will, or is likely to, make Contractor "financially interested" (as provided in California Government Code §§1090 and 87100, hereinafter "financially interested") in any decision made by County on any matter in connection with which Contractor has been retained in connection with the Project. Without limitation to the foregoing, transactions and interests prohibited by this Section 14.13 include the following: (1) no official or employee of County who is authorized in such capacity and on behalf of County to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with construction of the Project, shall become directly or indirectly financially interested in the performance of the Construction Contract or in any part thereof; (2) no officer, employee, architect, attorney, engineer or inspector of or for County who is authorized in such capacity and on behalf of County to exercise any executive, supervisory or other similar functions in connection with Construction Contract or in any part thereof; and (3) Contractor shall receive no compensation hereunder, and shall repay County for any compensation received by Contractor hereunder, should Contractor or any of the Subcontractors aid, abet or knowingly participate in violation of this Section 14.13.

#### 14.14 ASSIGNMENT OF ANTI-TRUST ACTIONS

California Public Contract Code §7103.5(b), which is hereby incorporated by this reference, provides:

"In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, contractor or the 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 Contractor, without further acknowledgement by the parties."

Contractor for itself and all the Subcontractors agrees to assign to County all rights, title and interest in and to all such causes of action Contractor and all the Subcontractors may have in connection with purchases related to or under the

Contract Documents. This assignment shall become effective at the time County tenders Final Payment to Contractor, and Contractor shall require assignments from all the Subcontractors to comply herewith.

#### 14.15 NO WAIVER

County's approval, acceptance, use or payment for any or part of Contractor's performance of the Work shall not in any way alter Contractor's obligations, or waive any of County's rights, under Contract Documents.

#### 14.16 CONSENT TO PHOTOGRAPHING

Contractor is advised that County intends, from time to time, to take photographs, videotapes and/or motion pictures of the Work, and workers located on the Site and proximate settings. Contractor consents to the use of Contractor's name and likeness in instructional or training uses, news releases, advertising and/or publicity throughout the world in perpetuity, in all media now known or hereafter invented. Contractor shall include in its contracts with its Subcontractors a consent by the Subcontractor to the use of Subcontractor's name and the likenesses of its employees on the same terms as provided for herein applicable to such consent by Contractor.

### ARTICLE 15 DEFAULT, TERMINATION AND SUSPENSION

#### 15.1 COUNTY REMEDIES FOR DEFAULT

15.1.1 **Event of Default.** Each and any of the following shall be considered an Event of Contractor Default:

.1 Contractor files a petition, or has filed against it a petition, for bankruptcy or is adjudged bankrupt;

.2 Contractor makes a general assignment for the benefit of its creditors;

.3 a receiver is appointed on account of Contractor's insolvency;

.4 Contractor defaults, by failing or refusing to perform any obligation set forth in the Construction Contract, General Conditions or elsewhere in the Contract Documents (including, without limitation, the performance or installation of Defective Work) and thereafter: (1) fails to commence to cure such default within two (2) working days after receipt of written notice of default; (2) if the default can be cured within three (3) Days, Contractor fails or refuses after commencing to cure in accordance with Clause (1) hereof to fully cure such default within three (3) Days after receipt of written notice of default; or (3) if the default cannot be fully cured within three (3) Days, Contractor fails after commencing to cure in accordance with Clause (1) hereof to diligently and continuously prosecute and fully cure such default within ten (10) Days after receipt of such written notice;

.5 Contractor fails or refuses to perform an obligation set forth in the Construction Contract, General Conditions or other Contract Documents that either (1) cannot be cured, or (2) cannot be cured within the 10-Day cure period set forth in Subparagraph 15.1.1.4, above;

.6 a breach of any other agreement between County and Contractor as provided in Paragraph 15.1.9, below; or

.7 if Contractor was previously prequalified as a condition for its bidding the Project pursuant to a Prequalification conducted by County, Contractor's prequalification status has been revoked or cancelled due to any of the following: (1) receipt by County of new information indicating that a statement made in Contractor's Prequalification Submittal (as defined in the Prequalification Documents) was false or misleading; (2) ownership of 50% or more of the stock or assets Contractor has changed; (3) if Contractor is a Project Joint Venture, its Principal Managing Partner (as those terms are defined in the Prequalification Documents) has ceased to function, or fully function, in the capacity of a Principal Managing Partner; or (4) Contractor has failed to comply with the requirements of the Prequalification Documents pertaining to minimum safety Prequalification requirements for Subcontractors.

(b) subtract therefrom all amounts previously paid by County to Contractor or to Subcontractors.

(5) **County Amount.** The County Amount used as the basis for payment pursuant to the accounting under this Paragraph 15.1.5 shall be calculated based on the sum of all past, present and future Losses to County resulting or reasonably certain to result, directly or indirectly, from any or all of the following: (a) any negligence, willful misconduct, or Defective Work on the part of Contractor or any Subcontractor; (b) any Event of Contractor Default, whether or not constituting the basis of the County's termination or discontinuance; (c) the County's exercise of its rights and remedies under and in accordance with the Contract Documents or Applicable Laws following the occurrence of an Event of Contractor Default; and (d) the payment by County of amounts to Contractor or any Subcontractor that were not owing to Contractor or that were in excess of the amount to which Contractor was entitled under the Contract Documents.

.2 **Partial Termination or Discontinuance.** In the event an exercise by County of its remedies for an Event of Contractor Default results in a discontinuance or termination of only a portion of the Work, then the Contract Price and Contract Time shall be adjusted under the provisions of Article 7 and Article 8, above, applicable to Deleted Work. Contractor shall thereafter continue to be paid for its performance of the other portions of the Work in accordance with the terms of the Contract Documents, less any amounts that County is entitled to withhold under the terms of the Contract Documents.

.3 **Exclusive Compensation.** Contractor agrees to accept such amounts, if any, as allowed under this Paragraph 15.1.5 as its sole and exclusive compensation in the event of an exercise by County of its remedies permitted by the Contract Documents or Applicable Laws following an Event of Contractor Default.

15.1.6 **Surety.** Without limitation to any of the County's other rights or remedies under a Performance Bond furnished by Contractor, Contract Documents or Applicable Laws, the County has the right to suspend, take over or terminate the performance of the Work by Surety in the event of any of the following: (1) failure of Surety or its contractors to begin the Work within a reasonable time in such manner as to ensure full compliance with the Contract Documents within the Contract Time; (2) abandonment of the Work by Surety or its contractors; (3) if at any time the County makes a Good Faith Determination that the Work is unnecessarily or unreasonably delayed by Surety or its contractors; (4) violation by Surety or its contractors of any terms of the Contract Documents, Performance Bond or Applicable Laws; or (5) failure by Surety or its contractors to follow instructions of the County for performance of the Work or for performance of the Work within the Contract Time. By executing its Performance Bond incorporating the terms of the Construction Contract, Surety shall be deemed to have agreed, without limitation, to the provisions of this Paragraph 15.1.6 as constituting a binding obligation of Surety under its Performance Bond that shall control over any conflicting provisions set forth in the Performance Bond.

15.1.7 **Conversion.** In the event a termination for cause by the County is adjudged by a court or by binding arbitration conducted in accordance with the Contract Documents to have been wrongful, such termination shall be deemed converted to a termination for convenience pursuant to Section 15.3, below, in which case Contractor agrees to accept such amount, if any, as permitted by Paragraph 15.3.3, below, as its sole and exclusive compensation and agrees to waive any right to recovery of any other compensation or Loss, including, but not limited to, loss of anticipated profits, loss of revenue, lost opportunity or other consequential, direct, indirect or incidental damages, of any kind.

15.1.8 **Substantial Performance Waived.** The legal doctrine that a contractor may recover for substantial performance of a building contract is to have no application to the Construction Contract. Any Event of Contractor Default, whether occurring before or after the Work is Substantially Completed, shall be deemed material and shall give rise to the right of County to exercise its remedies permitted under the Contract Documents or Applicable Laws.

15.1.9 **Cross Default.** Contractor agrees that a breach of any other agreement between Contractor and County, whether related or unrelated to the Project, that is not cured in accordance with the terms of such other agreement constitutes an Event of Contractor Default under the Construction Contract, thereby entitling County to assert all its rights and remedies hereunder including, but not limited to, a specific right of off set by County against any amounts otherwise payable to Contractor under the Construction Contract or any other agreement between Contractor and County.

**15.1.10 Rights Cumulative.** All of County's rights and remedies under the Contract Documents are cumulative, and shall be in addition to and not a limitation upon those rights and remedies available under Applicable Laws.

**15.1.11 Materiality.** Designation in the Contract Documents of certain defaults as "material" shall not be construed as implying that other defaults not so designated are not material nor as limiting County's right to terminate or exercise its other rights or remedies for default to only material defaults.

**15.1.12 County Action.** No termination or action taken by County after termination shall prejudice any rights or remedies of County provided by Applicable Laws or by the Contract Documents, including, without limitation, the right of County to proceed against Contractor to recover all Losses suffered by reason of Contractor's default.

## **15.2 SUSPENSION BY COUNTY FOR CONVENIENCE**

**15.2.1 Suspension Order.** Without limitation to the County's rights under Section 15.1, above, County may, at any time, for its convenience and without the occurrence of any Event of Contractor Default, order Contractor, in writing, to suspend, delay or interrupt performance of the Work, in whole or in part. Upon receipt of such an order, Contractor shall comply with its terms and take all reasonable steps to minimize additional costs that are incurred applicable to the portion of the Work suspended, delayed or interrupted by County.

**15.2.2 Resumption.** If an order issued by the County pursuant to this Section 15.2 is canceled or expires, Contractor shall resume and continue with the previously affected portion of the Work. In such event, Contractor shall be entitled to a Contract Adjustment for additional Allowable Costs necessarily caused by such order and compensation allowed under Section 3.3 of the Construction Contract for Compensable Delay; provided, however, that no such Contract Adjustment shall be made: (1) to the extent that performance either is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor or any of the Subcontractors is responsible or for which Contractor would not be entitled to a Contract Adjustment; (2) to the extent that a Contract Adjustment on account thereof is made or denied under another provision of the Contract Documents; or (3) for any general or specific escalation in prices of the Work.

**15.2.3 Limitation.** The provisions of this Section 15.2 shall not apply unless a written order is issued by County pursuant to this Section 15.2.

## **15.3 TERMINATION BY COUNTY FOR CONVENIENCE**

**15.3.1 Right to Terminate for Convenience.** Without limitation upon any of County's other rights or remedies under the Contract Documents or Applicable Laws, County shall have the option, at its sole discretion and without the occurrence of any Event of Contractor Default or any other cause, to terminate the Construction Contract or Work, in whole or in part, for its convenience by giving five (5) Days written notice to Contractor.

**15.3.2 Contractor Obligations.** Upon receipt of notice of termination for convenience pursuant to this Section 15.3, Contractor shall, unless such notice directs otherwise, comply with all of the provisions of Paragraph 15.1.4, above.

**15.3.3 Contractor Compensation.** Following a termination for convenience pursuant to this Section 15.3 and within sixty (60) Days after receipt of a complete and timely Application for Payment from Contractor, an accounting shall be conducted in accordance with the process set forth in Paragraph 15.1.5, above. In such event, the amount due to Contractor shall be the Contractor Amount as calculated in the same manner provided for in Paragraph 15.1.5, above, except that there shall be added to the calculation of the Contractor Amount an amount for: (1) the reasonable, actual and direct Allowable Costs incurred and paid by Contractor (and not by Subcontractors) for (a) demobilizing Contractor's facilities from the Site, and (b) Contractor's administering the close out of its participation in the Project for a period of no longer than fifteen (15) Days; plus (2) a markup to Contractor on the Contractor's Allowable Costs incurred under Clause (1) of this Paragraph 15.3.4 that is based on the percentage for Allowable Markup that Contractor is permitted to charge pursuant to Article 7, above, for Compensable Changes involving Extra Work that is Self-Performed Work.

**15.3.4 Exclusive Compensation.** Contractor agrees to accept the compensation allowed under Paragraph 15.3.3, above, as its sole and exclusive compensation in the event of a termination by County for convenience and waives any claim for Loss related to County's termination for convenience, including, but not limited to, loss of anticipated profits, loss of revenue, lost opportunity, or other consequential, direct, indirect, or incidental damages, of any kind.

**15.3.5 Subcontractors.** Contractor shall include provisions in all of its subcontracts, purchase orders and other contracts with the Subcontractors permitting termination for convenience by Contractor on terms that are consistent with, and that afford no greater rights of recovery against Contractor for termination than are afforded to Contractor under, this Section 15.3.

#### **15.4 TERMINATION BY CONTRACTOR**

**15.4.1 Contractor's Remedies.** Subject to the provisions of Paragraph 15.4.2, below and Paragraph 15.4.3, below, Contractor's sole right to terminate the Construction Contract shall be its right to terminate, for cause only, upon the occurrence of either of the following:

.1 the entire Work is stopped for one hundred sixty (160) consecutive Days, through no act or fault of Contractor or any of the Subcontractors, of any Tier, or any employee or agent of any of them, due to issuance of an order of a court or other Governmental Authority or due to a declaration of a national emergency making material unavailable; or

.2 the entire Work is suspended by Contractor, in accordance with a proper exercise by Contractor of its rights under Section 9.8, above, for a continuous period of thirty (30) Days.

**15.4.2 Notice of Intention to Terminate.** If one of the reasons to terminate as described in Paragraph 15.4.1, above, exists, Contractor may, upon thirty (30) Days written notice to County, terminate the Construction Contract and recover from County as its sole and exclusive compensation such sums as are permitted under Paragraph 15.3.3, above.

**15.4.3 Continuous Performance.** Provided that Contractor is paid undisputed sums due in accordance with the requirements of the Construction Contract, Contractor shall not stop, delay or interrupt continuous performance of the Work by reason of any dispute or disagreement with County, including, without limitation, any disputes or disagreements over payments of money claimed due under the Contract Documents.

#### **15.5 WARRANTIES**

All obligations of Contractor and the Subcontractors under the Contract Documents with respect to warranties and guarantees of the Work will continue in force and shall apply, notwithstanding a termination or other discontinuance of the Work by County or Contractor pursuant to an exercise of rights by either under this Article 15, to any portion of the Work that at the time of such termination or discontinuance has been completed or partially completed by Contractor to the point that it is substantially ready (exclusive of any incidental work that may be needed to connect such portion to other Work to other Work or Existing Improvements or to energize such portion of the Work for operation) for use or occupancy by County.

### **ARTICLE 16 NON-DISCRIMINATION**

#### **16.1 NON-DISCRIMINATION IN SERVICES**

**16.1.1** Contractor must, in accordance with Applicable Laws, not discriminate in the provision of services hereunder because of race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability. For the purpose of this Section 16.1, discrimination in the provision of services may include, but is not limited to the following:

.1 denying any person any service or benefit or the availability of a facility;

.2 providing any service or benefit to any person which is not equivalent to, or is in a non-equivalent manner or at a non-equivalent time from, that provided to others;

.3 subjecting any person to segregation or separate treatment in any manner related to the receipt of any service;

.4 restricting any person in any way in the enjoyment of any advantage or privilege enjoyed by others receiving any service or benefit; or

.5 treating any person differently from others in determining admission, enrollment, eligibility, membership, or any other requirement or condition which persons must meet in order to be provided any service or benefit.

**16.1.2** Contractor shall ensure that services are provided without regard to race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability.

**16.1.3** Contractor shall establish and maintain written procedures under which any person applying for, performing or receiving services hereunder, may seek resolution from Contractor of a complaint with respect to any alleged discrimination. Such persons shall be advised by Contractor of these procedures. A copy of such procedures shall be posted by Contractor in a conspicuous place, available and open to the public, in each of Contractor's facilities where services are provided hereunder.

## **16.2 NON-DISCRIMINATION IN EMPLOYMENT**

Contractor must, in accordance with Applicable Laws, not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability. Without limitation to any other provisions of this Section 16.2, in the performance of the obligations under the Contract Documents, Contractor and the Subcontractors shall comply with all applicable provisions of the California Fair Employment Practices Act (California Government Code §§12940-48) and the applicable equal employment provisions of the Civil Rights Act of 1964 (42 U.S.C. §§200e - 217), whichever is more restrictive. Contractor and the Subcontractors shall ensure that qualified applicants are employed and that employees are treated during employment without regard to race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability, in accordance with requirements of Applicable Laws. Such shall include, but not be limited to, the following:

.1 employment, promotion, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation; or

.2 selection for training, including apprenticeship.

**16.2.1** Contractor agrees to post in conspicuous places in each of Contractor's facilities providing services hereunder, available and open to employees and applicants for employment, notices setting forth the provisions of this Section 16.2.

**16.2.2** Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability, in accordance with requirements of Applicable Laws.

**16.2.3** Contractor shall send to each labor union, or workers' representative with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or the workers' representative of Contractor's commitments under this Section 16.2.

**16.2.4** Contractor certifies and agrees that it will deal with the Subcontractors, bidders and vendors without regard to race, color, religion, national origin, ancestry, sex, age, sexual orientation, marital status, AIDS or disability, in accordance with the requirements of Applicable Laws.

**16.2.5** In accordance with Applicable Laws, Contractor shall allow duly authorized representatives of the County, State, and Federal government access to its employment records during regular business hours in order to verify compliance with the provisions of this Section 16.2. Contractor shall provide such other information and records as such representatives may require in order to verify compliance with the provisions of this Section 16.2.

**16.2.6** If County finds that any of the provisions of this Section 16.2 have been violated by Contractor or any of the Subcontractors, such violation shall constitute a material breach of the Construction Contract for which County may cancel, terminate or suspend the Construction Contract. While County reserves the right to determine independently that the anti-discrimination provisions of the Construction Contract have been violated, a determination by the California Fair Employment and Housing Commission or the Federal Equal Employment Opportunity Commission that Contractor or the Subcontractor has violated State or Federal anti-discrimination laws shall constitute a finding by County that Contractor or the Subcontractor has violated the provisions of this Section 16.2.

**16.2.7** Contractor hereby agrees that it will comply with §504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794) and similar Applicable Laws relating to employment of or access to persons with disabilities, all requirements imposed by applicable Federal Regulations, and all guidelines and interpretations issued pursuant thereto, to the end that no qualified disabled person shall, on the basis of disability, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity of Contractor receiving Federal Financial Assistance.

**END OF GENERAL CONDITIONS**



**SPECIFICATION SECTIONS  
FOR PROJECT FM08720000015**

**DEPARTMENT OF MENTAL HEALTH  
14<sup>TH</sup> STREET OFFICE, BLDG #RV1056  
3625 14<sup>th</sup> STREET  
RIVERSIDE, CALIF. 92501**

**Prepared by:  
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**15520 - AUTOMATIC LIGHTING CONTROL SYSTEM**

**END OF TABLE OF CONTENTS**



## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Progress meetings.
- C. Construction progress schedule.
- D. Submittals for review, information, and project closeout.
- E. Number of copies of submittals.
- F. Submittal procedures.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01700 - Execution Requirements: Additional coordination requirements.
- B. Section 01780 - Closeout Submittals: Project record documents.

##### 1.03 PROJECT COORDINATION

- A. Project Coordinator: County of Riverside EDA Project Manager.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
  - 1. Requests for interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Manufacturer's instructions and field reports.
  - 6. Applications for payment and change order requests.
  - 7. Progress schedules.
  - 8. Coordination drawings.
  - 9. Closeout submittals.

#### PART 3 EXECUTION

##### 2.01 PRECONSTRUCTION MEETING

- A. County of Riverside EDA will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. County of Riverside EDA.
  - 2. Architect.
  - 3. Contractor

- C. Agenda:
  1. Execution of County of Riverside EDA- Agreement.
  2. Submission of executed bonds and insurance certificates.
  3. Distribution of Contract Documents.
  4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
  5. Designation of personnel representing the parties to Contract, County of Riverside and Architect.
  6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  7. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, County of Riverside EDA, participants, and those affected by decisions made.

## **2.02 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, County of Riverside EDA, Architect, as appropriate to agenda topics for each meeting.
- D. Agenda:
  1. Review minutes of previous meetings.
  2. Review of Work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems that impede, or will impede, planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Maintenance of progress schedule.
  7. Corrective measures to regain projected schedules.
  8. Planned progress during succeeding work period.
  9. Maintenance of quality and work standards.
  10. Effect of proposed changes on progress schedule and coordination.
  11. Other business relating to Work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, County of Riverside EDA, participants, and those affected by decisions made.

## **2.03 CONSTRUCTION PROGRESS SCHEDULE**

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
  1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

## **2.04 SUBMITTALS FOR REVIEW**



- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to County of Riverside for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01780 - CLOSEOUT SUBMITTALS.

#### **2.05 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for County of Riverside EDA. No action will be taken.

#### **2.06 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. When the following are specified in individual sections, submit them at project closeout:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Bonds.
  - 5. Other types as indicated.
- B. Submit for County of Riverside EDA's benefit during and after project completion.

#### **2.07 NUMBER OF COPIES OF SUBMITTALS**

- A. Documents for Review:
  - 1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit the number of copies that requires, plus two copies that will be retained by County of Riverside.
- B. Documents for Information: Submit two copies.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
  - 1. After review, produce duplicates.
  - 2. Retained samples will not be returned to unless specifically so stated.

#### **2.08 SUBMITTAL PROCEDURES**

- A. Transmit each submittal with approved form.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project,, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

- D. Apply's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Deliver submittals to County of Riverside EDA at 3403 Tenth Street, Suite 400, Riverside, CA.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow 10 days excluding delivery time to and from the.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- I. Provide space for and Architect review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

**END OF SECTION**

**SECTION 01330**

**EXTRA MATERIAL SUMMARY LIST**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Attic Stock. Contractor to provide 5% of the contract quantity of such materials as flooring and ceiling tiles, and 10% or at least 1 gallon of each color of paint. Materials are to be left at the site and the County of Riverside Maintenance Department is to be notified as to their location.

**PART 2 PRODUCTS**

**END OF SECTION**

## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Control of installation.
- B. Testing and inspection services.

##### 1.02 REFERENCE STANDARDS

- A. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2011.
- B. ASTM E329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing; 2011.

##### 1.03 SUBMITTALS

- A. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for County of Riverside EDA's information.
- B. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for County of Riverside EDA.
  - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
  - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or County of Riverside EDA.

##### 1.04 TESTING AND INSPECTION AGENCIES

#### PART 3 EXECUTION

##### 2.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

##### 2.02 TESTING AND INSPECTION

- A. Testing Agency Duties:

1. Provide qualified personnel at site. Cooperate with Architect and in performance of services.
  2. Perform specified sampling and testing of products in accordance with specified standards.
  3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  4. Promptly notify Architect and of observed irregularities or non-conformance of Work or products.
  5. Perform additional tests and inspections required by Architect.
  6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  2. Agency may not approve or accept any portion of the Work.
  3. Agency may not assume any duties of.
  4. Agency has no authority to stop the Work.
- C. Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
  2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by beyond specified requirements.
  6. Arrange with County of Riverside EDA's agency and pay for additional samples, tests, and inspections required by beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-conformance to specified requirements shall be paid for by.

### **2.03 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

## SECTION 01600

### PRODUCT REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Procedures for County of Riverside EDA-supplied products.

##### 1.02 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

#### PART 2 PRODUCTS

##### 2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

##### 2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

##### 2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

#### PART 3 EXECUTION

##### 3.01 SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

- B. Architect will consider requests for substitutions only within a reasonable period after date of Agreement.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request for substitution constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to County of Riverside EDA.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
  - 1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  - 3. The Architect will notify in writing of decision to accept or reject request.

### **3.02 OWNER-SUPPLIED PRODUCTS**

- A. County of Riverside EDA's Responsibilities:
  - 1. Arrange for and deliver County of Riverside EDA reviewed shop drawings, product data, and samples, to.
  - 2. Arrange and pay for product delivery to site.
  - 3. On delivery, inspect products jointly with.
  - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
  - 5. Arrange for manufacturers' warranties, inspections, and service.
- B. 's Responsibilities:
  - 1. Review County of Riverside EDA reviewed shop drawings, product data, and samples.
  - 2. Receive and unload products at site; inspect for completeness or damage jointly with County of Riverside EDA.
  - 3. Handle, store, install and finish products.
  - 4. Repair or replace items damaged after receipt.

### **3.03 TRANSPORTATION AND HANDLING**

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.04 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**



## SECTION 01700

### EXECUTION REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Demonstration and instruction of County of Riverside personnel.
- F. Closeout procedures, except payment procedures.
- G. General requirements for maintenance service.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01300 (013000) - Administrative Requirements: Submittals procedures.
- B. Section 01780 (017800) - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

##### 1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2009.

##### 1.04 SUBMITTALS

- A. See Section 01300 (013000) - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of County of Riverside or separate Contractor.

##### 1.05 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- D. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
  - 1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
  - 2. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.

##### 1.06 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements,

with provisions for accommodating items installed later.

- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After County of Riverside occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of County of Riverside's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **3.03 GENERAL INSTALLATION REQUIREMENTS**

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### 3.04 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as shown.
  - 2. Report discrepancies to County of Riverside before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
  - 2. Relocate items indicated on drawings.
  - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    - b. Provide temporary connections as required to maintain existing systems in service.
  - 4. Verify that abandoned services serve only abandoned facilities.
  - 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
  - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to County of Riverside.
  - 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework

- floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for County of Riverside review and request instructions.
  4. Trim existing wood doors as necessary to clear new floor finish. Refinish trim as required.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- G. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.

### **3.05 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
  2. Fit products together to integrate with other work.
  3. Provide openings for penetration of mechanical, electrical, and other services.
  4. Match work that has been cut to adjacent work.
  5. Repair areas adjacent to cuts to required condition.
  6. Repair new work damaged by subsequent work.
  7. Remove samples of installed work for testing when requested.
  8. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07840 (078400), to full thickness of the penetrated element.
- J. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire

- unit.
- 2. Match color, texture, and appearance.
- 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.06 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.07 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. 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.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### **3.08 DEMONSTRATION AND INSTRUCTION**

- A. Demonstrate operation and maintenance of products to County of Riverside's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- E. Perform instruction in a classroom environment located at site.
- F. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with County of Riverside's personnel in detail to explain all aspects of operation and maintenance.

### **3.09 ADJUSTING**

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### **3.10 FINAL CLEANING**

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### **3.11 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to County of Riverside.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.
- C. Notify County of Riverside when work is considered ready for Substantial Completion.
- D. 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 Heery International, Inc.'s review.
- E. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to County of Riverside-occupied areas.
- F. Notify Heery International, Inc. when work is considered finally complete.
- G. Complete items of work determined by Heery International, Inc.'s final inspection.

### **3.12 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the County of Riverside.

**END OF SECTION**

## SECTION 01780

### CLOSEOUT SUBMITTALS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01300 (013000) - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01700 (017000) - Execution Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

##### 1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to County of Riverside with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Heery International, Inc. will review draft and return one copy with comments.
  - 2. For equipment, or component parts of equipment put into service during construction and operated by County of Riverside, submit completed documents within ten days after acceptance.
  - 3. Submit one copy of completed documents 10 days prior to final inspection. This copy will be reviewed and returned after final inspection, with County of Riverside comments. Revise content of all document sets as required prior to final submission.
  - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with County of Riverside's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

#### PART 3 EXECUTION

##### 2.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with County of Riverside's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

**END OF SECTION**



## SECTION 02765

### PAVEMENT MARKINGS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Parking lot markings, including parking bays, crosswalks, arrows, handicapped symbols, and curb markings.

##### 1.02 REFERENCE STANDARDS

- A. FS TT-P-1952 - Paint, Traffic Black, and Airfield Marking, Waterborne; Rev. E, 2007.
- B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, [www.paintinfo.com](http://www.paintinfo.com).
- C. FHWA MUTCD - Manual on Uniform Traffic Control Devices for Streets and Highways; U.S. Department of Transportation, Federal Highway Administration; <http://mutcd.fhwa.dot.gov>; current edition.

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Line and Zone Marking Paint: MPI No. 97 Latex Traffic Marking Paint; color(s) as indicated.
  - 1. Parking Lots: White.
  - 2. Handicapped Symbols: Blue.
- B. Paint For Obliterating Existing Markings: FS TT-P-1952; black for bituminous pavements, gray for portland cement pavements.
- C. Temporary Marking Tape: Preformed, reflective, pressure sensitive adhesive tape in color(s) required; is responsible for selection of material of sufficient durability as to perform satisfactorily during period for which its use is required.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.

##### 3.02 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- B. Clean surfaces thoroughly prior to installation.
  - 1. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods.
  - 2. Completely remove rubber deposits, existing paint markings, and other coatings adhering to the pavement, by scraping, wire brushing, sandblasting, mechanical abrasion, or approved chemicals.
  - 3. Sandblasting: Use equipment of size and capacity necessary, providing not less than 150 cfm of air at pressure not less than 90 psi at each nozzle used.

- C. Where oil or grease are present, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application; after cleaning, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint.
- D. Establish survey control points to determine locations and dimensions of markings; provide templates to control paint application by type and color at necessary intervals.
- E. Temporary Pavement Markings: When required or directed by Architect, apply temporary markings of the color(s), width(s) and length(s) as indicated or directed.
  - 1. After temporary marking has served its purpose, remove temporary marking by carefully controlled sandblasting, approved grinding equipment, or other approved method so that surface to which the marking was applied will not be damaged.
  - 2. At's option, temporary marking tape may used in lieu of temporary painted marking; remove unsatisfactory tape and replace with painted markings at no additional cost to County of Riverside EDA.

### **3.03 INSTALLATION**

- A. Begin pavement marking as soon as practicable after surface has been cleaned and dried.
- B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F.
- C. Apply in accordance with manufacturer's instructions using an experienced technician that is thoroughly familiar with equipment, materials, and marking layouts.
- D. Comply with FHWA MUTCD manual (<http://mutcd.fhwa.dot.gov>) for details not shown.
- E. Apply markings in locations determined by measurement from survey control points; preserve control points until after markings have been accepted.
- F. Apply uniformly painted markings of color(s), lengths, and widths as indicated on the drawings true, sharp edges and ends.
  - 1. Apply paint in one coat only.
  - 2. Wet Film Thickness: 0.015 inch, minimum.
  - 3. Width Tolerance: Plus or minus 1/8 inch.
- G. Parking Lots: Apply parking space lines, entrance and exit arrows, painted curbs, and other markings indicated on drawings.
  - 1. Mark the International Handicapped Symbol at indicated parking spaces.
  - 2. Hand application by pneumatic spray is acceptable.
- H. Symbols: Use a suitable template that will provide a pavement marking with true, sharp edges and ends, of the design and size indicated.

### **3.04 DRYING, PROTECTION, AND REPLACEMENT**

- A. Protect newly painted markings so that paint is not picked up by tires, smeared, or tracked.
- B. Provide barricades, warning signs, and flags as necessary to prevent traffic crossing newly painted markings.
- C. Allow paint to dry at least the minimum time specified by the applicable paint standard and not less than that recommended by the manufacturer.

- D. Remove and replace markings that are applied at less than minimum material rates; deviate from true alignment; exceed length and width tolerances; or show light spots, smears, or other deficiencies or irregularities.
- E. Remove markings in manner to avoid damage to the surface to which the marking was applied, using carefully controlled sand blasting, approved grinding equipment, or other approved method.
- F. Replace removed markings at no additional cost to County of Riverside EDA.

**END OF SECTION**

## SECTION 03100

### CONCRETE FORMS AND ACCESSORIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Formwork for cast-in place concrete, with shoring, bracing and anchorage.
- B. Openings for other work.
- C. Form accessories.
- D. Form stripping.

##### 1.02 RELATED SECTIONS

- A. Section 03200 - Concrete Reinforcement.
- B. Section 03300 - Cast-in-Place Concrete.

##### 1.03 REFERENCES

- A. ACI 117 - Standard Specifications for tolerances for Concrete Construction and Materials; latest edition.
- B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; latest edition.
- C. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International; latest edition.
- D. ACI 347R - Guide to Formwork for Concrete; American Concrete Institute International; latest edition
- E. ASME A17.1 - Safety Code for Elevators and Escalators; The American Society of Mechanical Engineers; latest edition.
- F. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); latest edition.
- G. ASTM D994 - Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); latest edition.
- H. ASTM D1751- Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); latest edition.
- I. ASTM D1752 - Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction; latest edition.
- J. State of California, Construction Safety Orders (CAL/OSHA); latest edition.
- K. State of California, Code of Regulations (CCR).
- L. International Conference of Building Officials, Uniform Building Code with State of California Amendments (CBC); latest edition.

##### 1.04 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing to conform to ACI 301, ACI 318, ACI 347R, CBC and CAL/OSHA requirements; resultant concrete to conform to required shape, line and dimension.
- B. The design and engineering of formwork and related shoring is the responsibility of the Contractor.

## **1.05 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 347R, ACI 301, and ACI 318.
  - 1. Maintain one copy of standards on project site.
- B. Design formwork under direct supervision of a Professional Civil Engineer experienced in design of concrete formwork and licensed in the state of the local jurisdiction.

## **PART 2 PRODUCTS**

### **2.01 WOOD FORM MATERIALS**

- A. Softwood Plywood: PS 1, B-B High Density Concrete Form Overlay, Class I, exterior grade or better.
- B. Lumber: Douglas Fir species; No. 2 grade or better; with grade stamp clearly visible.
- C. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- D. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

### **2.02 FORMWORK ACCESSORIES**

- A. Form Ties: Snap-off type, galvanized metal, fixed length,, leaving no metal within 1-1/2 inch of surface, free of defects that could leave holes larger than 1 inch in concrete surface.
- B. Form Release Agent: Colorless, non-staining, free from oils, chemically active agent that will not impair natural bonding of concrete finish coatings or affect color characteristics of concrete finish coatings.
- C. Corners: Chamfered, rigid plastic type; 3/4x3/4 inch size, unless otherwise indicated on the drawings; maximum possible lengths.
- D. Polystyrene void forms: Polystyrene must have adequate stiffness to blockout concrete during placing operations.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

### **3.02 EARTH FORMS**

- A. Trim sides and bottom of earth forms. Provide forms where required at the sides of excavation. Remove loose soil prior to placing concrete.

### **3.03 ERECTION - FORMWORK**

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to oversteering by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Obtain approval before framing openings in structural members that are not indicated on drawings.

- F. Provide fillet and chamfer strips on external corners of beams, columns, and walls.
- G. Install polystyrene void forms in accordance with manufacturer's recommendations at areas indicated in the Contract Documents. Protect forms from moisture or crushing.
- H. Coordinate this section with other sections of work that require attachment of components to formwork.
- I. If formwork is placed after reinforcement, resulting in insufficient concrete cover over reinforcement, request instructions from Owner's Representative before proceeding.

#### **3.04 APPLICATION - FORM RELEASE AGENT**

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

#### **3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS**

- A. Provide formed openings where required for items to be embedded in passing through concrete work.
- B. Locate and set in place items that will be cast directly into concrete.
- C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
- D. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- E. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Heat seal joints so they are watertight.
- F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- G. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

#### **3.06 FORM CLEANING**

- A. Clean forms as erection proceeds, to remove foreign matter within forms as specified in ACI 117.
- B. Clean formed cavities of debris prior to placing concrete.
  - 1. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

#### **3.07 FORMWORK TOLERANCES**

- A. Construct formwork to maintain tolerances required by ACI 301 and ACI.
- B. Construct and align formwork for elevator hoistway in accordance with ASME A17.1.
- C. Camber slabs and beams in accordance with ACI 301.

#### **3.08 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01400.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with

formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

- C. The Owner's Representative will approve the reuse of forms provided the formwork edges and surfaces are in good condition, and if it is straight, clean, free from nails, dirt, hardened concrete, and other harmful matter. Do not patch formwork.

### **3.09 FORM REMOVAL**

- A. A. Form removal and reshoring should comply with recommendations of ACI 347R
- B. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- C. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- D. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.

### **3.10 3.10 MISCELLANEOUS**

- A. A. Construction Waste: In accordance with Section 01500.

**END OF SECTION**

## SECTION 03200

### CONCRETE REINFORCEMENT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Reinforcing steel for cast-in-place concrete.
- B. Supports and accessories for steel reinforcement.

##### 1.02 RELATED SECTIONS

- A. Section 03100 - Concrete Forms and Accessories.
- B. Section 03300 - Cast-in-Place Concrete.

##### 1.03 REFERENCES

- A. ACI 117 - Standard Specifications for tolerances for Concrete Construction and Materials; latest edition.
- B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; latest edition.
- C. ACI 318 - Building Code Requirements For Reinforced Concrete and Commentary; American Concrete Institute International; latest edition.
- D. ACI SP-66 - ACI Detailing Manual; American Concrete Institute International; latest edition.
- E. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; latest edition.
- F. ASTM A 1064 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement; latest edition.
- G. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; latest edition.
- H. ASTM A 706/A 706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement; latest edition.
- I. I. ASTM A 884/A 884 M - Standard specification for coating of Steel Wire Fabric; latest edition.
- J. AWS D1.4 - Structural Welding Code - Reinforcing Steel; American Welding Society; latest edition
- K. CRSI (DA4) - Manual of Standard Practice; Concrete Reinforcing Steel Institute; latest edition.
- L. CRSI (P1) - Placing Reinforcing Bars; Concrete Reinforcing Steel Institute; latest edition.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Comply with requirements of ACI SP-66 and ACI 301. Include size, spacing and configuration of reinforcement, bar schedules, shapes of bent bars, spacing of bars, and location of splices.
  - 1. Shop drawings shall not be reproductions of the construction documents.
- C. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.

##### 1.05 QUALITY ASSURANCE



- A. Perform work of this section in accordance with CRSI (DA4), CRSI (P1), ACI 301, ACI SP-66, ACI 318, and ASTM A 184/A 184M.
  - 1. Maintain one copy of each document on project site.
- B. Welders' Certificates: Submit certifications for welders employed on the project, verifying AWS qualification within the previous 12 months.

#### **1.06 SOURCE QUALITY CONTROL**

- A. The Owner's Testing Laboratory will:
  - 1. Collect mill test reports (tensile and bend test) for reinforcement. Review the test data for tensile and bond tests of the reinforcement if mill certificates are not submitted. Tests shall be performed by the Contractor's testing agency. The number of tests shall be in accordance with the CSRI Manual of Standard Practice.
  - 2. Review the test data on mechanical couplers to confirm that the 160 percent of the specified yield strength is obtained and to confirm that a strain of 10 times the yield point strain is developed in the bars adjacent to the couplers. The Contractor's independent testing laboratory shall perform the tests.
  - 3. Review the Welding Procedure Specifications (WPS) and test data needed to qualify welding. Perform necessary tests of samples provided by a Contractor to qualify the welds.
  - 4. Perform radiographic examinations on at least 25 percent of all shop welded splices. For each weld found to be defective, 100 percent of all welds will be tested until five consecutive welds are found to have no defects.

### **PART 2 PRODUCTS**

#### **2.01 REINFORCEMENT**

- A. Provide local/regional materials in accordance with Local/Regional Materials provisions of Section 01600.
- B. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420).
  - 1. Deformed billet-steel bars.
  - 2. Unfinished.
- C. Reinforcing Steel: ASTM A 706/A 706M, deformed low-alloy steel bars, where indicated in the documents.
  - 1. Unfinished.
- D. Welded Steel Wire Fabric: ASTM A 884/A 884M, deformed, Class A epoxy coated type.
  - 1. Flat Sheets.
  - 2. Mesh Size and Wire Gage: As indicated on drawings.
- E. Reinforcement Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gage.
  - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
  - 3. Provide stainless steel components for placement within 1-1/2 inches of weathering surfaces.
  - 4. Mechanical Couplers shall be capable of developing 160 percent of the specified yield strength of the bar and shall develop a minimum of 10 times the yield point strain in the connected reinforcing bars.

## **2.02 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice and ACI 318.
- B. Welding of reinforcement is permitted only with the specific approval of the Owner's Representative. Perform welding in accordance with AWS D1.4.
- C. Locate reinforcing splices not indicated on drawings at point of minimum stress. Splice no more than 50 percent of the bars at any section. Show all splice locations on the shop drawings.
  - 1. Review locations of splices with the Owner's Representative.

## **PART 3 EXECUTION**

### **3.01 PLACEMENT: Placing of reinforcement shall comply with the requirements of the Concrete**

- A. Reinforcing Steel Institute's (CRSI) recommended practice for "Placing Reinforcing Bars", and as follows:
- B. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- C. Do not displace or damage vapor barrier.
- D. Accommodate placement of formed openings.
- E. Conform to applicable code for concrete cover over reinforcement, unless otherwise indicated as greater cover in the drawings.

### **3.02 FIELD QUALITY CONTROL**

- A. An independent testing agency, as specified in Section 01400, will inspect installed reinforcement for conformance to contract documents before concrete placement.

### **3.03 MISCELLANEOUS**

- A. A. Construction Waste: In accordance with Section 01500.

**END OF SECTION**

## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Slabs on grade.
- B. Concrete foundation walls.
- C. Joint devices associated with concrete work.
- D. Miscellaneous concrete elements, including equipment pads and curbs.
- E. Concrete curing.
- F. Mechanical anchors, adhesive anchors and adhesive dowels in concrete.

##### 1.02 RELATED SECTIONS

- A. Section 03100 - Concrete Forms and Accessories: Forms and accessories for formwork.
- B. Section 03200 - Concrete Reinforcement.

##### 1.03 REFERENCES

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; latest edition.
- B. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete; American Concrete Institute International; latest edition.
- C. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; latest edition.
- D. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; latest edition.
- E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; latest edition.
- F. ACI 305R - Hot Weather Concreting; American Concrete Institute International; latest edition.
- G. ACI 306R - Cold Weather Concreting; American Concrete Institute International; latest edition.
- H. ACI 308 - Standard Practice for Curing Concrete; American Concrete Institute International; latest edition.
- I. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International; latest edition.
- J. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement; last edition.
- K. ASTM A 497 - Standard Specification for Steel Welded Wire fabric, Deformed, for Concrete Reinforcement; latest edition.
- L. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; latest edition.
- M. ASTM A 706/A 706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement; latest edition.
- N. ASTM C 33 - Standard Specification for Concrete Aggregates; latest edition.

- O. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; latest edition.
- P. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete; latest edition.
- Q. ASTM C 143/C 143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; latest edition.
- R. ASTM C 150 - Standard Specification for Portland Cement; latest edition.
- S. ASTM C 171 - Standard Specification for Sheet Materials for Curing Concrete; latest edition.
- T. ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; latest edition.
- U. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; latest edition.
- V. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; latest edition.
- W. ASTM C 330 - Standard Specification for Lightweight Aggregates for Structural Concrete; latest edition.
- X. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete; latest edition.
- Y. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete; latest edition.
- Z. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); latest edition.
- AA. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); latest edition.
- AB. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); latest edition.
- AC. ASTM E 1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; latest edition.
- AD. ASTM E 1155M - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers [Metric]; latest edition.
- AE. COE CRD-C 513 - COE Specifications for Rubber Waterstops; Corps of Engineers; latest edition.
- AF. COE CRD-C 572 - Corps of Engineers Specifications for Polyvinylchloride Waterstop; Corps of Engineers; latest edition.
- AG. AG CRSI - Manual of Standard Practice, latest edition.

#### **1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products.
- C. Samples: Submit two, 12 inch long samples of construction joint devices.

- D. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction for concrete accessories.
- E. Concrete mix designs for each class of concrete. Submit data that substantiates the mix designs will achieve the required drying shrinkage limit(s).
- F. Locations of control, expansion and construction joints.
- G. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.
- H. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
- I. Welding certificates.
- J. Material certificates.
- K. Material test reports.
- L. Floor surface flatness and levelness measurements.

#### **1.05 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301, ACI 302 and ACI 318.
  - 1. Maintain one copy of each document on site.
- B. Acquire cement from same source and aggregate from same source for entire project.
- C. Follow recommendations of ACI 305R when concreting during hot weather.
- D. Follow recommendations of ACI 306R when concreting during cold weather.
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- G. Preinstallation Conference: Conduct conference at Project site.

### **PART 2 PRODUCTS**

#### **2.01 FORMWORK**

- A. Comply with requirements of Section 03100.

#### **2.02 REINFORCEMENT**

- A. Comply with requirements of Section 03200.

#### **2.03 CONCRETE MATERIALS**

- A. Provide recycled materials in accordance with Recycled Content provisions of Section 01600.
- B. Provide local/regional materials in accordance with Local/Regional Materials provisions of Section 01600.
- C. Cement: ASTM C 150, Type I - Normal portland type. Use Type II or V cement per the geotechnical report for concrete that will be in contact with on-site clayey soil materials.
- D. Fine and Coarse Aggregates: ASTM C 33.

- E. Lightweight Aggregate: ASTM C 330.
- F. Fly Ash: ASTM C 618, Class C or F.
- G. Calcined Pozzolan: ASTM C 618, Class N.
- H. Silica Fume: ACI 211.1
- I. Water: Clean and not detrimental to concrete. Potable.

#### 2.04 ADMIXTURES

- A. Air Entrainment Admixture: ASTM C 260. Do not use entrained air for concrete to be given a smooth, dense, hard trowelled finish since blistering and delaminations may occur.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement. Do not use calcium chloride or admixtures containing calcium chloride. Provide products manufactured by Sika, Master Builders or W.R. Grace.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
  - 7. CONCRETE ACCESSORIES
- C. Vapor Barrier: Per the geotechnical report and supplemental report(s) for the project.
- D. Sand Fill over Vapor Barrier: Granular fill above the vapor barrier to be per the drawings, geotechnical report and supplemental report(s) for the project.
- E. Rock Base: Rock fill below the vapor barrier to be per the drawings, geotechnical report and supplemental report(s) for the project..
- F. Non-Shrink Grout: ASTM C 1107; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
  - 1. Minimum Compressive Strength at 48 Hours: 2,400 psi.
  - 2. Minimum Compressive Strength at 28 Days: 7,000 psi.
    - a. Moisture-Retaining Cover: ASTM C 171; regular curing paper, white curing paper, clear polyethylene, white polyethylene, or white burlap-polyethylene sheet.
- G. Liquid Curing Compound: ASTM C 309, Type 1-D, clear or translucent with fugitive dye. Curing compound used on exposed concrete surfaces shall be non-discoloring, fast drying and shall be conclusively demonstrated not to darken or yellow with age. Curing compound for use on concrete floor surfaces to receive resilient tile or other adherent covering shall be specially formulated for such use and shall be certified by the manufacturer not to inhibit the bonding qualities of flooring adhesives.

#### 2.05 JOINT DEVICES AND MATERIALS

- A. Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard or felt, complying with ASTM D 1751, thickness as indicated on drawings and 4 inches deep; tongue and groove profile.
- B. Joint Filler: Compressible asphalt mastic with felt facers, complying with ASTM D 994, thickness as indicated on drawings and full depth of slab less 1/2 inch.

#### 2.06 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Proportioning Structural Lightweight Concrete: Comply with ACI 211.2 recommendations.

- C. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
1. For trial mixtures method, employ independent testing agency acceptable to the Owner's Representative for preparing and reporting proposed mix designs.
- D. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.
- E. Class A Concrete: For use in footings.
1. Normal weight: Dry unit weight not less than 144 lbs or more than 150 lbs per cubic foot.
  2. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: As indicated on drawings (minimum 4,000 psi at 28 days).
  3. Use Type II or V cement per the geotechnical report for concrete that will be in contact with on-site clayey soil materials.
  4. Fly Ash: ASTM C618, Class C or F except that maximum carbon content shall not exceed three percent and maximum percentage retained on the #325 screen shall not exceed 25 percent. Fly ash shall be from a single, domestic source.
  5. Ground Granulated Blast-Furnace Slag: ASTM C989, Grade 100 or 120 may be used up to a maximum of 40% of the total cementitious content.
  6. Water-Cementitious Material Ratio: Maximum 0.45 by weight.
  7. Air-Entrained Admixture (if required): Shall produce an air content of 4-1/2 percent, per ASTM C 173. Do not use entrained air for concrete to be given a smooth, dense, hard trowelled finish since blistering and delaminations may occur.
  8. Maximum Slump: 4 inches at point of discharge from truck, or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
  9. Maximum Coarse Aggregate Size: 1 1/2 inch. 3/8-inch aggregate may be used in concrete with congested rebar only when approved by the Owner's Representative.
- F. Class B Concrete: For use in slabs on grade, curbs, housekeeping pads, walls and other miscellaneous concrete.
1. Normal weight: Dry unit weight not less than 144 lbs or more than 150 lbs per cubic foot.
  2. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: As indicated on drawings (minimum 4,000 psi at 28 days).
  3. Use Type II or V cement per the geotechnical report for concrete that will be in contact with on-site clayey soil materials.
  4. Water-Cementitious Material Ratio: Maximum 0.45 by weight.
  5. Air-Entrained Admixture (if required): Shall produce an air content of 4-1/2 percent, per ASTM C 173. Do not use entrained air for concrete to be given a smooth, dense, hard trowelled finish since blistering and delaminations may occur.
  6. Maximum Slump: 4 inches at point of discharge from truck, or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
  7. Maximum Coarse Aggregate Size: 1 inch, 1 1/2 inch may be used at slabs on grade to achieve drying shrinkage limits. 3/8-inch aggregate may be used in concrete with congested rebar only when approved by the Owner's Representative.
  8. Maximum Coarse Aggregate Size at congested areas: 3/8 inch with a high range water-reducing admixture when approved by the Owner's Representative.
  9. Drying Shrinkage: Limit drying shrinkage to 0.052 percent after 28 days of drying.
- G. The shrinkage limits for each class of concrete are for laboratory specimens prepared in accordance with ASTM C192 and tested in accordance with ASTM C157.

## 2.07 MIXING

- A. Transit Mixers: Comply with ASTM C 94/C 94M.

## 2.08 SOURCE QUALITY CONTROL

- A. Comply with the requirements of Section 01410 - Quality Requirements
- B. Batch Plant: Periodic Inspections of the source batch plant shall occur for the duration of concrete placement. Inspections shall occur during the following times, on each day that the concrete is being mixed for this project:
  - 1. At time of plant startup.
  - 2. During mixing of first five loads of concrete to be delivered to the site.
  - 3. At least once more before the end of the day, during the mixing of five loads of concrete to be delivered to the site.
- C. Aggregates: The Contractor shall supply the Owner's Testing Agency adequate samples of the aggregates to be used on the project. Sampling shall take place as discharged from the weight hopper or as close to the point of discharge into the mixer as possible. Sampling shall take place no more than two days prior to mixing concrete for the project. Sample and test at least once per 500 cubic yards of concrete placed.
- D. The Owner's Testing Agency shall check all aggregates for general suitability, compliance with the specifications, and ASTM C33.
  - 1. Sieve Analysis (ASTM C136)
  - 2. Specific Gravity (ASTM C127 and C128)
  - 3. Absorption (ASTM C127 and C128)
  - 4. Moisture Content of Fine Aggregate (ASTM C70)
  - 5. Cleaness Value (California Test 227)
  - 6. Sand Equivalent (California Test 217)
- E. Cement: Contractor shall supply the Owner's Testing Agency a certification that the cement has been manufactured and tested in accordance with ASTM C150. Where certification is not available, one grab sample shall be taken and tested for each day's pour. Sampling and testing shall be in accordance with the requirements of ASTM C183.
- F. The Owner's Testing Agency will:
  - 1. Review mix designs and certificates of compliance for materials submitted by the Contractor for review.
  - 2. Inspect the batch plant to verify that the quality controls are adequate.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

#### **3.02 PREPARATION**

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Verify that forms are clean before applying release agent.
- C. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.
- D. Install vapor barrier under interior slabs on grade. Lap joints minimum 6 inches and seal watertight by taping edges and ends. Cover with sand to depth shown on drawings.
- E. Roughen concrete surfaces in contact with new or existing concrete to 1/4 inch amplitude and clear of laitance, foreign matter and loose particles.



### 3.03 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- E. Waterstops: Install in construction joints and at other joints indicated according to manufacturer's written instructions.

### 3.04 PLACING CONCRETE

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Place concrete in accordance with ACI 304R.
- C. Place concrete for floor slabs in accordance with ACI 302.1R.
- D. Separate slabs on grade from vertical surfaces with joint filler unless otherwise indicated in the drawings.
- E. Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- F. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface. Conform to Section 07900 for finish joint sealer requirements.
- G. Install joint devices in accordance with manufacturer's instructions.
- H. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- I. Apply sealants in joint devices in accordance with Section 07900.
- J. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- K. Place concrete continuously between predetermined expansion, control, and construction joints.
- L. Do not interrupt successive placement; do not permit cold joints to occur.
- M. Place floor slabs in pour strips and saw cut pattern as indicated.
- N. Saw cut joints within 24 hours after placing. Use 1/8 inch thick blade, cut into 1/4 depth of slab thickness.

- O. Screed slabs on grade level, maintaining the following minimum F(F) Floor Flatness and F(L) Floor Levelness values when measured in accordance with ASTM E 1155/ASTM E 1155M.
  - 1. F(F): Specified Overall Value (SOV) of 35; Minimum Localized Value (MLV) of 24.
  - 2. F(L): Specified Overall Value (SOV) of 25; Minimum Localized Value (MLV) of 17.
- P. Screed suspended slabs level, maintaining the following minimum F(F) Floor Flatness and F(L) Floor Levelness values when measured in accordance with ASTM E 1155/ASTM E 1155M.
  - 1. F(F): Specified Overall Value (SOV) of 25; Minimum Localized Value (MLV) of 17.
  - 2. F(L): Specified Overall Value (SOV) of 20; Minimum Localized Value (MLV) of 13.

### 3.05 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Concrete Slabs: Finish to requirements of Section 03356.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
  - 1. Wood float surfaces that will receive quarry tile, ceramic tile, and terrazzo with full bed setting system.
  - 2. Steel trowel surfaces that will receive carpeting, resilient flooring, seamless flooring, thin set quarry tile, and thin set ceramic tile.
  - 3. Steel trowel surfaces that will be left exposed.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains as indicated on drawings.

### 3.06 CURING AND PROTECTION

- A. Comply with requirements of ACI 308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
  - 1. Normal concrete: Not less than 7 days.
  - 2. High early strength concrete: Not less than 4 days.
- C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- D. Surfaces Not in Contact with Forms:
  - 1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
  - 2. Slabs on Grade: Continuously moist cure concrete slabs on grade for seven days minimum. Water fog sprays, ponding, saturated absorptive covers, or moisture retaining covers may be used. Curing compounds are not acceptable.
  - 3. Begin final curing after initial curing but before surface is dry.
    - a. Moisture-retaining cover: Seal in place with waterproof tape or adhesive.
    - b. Curing compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

### 3.07 MECHANICAL ANCHORS

- A. Expansion, wedge, drop-in, shell and sleeve anchors shall conform with the requirements in the drawings.

### 3.08 ADHESIVE ANCHORS AND ADHESIVE DOWELS

- A. Adhesive anchors and dowels shall conform with the requirements in the drawings.

### **3.09 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01400.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to the owner's inspection and testing firm for review prior to commencement of concrete operations. Mix designs must include slump and compression test reports, and slab on grade concrete must include shrinkage test reports.
- D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
- E. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cu yd or less of each class of concrete placed.
- F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C 143/C 143M.

### **3.10 DEFECTIVE CONCRETE**

- A. Test Results: The testing agency shall report test results in writing to the Owner's Representative within 24 hours of test.
- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Owner's Representative. The cost of additional testing shall be borne by when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Owner's Representative for each individual area.
- E. MISCELLANEOUS
  - 1. A. Construction Waste: In accordance with Section 01500.

**END OF SECTION**

## SECTION 05120

### STRUCTURAL STEEL

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Structural steel as indicated on the drawings and defined in the American Institute of Steel Construction (AISC) "Code of Standard Practice".
- B. Base plates and shear stud connectors.
- C. Grouting under base plates.
- D. Shop priming of structural steel.
- E. Shop galvanizing of structural steel.

##### 1.02 RELATED SECTIONS

- A. Section 09900 - Paints and Coatings

##### 1.03 REFERENCES

- A. AISC Manual of Steel Construction - Load & Resistance Factor Design (LRFD); American Institute of Steel Construction, Inc.; 13th Edition.
- B. AISC "Seismic Provisions for Structural Steel Buildings"; American Institute of Steel Construction, Inc.; latest edition.
- C. AISC S303 - Code of Standard Practice for Steel Buildings and Bridges; American Institute of Steel Construction, Inc.; latest edition .
- D. AISC S348 - Specification for Structural Joints Using ASTM A325 or A490 Bolts; latest edition
- E. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel; latest edition.
- F. ASTM A 53/A 53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; latest edition.
- G. ASTM A 108 - Standard Specification for Steel Bars, Carbon, Cold Finished, Standard Quality; latest edition.
- H. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; latest edition.
- I. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; latest edition.
- J. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength; latest edition.
- K. ASTM A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength; latest edition.
- L. ASTM A 449 - Standard Specification for Quenched and Tempered Steel Bolts and Studs; latest edition.
- M. ASTM A 500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; latest edition.
- N. ASTM A 501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; latest edition.
- O. ASTM A 563 - Standard Specification for Carbon and Alloy Steel Nuts; latest edition.

- P. ASTM A 572/A 572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; latest edition.
- Q. ASTM A 992/A 992M - Standard Specification for Steel for Structural Shapes for Use in Building Framing; latest edition.
- R. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); latest edition.
- S. ASTM E 94 - Standard Guide for Radiographic Examination; latest edition.
- T. ASTM E 164 - Standard Practice for Ultrasonic Contact Examination of Weldments; latest edition.
- U. ASTM E 165 - Standard Test Method for Liquid Penetrant Examination; latest edition.
- V. ASTM E 709 - Standard Guide for Magnetic Particle Examination; latest edition.
- W. ASTM F 436 - Standard Specification for Hardened Steel Washers; latest edition.
- X. ASTM F 959 - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners; latest edition.
- Y. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105 ksi Yield Strength; latest edition.
- Z. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; American Welding Society; latest edition.
- AA. AWS D1.1 - Structural Welding Code - Steel; American Welding Society; latest edition.
- AB. SSPC-Paint 15 - Steel Joist Shop Primer, Society for Protective Coatings; latest edition.
- AC. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; latest edition.
- AD. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; latest edition.

#### **1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  1. Submit complete shop and erection drawings for the work required in this section.
  2. Indicate sizes, spacing, locations and cambers of structural members, dimensional locations of edge of slab and openings, connections, attachments, fasteners, and anchor bolt/rod setting plans.
  3. Indicate all shop and erection details, including cuts, copes, connections, holes, threaded fasteners and welds.
  4. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.
  5. If more than one submittal is required, shop and erection drawings must be as complete as possible for first submittal. Indicate which sections of the shop and erection drawings are not complete prior to submitting for review.
  6. Should more than one submittal be required, later submittals shall clearly identify material added or revised subsequent to previous submittal.
  7. Coordinate shop drawings with the trades performing the work of Divisions 15 and 16. All holes and openings in beams for passage of ducts and pipes shall be shown on shop drawings and shall be made in the shop.

8. Identify details in shop drawings by reference to detail numbers or plans on drawings. Indicate where welds are to be finished and ground smooth.
9. Coordinate location of steel members with elevator shop drawings prior to submitting steel shop drawings for review.
10. Mill Certificate: Certify that products meet or exceed specified requirements.
11. Mill Reports:
  - a. Submit the mill report for each heat of steel used, and for all fasteners provided prior to the start of fabrication.
  - b. Mill reports shall show chemical content and mechanical properties of the material provided.
  - c. Mill reports shall be traceable to individual pieces of steel used.
12. Submit certificate of compliance for all welding consumables used on this project.
13. Submit the filler metal manufacturer's technical data sheet for each electrode. Include charpy v-notch properties of electrodes for all welds part of the lateral load resisting system, where denoted CVN on drawings. The filler metal manufacturer's typical Certificate of Conformance is acceptable for proof of conformance to this requirement.
14. Submit current valid certificates issued by an independent testing agency for all welders, welding operators, and tack welders verifying qualification within the previous 12 months. Submit recertification data for each welder required to prequalify.
15. Submit fastener installation procedures and tightening of high strength bolted connections in accordance with Section 8 of AISC Specification for Structural Joints Using ASTM A325 or A490 Bolts, indicating type of connection as defined by AISC.
16. Submit proposed sequence of welding to obtain acceptance by the Owner's Representative and before beginning work. Weld sequence shall be planned to minimize residual stress due to weld shrinkage.
17. Submit Contractor's Fabrication/Erection Inspector qualifications.
18. Manufacturers data: Submit manufacturer's data on paint primer to be used on structural steel, including evidence that primer used beneath sprayed fireproofing is acceptable to the fireproofing manufacturer.
19. Welding Procedure:
  - a. Submit written welding procedures for all welding on the project for use by the Testing Laboratory.
20. Review of shop drawings shall not relieve the Contractor from compliance with the requirements of the Structural Drawings and Specifications. The omission from shop drawings of any material shown or specified on the original Structural Drawings shall not relieve the Contractor of the responsibility for furnishing and installing such materials even though such shop drawings may have been returned with no exceptions observed.

#### **1.05 QUALITY ASSURANCE**

- A. Qualification of Welders:
  1. All welding shall be performed by operators who are qualified for the types of welds used. Each operator shall have been qualified as prescribed by AWS D1.1. Welder qualification shall include passing the bend test.
  2. Require welders to retake qualification test if, as determined by the Owner's Representative, there is a reasonable doubt as to the proficiency of the welder. If the welder does not re-qualify, they shall not be employed on this Project.
  3. Contractor shall pay all costs associated with welder qualification.
  4. Each welder working on the project shall be qualified for each process and position as a result of having performed a weld qualification test using the consumables and procedures to be used on this project.
  5. Owner's Quality Assurance: Shop fabrication and field erection of steel indicated on the Structural Drawings will be inspected by an independent testing laboratory retained by the Owner.
    - a. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrication procedures in compliance with the Contract Documents.

- b. The minimum special inspection and testing required beyond LRFD specification, Section M5 shall be as follows:
  - 1) Visual inspection shall be the primary method used to confirm that the procedures, materials, and workmanship incorporated in construction are those that have been specified and reviewed for the project.
  - 2) Non-destructive testing of welds in conformance with AWS D1.1 shall serve as a backup, but shall not serve to replace visual inspection.
  - 3) All complete-joint-penetration and partial-joint-penetration groove joints shall be tested using approved non-destructive methods conforming to AWS D1.1.
6. Fabricator: Shop must be an AISC Quality Certified Fabricator for Complex Steel Building Structures.
7. Erector: Company specializing in performing the work of this section with minimum 10 years of documented experience.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Structural steel furnished for each location shall provide the minimum yield point given in the drawings, shall conform to the applicable ASTM steel specification, shall meet the requirements of the IBC; latest edition, shall be suitable for use in welded structures and shall meet the requirements both of the drawings and of this Specification. All materials shall be new and of the best commercial quality. Steel produced to modified ASTM specifications shall not be used without the Architect's prior written acceptance.
  1. Provide recycled steel in accordance with Recycled Content provisions of Section 01600. Provide highest-percentage recycled steel available (minimum 80% recycled content for all structural steel as an aggregate).
  2. Provide local/regional materials in accordance with Local/Regional Materials provisions of Section 01600.
  3. Wide flanges: ASTM A992
    - a. ASTM A6 Group 3 shapes with flanges 1 1/2-in. thick and thicker, ASTM Groups 4 and 5 shapes, and plates that are 1 1/2-in. thick or thicker in built-up cross sections shall have a minimum charpy v-notch (CVN) toughness of 20 ft. lbs. at 70 degrees Fahrenheit, determined as specified in LRFD Specification Section A3.1c.
  4. Channels, angles, & other rolled shapes: ASTM A36
  5. All plates, 10 gage and heavier, unless otherwise noted: ASTM A572, Grade 50
  6. Deck closure plates: ASTM A36
  7. Steel Pipe: ASTM A53, Grade B
  8. Cold formed Hollow Structural Sections (HSS): ASTM A500, Grade B
  9. Bolts: ASTM A325X or ASTM A490X, as indicated on the drawings.
  10. Machine bolts: ASTM A307
  11. Anchor bolts: ASTM F1554, Grade 55
  12. Anchor rods: ASTM A572, Grade 50
  13. Threaded and hanger rod: ASTM A572, Grade 50
  14. Welded shear connectors (Automatic End Welded Studs): Headed stud type, ASTM A 108, Grade 1015 through 1020, minimum tensile strength of 60,000 psi; sizes and numbers as indicated, and dimensions complying with AISC Specifications. Shall be Nelson/TRW or approved equivalent.
  15. Nuts for bolts and machine bolts: ASTM A563
  16. Hardened washers: ASTM F436
  17. Unhardened washers: ASTM F844
  18. Plain washers: ANSI B18.22.1
  19. Beveled washers: ANSI B18.23.1
  20. Welding Electrodes:
    - a. As required by AISC "Specification for Structural Steel Buildings" and the AWS Code. Base selection of electrode on the actual properties of the metal connected.
    - b. As a minimum, use E70 electrodes. Use E80 electrodes minimum at reinforcing steel.

- c. Use low hydrogen electrodes unless noted otherwise.
  - d. For all welds part of the lateral load resisting system, where denoted CVN on drawings: Minimum charpy v-notch toughness of 20 ft. lb. at -20 degrees Fahrenheit and 40 ft. lb. at 50 degrees Fahrenheit.
21. All steel to be welded shall conform to chemical and metallurgical limitations specified in AWS D1.1 and D1.3.
  22. Grout: Non-shrink, non-metallic aggregate type, complying with ASTM C 1107 and capable of developing a minimum compressive strength of 7,000 psi at 28 days.
  23. Shop and Touch-Up Primer for interior steel: Fabricator's standard, SSPC-Paint 13 or SSPC-Paint 2, complying with VOC limitations of authorities having jurisdiction.
  24. Primer paints shall be compatible with the finish paints specified elsewhere.
  25. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard, SSPC-Paint 20, Type I - Inorganic, or SSPC-Paint 20, Type II - Organic, complying with VOC limitations of authorities having jurisdiction.

## 2.02 FABRICATION

- A. Shop fabricate to greatest extent possible.
- B. Space shear stud connectors as shown in the drawings.
- C. Perform shop fabrication in the shop of an AISC Quality Certified Fabricator for Complex Steel Building Structures.
- D. Fabrication and Erection to conform with the requirements of the current issue of the "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", and Commentary and Supplements, including Section 10 "Architecturally Exposed Structural Steel" for structural steel that will remain exposed in the finished work.
- E. Wire brush and clean materials to remove loose mill scale and rust before fabricating steel.
- F. Punch or drill all holes 1 1/2 inches or less in diameter. Holes that must be larger than 1 1/2 inches in diameter may be burned if approved by the Owner's Representative prior to fabrication.
- G. Welding shall comply with AWS D1.1:
  1. Contractor is responsible for selection of specific materials and procedures except as specifically noted in Contract Documents.
  2. The need for pre-heat and other procedures are to be based on the actual chemistry and mechanical properties and not solely on the grade for which the steel was certified.
  3. When selecting materials and procedures as a minimum, consideration shall be given to the need for pre- and post-heat.
  4. When selecting materials and procedures as a minimum consider the actual restraint in the structure.
  5. Weld variables shall be consistent with the recommendations of the electrode manufacturer.
  6. All tack welds shall be incorporated into the welds specified on the drawings. Tack welds that cannot be incorporated into the final weld assembly shall be removed and the areas ground smooth.
  7. All groove or butt welds shall be full penetration unless noted otherwise on the drawings.
  8. Use stringer beads only (no weaving).
  9. Do not weld into the flange to web intersection of wide flange members.
  10. Where structural steel members are to remain exposed in the finished work, welds exposed to view shall be uniformly made and ground smooth.
  11. Sequence the work as necessary for testing.
  12. Remove run-off tabs and backup bars that extend beyond the edges of the connected parts of the joint. Cut to a contoured transition to within 1/8 inch of the connected parts of the joint. Grind surfaces as required to reach a maximum surface roughness of 500 micro inches.



13. Remove weld splatter where it interferes with architectural treatment.
14. Splices of members in tension, members of moment frames, and or plates more than 2 inches thick shall be made in conformance with Section J1.5 of the LRFD "Specification for Structural Steel Buildings."
15. Headed studs shall be installed in accordance with AWS D1.1.
16. Bolts, General:
  - a. Machine bolts shall be brought to a snug tight condition so as to prevent excessive movement in the connection materials.
  - b. High strength bolts shall be installed in accordance with "Specification for Structural Joints Using ASTM A325 or A490 Bolts". Pretension all bolts by the turn-of-nut method. Alternative design bolts (twist-off type) may be used when the connected materials have a total thickness of 1 1/2 inches or less.
  - c. Complete flange welds in moment connections prior to final tightening of high strength bolts.
  - d. When fully tensioned high strength bolts have been loosened, re-torque or replace A325 bolts. Galvanized A325 and all A490 bolts must be replaced.
  - e. Bolts shall be of a length that will extend entirely through but not more than 1/4-inch beyond the nuts unless otherwise shown on the drawings.
  - f. Washers shall be used at all bolts. Use beveled washers where bolts bear on sloping surface.
  - g. Bolts shall be installed such that no threads occur in the shear plane.
  - h. Manufacturers symbol and grade markings shall appear on all bolts and nuts.
  - i. Product containers must be marked so that correspondence with mill reports can be established.
  - j. Use standard holes unless otherwise indicated on the drawings.
  - k. Provide weld washers as shown on the drawings at oversized holes in column base plates.
  - l. Slotted holes shall be short slotted unless otherwise noted in the drawings.
  - m. Deform threads or weld nuts to anchor rods when nuts are embedded in concrete. Do not weld high strength anchor bolts/rods, including A325, A490, A354, A449 and A687.

### 2.03 FINISH

- A. Prepare structural component surfaces in accordance with SSPC SP6 Commercial Blast Cleaning where the structural steel is exposed, and SSPC SP1 Solvent Cleaning, SP2 Hand Tool Cleaning and SP3 Power Tool Cleaning as applicable at other locations, as well as the primer and finishing paint manufacturers recommendations.
- B. For structural steel surfaces incorporated as part of slip critical bolted connections, prepare surface in accordance with "Class A" requirements as defined by AISC, unless otherwise noted.
- C. Shop prime structural steel members. Do not prime the following surfaces: reinforcing steel, welded shear studs, machined surfaces, four inches on each side of field welds, surfaces around and held together by high strength bolts, surfaces encased in concrete or cementitious fireproofing, and tops of beam flanges directly supporting metal decking.
- D. Galvanize structural steel members that are exposed to weather to comply with ASTM A 123. Provide minimum 1.3 oz/sq. ft. galvanized coating.
- E. Field Touch-Up: Field touch-up shall be provided at all blocked areas and points of damage, including bolts and welds installed after coating.

### 2.04 SOURCE QUALITY ASSURANCE

- A. As a minimum, provide all testing and inspection per the requirements of the California Building Code.
- B. All shop and field welding shall be inspected by a qualified and certified Inspector as defined by AWS D1.1, employed by the Owner's Testing Agency in accordance with AWS D1.1 and in

accordance with the Special Inspection Requirements of the California Building Code. The Inspection personnel shall be qualified for nondestructive testing at Level II as specified in AWS D1.1, supervised by a Level III CWI. The Testing Agency shall submit welding inspector qualifications to the Architect for approval. The Testing Agency shall submit a welding inspection checklist to the Architect for approval.

- C. Inspections: Inspection of shop and field welding operations as follows:
1. As a minimum, provide all testing and inspection per the requirements of the California Building Code.
  2. Review all Welding Procedure Specifications (WPS) and Prequalification Records (PQR)
  3. Verify that AWS qualified procedures are used, including proper use of preheat.
  4. Check materials, equipment, procedures, fit and tolerances.
  5. Inspect every weld for quality and conformance. As a minimum visually inspect all welds. Visual inspection of multi-pass welds shall be continuous.
  6. Make symmetric record of all welds, including:
    - a. Location and type of weld.
    - b. Identification marks of welders.
    - c. List of defective welds.
    - d. Manner of correction of defects.
      - 1) Take samples of all welding consumables and store in sealed containers.
    - e. Non-Destructive Testing:
      - 1) Test 100 percent of full penetration welds. Do not reduce testing frequency unless permission is obtained from Owner's Representative.
      - 2) Test 20 percent of total length of all welds joining web plates to flanges.
      - 3) Base metal thicker than 1-1/2 inches, when subjected to through-thickness weld shrinkage strains, shall be ultrasonically inspected for discontinuities directly behind such welds after joint completion. Any material discontinuities shall be accepted or rejected on the basis of the defect rating in accordance with flaw severity, Class B criteria in Table 8.15.3 in AWS D1.1.
      - 4) Test 100 percent of partial penetration and complete penetration groove welds used in column splices. Testing is not required at partial penetration groove welds with an effective throat of less than 3/4 inch, provide continuous special inspection is required. Do not reduce testing frequency unless permission is obtained from the Owner's Representative.
      - 5) Type of tests:
        - (a) Full penetration welds to plates and shapes to be ultrasonic tested.
        - (b) Full penetration welds to pipes and tubes to be tested using magnetic particle tests.
        - (c) Partial penetration welds to be ultrasonic tested.
        - (d) Use magnetic particle test methods for fillet welds.
        - (e) At Inspector's option magnetic particle or dye penetrant testing will be used.
  7. Tests of High Strength Bolts, Nuts and Washers:
    - a. Test bolts, nuts, and washers in accordance with the "Specification for Structural Joints Using ASTM A325 or A490 Bolts" for each size and grade. Test each lot of bolts, nuts and washers.
  8. Testing of End-Welded Studs:
    - a. End-welded studs shall be random sampled and tested from stock furnished to each project. Tests shall meet the requirements in Table 7.3.1 of ASTM D1.1. The minimum number of tests of each required property shall be as follows:
    - b. Number of Pieces to be used from Identified Package Number of Specimen
 

1) 150 and less	1
2) 151 to 280	2
3) 281 to 500	3
4) 501 to 1200	5
5) 1201 to 3200	8
6) 3201 to 10,000	13

7) 10,001 and over

20

c. Qualify and test welded studs in accordance with AWS D1.1, Sections 7.6 and 7.7.

9. Mill Reports:

a. Testing Laboratory will review all mill reports for conformance to referenced standard.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

#### **3.02 ERECTION**

- A. Erect structural steel in compliance with AISC "Code of Standard Practice for Steel Buildings and Bridges".
- B. Allow for erection loads, and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Ream holes that need to be enlarged to admit bolts. The maximum hole diameter is 1/16-inch larger than the bolt used. Use the next larger bolt size as required.
- D. Erection bolts for welded connections shall be tightened securely and left in place. Install high-strength bolts in accordance with AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".
- E. Do not field cut or alter structural members without approval of Owner's Representative. Do not use gas cutting torches in the field for correction of fabrication errors unless accepted by the Owner's Representative.
- F. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.
- G. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for non-shrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees unless otherwise noted in the drawings. Tighten anchor bolts after supporting members have been positioned and plumbed.

#### **3.03 ERECTION TOLERANCES**

- A. Conform to the tolerances of the AISC "Code of Standard Practice for Steel Buildings and Bridges."
- B. Conform to the tolerances of the AISC "Code of Standard Practice for Steel Buildings and Bridges", Section 10 (AESS) for architecturally exposed structural steel as indicated on the structural and architectural drawings.
- C. Braced frame connection tolerances:
  - 1. Verify that the 2t minimum, 4t maximum offset from the yield line to brace end is maintained at each end of the brace.

2. Verify that the 2-inch minimum offset from the brace to the edge of the gusset plate is maintained and that the gusset plate edge slopes are the same slopes as shown on Shop Drawings and Structural Drawings.
3. Verify that the gusset plate yield lines are isolated from the concrete slabs as shown on the Structural Drawings. Verify that the gusset plate stiffeners do not extend beyond yield line.

### **3.04 FIELD QUALITY CONTROL**

- A. All field welding shall be inspected by a full time inspector employed by an independent testing laboratory.
- B. High strength bolting shall be inspected by the Testing Agency in conformance with the "Specification for Structural Joints using ASTM A325 or A490 Bolts" as approved by the Research Council on Structural Connections of the Engineering Foundation. Fully tensioned bolts that are identified as "Slip Critical (SC)" on the Contract Documents shall also be tested and inspected as follows:
  1. Ensure faying surfaces meet the specified preparation prior to bolting.
  2. Observe the bolt installation demonstration testing and the calibration procedures.
  3. Monitor the installation of bolts to verify that the selected installation procedure has been used to tighten all bolts to the minimum pretensioning specified in Table 4 of the "Specification for Structural Joints using ASTM A325 or A490 Bolts"
  4. Field quality control shall, as a minimum, conform to the requirements specified under Source Quality Assurance.
- C. 3.05 MISCELLANEOUS
  1. D. Construction Waste: In accordance with Section 01500.

**END OF SECTION**

## SECTION 05520

### HANDRAILS AND RAILINGS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Wall mounted handrails.
- B. Stair railings and guardrails.

##### 1.02 RELATED REQUIREMENTS

- A. Section 03300 - Cast-in-Place Concrete: Placement of anchors in concrete.
- B. Section 09260 - Gypsum Board Assemblies: Placement of backing plates in stud wall construction.
- C. Section 09900 - Paints and Coatings: Paint finish.

##### 1.03 REFERENCE STANDARDS

- A. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2010a.
- B. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.

#### PART 2 PRODUCTS

##### 2.01 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.
- B. Allow for expansion and contraction of members and building movement without damage to connections or members.
- C. Dimensions: See drawings for configurations and heights.
  - 1. Posts: 1-1/2 inches diameter, round.
- D. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
  - 1. For anchorage to stud walls, provide backing plates, for bolting anchors.
- E. Provide slip-on non-weld mechanical fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

##### 2.02 STEEL RAILING SYSTEM

- A. Steel Tube: ASTM A 500, Grade B cold-formed structural tubing.
- B. Non-Weld Mechanical Fittings: Slip-on, galvanized malleable iron castings, for Schedule 40 pipe, with flush setscrews for tightening by standard hex wrench, no bolts or screw fasteners.
- C. Exposed Fasteners: No exposed bolts or screws.

##### 2.03 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to

building structure.

- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.

#### **3.02 PREPARATION**

- A. Clean and strip primed steel items to bare metal where site welding is required.

#### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Anchor railings securely to structure.
- D. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

**END OF SECTION**

## SECTION 06100

### ROUGH CARPENTRY

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Structural dimension lumber framing.
- B. Exposed timber structural framing.
- C. Rough opening framing for doors, windows, and roof openings.
- D. Structural floor, wall, and roof framing.
- E. Built-up structural beams and columns.
- F. Floor, wall, and roof sheathing.
- G. Subflooring.
- H. Roof-mounted curbs.
- I. Preservative treatment of wood.
- J. Miscellaneous framing and sheathing.
- K. Telephone and electrical panel boards.

##### 1.02 RELATED SECTIONS

- A. Section 03100 - Concrete Forms and Accessories.
- B. Section 03300 - Cast-In-Place Concrete.
- C. Section 05120 - Structural Steel.

##### 1.03 REFERENCES

- A. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; latest edition.
- B. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; latest edition.
- C. AWPA C2 - Lumber, Timber, Bridge Ties and Mine Ties -- Preservative Treatment by Pressure Processes; American Wood-Preservers' Association; latest edition.
- D. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); latest edition.
- E. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); latest edition.
- F. WCLB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; latest edition.
- G. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association; latest edition.

##### 1.04 QUALITY ASSURANCE

- A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.

- B. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

## **PART 2 PRODUCTS**

### **2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. Species: Douglas Fir-Larch, unless otherwise indicated.

### **2.02 DIMENSION LUMBER**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: As indicated in the drawings.

### **2.03 CONSTRUCTION PANELS**

- A. As indicated in the drawings.
- B. Miscellaneous Panels:
  - 1. Concealed Plywood: PS 1, C-C Plugged, exterior grade.
  - 2. Exposed Plywood: PS 1, A-D, interior grade.
  - 3. Electrical Component Mounting: APA rated sheathing, fire retardant treated.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Coordinate installation of rough carpentry members specified in other sections.

### **3.02 FRAMING INSTALLATION**

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices unless otherwise specifically detailed.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes.
- E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- F. Frame openings with two or more studs at each jamb; support headers on cripple studs as indicated in the drawings.

### **3.03 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.



- B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- C. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

### **3.04 INSTALLATION OF CONSTRUCTION PANELS**

- A. Roof Sheathing: Secure panels perpendicular to framing members, with ends staggered and sheet ends over firm bearing.
  - 1. Provide solid edge blocking between sheets.
  - 2. Nail panels to framing as indicated in the drawings; staples are not permitted.
- B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails as indicated in the drawings.

### **3.05 TOLERANCES**

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Surface Flatness of Floor: 1/8 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.
- C. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

### **3.06 3.06 MISCELLANEOUS**

- A. A. Construction Waste: In accordance with Section 01500.

**END OF SECTION**

## SECTION 06200

### FINISH CARPENTRY

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Finish carpentry items.
- B. Wood casings and moldings.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 06410 - Custom Cabinets: Shop fabricated custom cabinet work.
- C. Section 08211 - Flush Wood Doors.
- D. Section 08550 - Wood Windows.
- E. Section 09900 - Paints and Coatings: Painting and finishing of finish carpentry items.

##### 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.
- B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements for submittal procedures.
- B. Samples: Submit two samples of wood trim 8 inch long.

##### 1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

##### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.

#### PART 2 PRODUCTS

##### 2.01 FINISH CARPENTRY ITEMS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Premium Grade.
- B. Interior Woodwork Items:
  - 1. Moldings, Bases, Casings, and Miscellaneous Trim: Clear white pine; prepare for paint finish.

##### 2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

##### 2.03 PLASTIC LAMINATE MATERIALS

- A. Plastic Laminate: NEMA LD 3, HGS; TBD color; textured, low gloss finish; TBD manufactured by TBD.
- B. Laminate Adhesive: Type recommended by laminate manufacturer to suit application; not

containing formaldehyde or other volatile organic compounds.

## **2.04 FABRICATION**

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

### **3.02 INSTALLATION**

- A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

### **3.03 PREPARATION FOR SITE FINISHING**

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- B. Site Finishing: See Section 09900.
- C. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

### **3.04 TOLERANCES**

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

**END OF SECTION**

## SECTION 06410

### CUSTOM CABINETS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Countertops.
- C. Cabinet hardware.
- D. Factory finishing.
- E. Preparation for installing utilities.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Support framing, grounds, and concealed blocking.

##### 1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

##### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from moisture damage.

#### PART 2 PRODUCTS

##### 2.01 CABINETS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Custom Grade.
- B. Plastic Laminate Faced Cabinets: Custom grade.
- C. Breakroom Cabinets: Plastic laminate faced, Custom grade.

##### 2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

##### 2.03 LAMINATE MATERIALS

- A. Manufacturers:
  - 1. Formica Corporation; Product TBD: [www.formica.com](http://www.formica.com).
  - 2. Wilsonart International, Inc; Product TBD: [www.wilsonart.com](http://www.wilsonart.com).
  - 3. Nevamar; Product TBD.
  - 4. Substitutions: See Section 01600 - Product Requirements.

##### 2.04 COUNTERTOPS

- A. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL, conventionally fabricated and self-edge banded.

##### 2.05 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.

- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized finish in concealed locations and stainless steel finish in exposed locations.
- D. Concealed Joint Fasteners: Threaded steel.

## **2.06 HARDWARE**

- A. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers.
- B. Catches: Magnetic.
- C. Drawer Slides:
  - 1. Type: Full extension.
  - 2. Static Load Capacity: Commercial grade.
  - 3. Mounting: Side mounted.
  - 4. Features: Provide self closing/stay closed type.
- D. Hinges: European style concealed self-closing type, steel with polished finish.

## **2.07 FABRICATION**

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- E. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

### **3.02 INSTALLATION**

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- B. Use concealed joint fasteners to align and secure adjoining cabinet units.
- C. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- D. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

### **3.03 ADJUSTING**

- A. Adjust installed work.

**END OF SECTION**

## SECTION 07212

### BOARD AND BATT INSULATION

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Batt insulation in interior wall, ceiling, and roof construction.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Supporting construction for batt insulation.
- B. Section 09260 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

#### PART 2 PRODUCTS

##### 2.01 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
  - 1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
- C. Mineral Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
  - 1. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

##### 3.02 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in interior wall and ceiling spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

END OF SECTION

## SECTION 07540

### PVC THERMOPLASTIC MEMBRANE ROOFING

#### PART 1 - GENERAL

##### 1.01 SUMMARY

###### A. Work includes:

1. Install an adhered thermoplastic PVC roofing system including membrane, rigid
  - a. thermal insulation, flashings and other components, including but not limited to
  - b. the following:
  - c. Fasteners for Cover Board and Insulation
  - d. R30 Polyisocyanurate insulation.
  - e. Approved Siliconized Gypsum Cover board
  - f. Water Based Adhesive for membrane attachment
  - g. Glass Fiber Reinforced 60 mils PVC Roof Membrane
  - h. PVC Clad Edge Metal and fasteners
  - i. Low VOC Contact Adhesive for Flashings
  - j. Glass Fiber Reinforced PVC Flashing Membrane
  - k. Heavy Duty Flexible Walkways
  - l. Other Metal Flashings
  - m. Sealants
  - n. Related work includes
    - 1) As Needed - Sheet Metal Flashing and Trim - see drawings
    - 2) As needed - Miscellaneous Rough Carpentry - see drawings
  - (a) QUALITY ASSURANCE
  - o. Qualifications of Manufacturer:
  - p. Roofing materials shall be the product of a manufacturer regularly engaged in direct
    - 1) manufacturer of this product for not less than the warranty term (20 years).
  - q. Use only a Manufacturer who has initiated a post consumer recycling program and can demonstrate a minimum of five projects where the existing PVC roof has been removed and recycled into new roofing membrane or PVC components.
  - r. Use only a Manufacturer certified ISO 14001: 2004 and RC 14001: 2008 responsible care.
  - s. Membrane thicknesses stated in this document are waterproofing membrane PVC
    - 1) polymer thicknesses. If polyester felt/fleece backing is specified the thickness of the
    - 2) felt/fleece is always in addition to the required membrane thickness and is measured in a
    - 3) weight per square yard. Where required the stated fleece weight is a non negotiable
    - 4) minimum requirement.
  - t. Unreinforced or polyester reinforced membrane flashings are prohibited.
  - u. No "Private Label" or third party membrane manufacturers are approved alternates.
  - v. Qualifications of Roofer: The Roofing Contractor must be authorized by Manufacturer prior to bid.
  - w. No deviation from the Project Specification or the approved shop drawings is permitted without prior written approval by the Owner, the Owner's Representative and Manufacturer.
  - x. Only Applicator personnel trained and authorized by manufacturer are permitted to
    - 1) complete work pertaining to the installation of membrane and flashings.
  - y. Verify the roof deck and roof construction is structurally sound to provide support for the new roof system.

- z. Regulatory requirements: These requirements are minimum standards do no roofing work without written documentation of the system's compliance, as required in the "Submittals" section of this specification.
  - 1) Field and Flashing membranes shall conform to ASTM D4434 (latest version),
    - (a) "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II Grade
    - (b) Factory Mutual Research Corporation (FM) Norwood, MA3. Class 1-904. Underwriters Laboratories, Inc. Northbrook, IL5. Class A assembly

## 1.02 SUBMITTALS

### 1.03 Make submittals in accordance with the requirements of Section 01330.

- A. Copy of the ASTM Certification for the named product showing Type II Class I fiberglass
  - 1. reinforced roofing membranes.
    - a. Samples of each primary component to be used in the roof system and the
      - 1) manufacturer's current literature for each component.
    - b. Sample copy of Manufacturer's warranty.
    - c. Evidence that the proposed roof system meets the requirements of the local building
      - 1) code and has been tested and approved or listed by the required test organizations.
    - d. Sample copy of Applicator's NDL warranty.
    - e. Material Safety Data Sheets (MSDS)
    - f. Letter from proposed Roofing Manufacturer indicating the actual polymer thickness of the product supplied for this project is 60 mils. Polymer thickness variance shall not exceed  $\pm$  two (2) mils.
    - g. Letter from proposed Roofing Manufacturer indicating the actual weight of the product supplied for this project.
    - h. Written confirmation from the proposed Roofing Manufacturer stating the number of years it has directly manufactured the roof system under the trade names and/or trademarks as proposed.
    - i. Submittals With Bid:
      - 1) When submitting the bid package for this project, bidder must submit a separate letter from the specified and/or approved Roofing Manufacturer(s). The letter must be signed and on the Roofing Manufacturer's approved company letterhead, and must indicate the date that the bidder became an approved applicator. All bids that are submitted without the accompanying letter as described, and/or include letters that do not indicate compliance with the five (5) year experience requirement will not be accepted at time of bid opening.

### 1.04 PRE-INSTALLATION MEETINGS

- A. Convene a pre installation meeting.
- B. The meeting shall discuss all aspects of the project including but not limited to:
  - 1. Safety
  - 2. Set up
  - 3. Construction schedule
  - 4. Contract conditions
  - 5. Coordination of the work

### 1.05 SUSTAINABLE DESIGN REQUIREMENTS

- A. Comply with the requirements of Section 01351 and 01352.
- B. Waste disposal: Comply with the requirements of Section 01524.
- C. Comply with applicable requirements of California Green Building Code.



## **1.06 HANDLING**

- A. Comply with the requirements of Section 01600. Accept only products delivered to the job site in the original unopened containers or wrappings bearing all seals and approvals.
  - 1. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
  - 2. Store Membrane rolls lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted.
  - 3. Store all adhesives at temperatures between 40° F and 80° F.
  - 4. Store flammable materials in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
  - 5. Remove all damaged materials from the job site.
  - 6. Load materials on the rooftop in such a manner to eliminate risk of deck overload due to concentrated weight.

## **1.07 PROJECT CONDITIONS**

- A. Schedule and execute all work without exposing the interior building areas to the effects of inclement weather.
- B. Secure all new and temporary construction, including equipment and accessories, to preclude wind blow-off and roof or equipment damage.
- C. Install uninterrupted waterstops at the end of each day's work. Completely remove before proceeding.

**1.08 Prior to and during application, remove all excessive moisture, dirt, debris and dust.**

**1.09 Immediately take all existing and new roofing, insulation, flashings and metal work**

**1.10 removed during construction to a legal dumping area authorized to receive such**

**1.11 materials.**

**1.12 If any water is allowed to enter under the newly completed roofing, remove wet and**

**1.13 damaged materials, provide new.**

## **1.14 SEQUENCING**

- A. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Provide a substantial protection layer consisting of plywood over Sarnafelt or plywood over insulation board for all roof areas that receive concentrated rooftop traffic during construction.
- B. WARRANTY
- C. Upon successful completion of work the following warranties must be provided:
- D. 20 Year Full System Warranty (60 mph maximum wind speed)
- E. 2 Year Roofing Contractor Warranty
- F. Manufacturers System Warranty
- G. Provide a "No Dollar Limit" non-prorated warranty that does not exclude ponding
- H. or standing water or contain time limits for standing water. No additional fees or
- I. roofing manufacturer inspections will be required to maintain the warranty. The
- J. System Warranty includes membrane, insulation, coverboard and attachment

- K. components of the roofing system provided by the Manufacturer.
- L. Applicator/Roofing Contractor Warranty
- M. Provide a separate workmanship warranty. In the event any work related to
- N. roofing, flashing, or metal is found to be within the Applicator warranty term,
- O. defective or otherwise not in accordance with the Contract Documents, the
- P. Applicator shall repair that defect at no cost to the Owner. The Applicator's
- Q. warranty obligation shall run directly to the Owner, and be copied to the
- R. Manufacturer.

## **PART 2- PRODUCTS**

### **2.01 MANUFACTURERS**

- A. The components of the PVC roof system are to be products of basis of design Sika Sarnafil, Canton MA (contact Paul Phillips 310 528 3348).

### **2.02 2.2 MATERIALS**

- A. PVC fiberglass reinforced membrane with a lacquer coating.
- B. Membrane shall conform to ASTM D4434 (latest version), "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II, Grade I.
  - a. Field Sheet - Glass Fiber Reinforced PVC, 60 mils of PVC. Membrane weight minimum 0.36lbs/sqft. Color T24 compliant White
  - b. Flashing Membranes Glass Fiber Reinforced PVC 60mils thickness with
    - 1) fiberglass reinforcement. Membrane weight minimum 0.36lbs/sqft. Color to match main field sheet.
  - c. Certified Polymer Thickness
    - 1) Membrane manufacturer is to certify that the polymer thickness is within +/-2mils of the polymer thickness specified with at least 22mils above thereinforcement scrim. ASTM +/-tolerance for membrane thickness is notaccepted.

### **2.03 FLASHING MATERIALS**

- A. Wall/Curb Flashing
  - 1. Glass Fiber Reinforced PVC Membrane
  - 2. A fiberglass reinforced membrane adhered to approved substrate using CA VOC limit compliant adhesive. Consult Product Data Sheets for adhesive options and additional information.
    - a. Edge Grip Fascia:
      - 1) Edge Grip Fascia is a two part assembly with a rigid terminator base plate and decorative snap on fascia cover. The fascia will be Kynar 500 coated formed aluminum, .040" with concealed splices plates. Retainer base plate is 20 gauge galvanized steel with 9/23" pre-punched holes for fasteners at 12" center in 10' 0" standard lengths.
        - (a) Face Height: As indicated on the Drawings, or selected by Architect.1.
        - Color: As selected by Architect.

### **2.04 INSULATION/COVER BOARD**

- A. Sarnatherm ISO (5 inches thickness to achieve R30 minimum)

1. Rigid polyisocyanurate foam insulation with black mat facers. Sarnatherm is available in 4 x 4 ft or 4 x 8 ft sizes and various thicknesses
2. DensDeck Prime®
  - a. Roofing - Pre-primed siliconized gypsum, fire-tested hardboard with glass-mat
    - 1) facers. DensDeck is provided in a 4 x 8 ft board size and in 1/4 inch thickness.
    - 2) Sheathing Siliconized gypsum, fire-tested hardboard with glass-mat facers. DensDeck is provided in a 4 x 8 ft board size and in 1/2 inch thickness.

## 2.05 COMPONENTS

- A. Roofing System Manufacturer's Reglet
- B. A heavy-duty, extruded aluminum flashing termination reglet used at walls and large
  1. curbs.
    - a. PVC Prefabricated stack A prefabricated vent pipe flashing made from 0.048 inch thickness PVC.
    - b. Universal Prefabricated Corners Prefabricated outside and inside flashing corners made of 0.060 inch thick PVC.

## 2.06 ATTACHMENT COMPONENTS

- A. Sarnafastener #12
  1. #12 corrosion-resistant fastener used with Sarnaplates to attach insulation/cover
    - a. boards to steel or wood roof decks.
      - 1) Sarnaplate Low Profile
        - (a) Used with #12 or #15 Sarnafasteners to attach insulation/cover boards to roof
          - (1) deck. Sarnaplate is a 3 inch square 26 gauge stamping of SAE 1010 steel with
          - (2) an AZ 55 Galvalume coating.
        - (b) Membrane Adhesives
          - (1) Sarnacol 2121 Adhesive
          - (2) A water-based adhesive used to attach the membrane to horizontal or nearhorizontal substrates. Consult Product Data Sheets for additional information.
      - b. Flashing Adhesive
        - 1) Stabond U148A Adhesive
        - 2) A low VOC reactivating-type adhesive used to attach membrane to flashingsubstrate.
        - 3) Peelstop
          - (a) An extruded aluminum, low profile bar used with certain fasteners to attach to the roof deck or to walls/curbs at terminations, penetrations and at incline changes of the substrate.

## 2.07 SEALANTS

- A. Multi-Purpose Sealant (for termination details). Sika 1A or approved equal.
- B. Approved two-component urethane adhesive sealant.
- C. Depending on substrates, the following sealants are options for temporary overnight ties:
  1. Spray-applied, water-resistant urethane foam.
  2. Mechanical attachment with rigid bars and compressed sealant.

## 2.08 MISCELLANEOUS FASTENERS AND ANCHORS

- A. Provide only post-galvanized steel, aluminum or stainless steel fasteners. Take
  1. precautions to avoid galvanic corrosion. Install expansion type fasteners with stainless steel pins for the attachment of metal to masonry. The minimum embedment for all

concrete fasteners and anchors is 1¼ inch and for all miscellaneous wood fasteners and anchors used for flashings 1 inch.

### **PART 3-EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine substrates and adjacent surfaces and make sure that conditions detrimental to the proper and timely execution of this work are corrected before proceeding

#### **3.02 SUBSTRATE PREPARATION**

- A. Wood Deck: Minimum 15/32" plywood, installed according to Code requirements.

#### **3.03 COVERBOARD AND INSULATION INSTALLATION**

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Install one or more layers of insulation under area of roofing to achieve required
  - 1. thickness. Where installing 2 or more layers creates overall insulation thickness, stagger the joints of each succeeding layer from joints of previous layer a minimum of 6 inches in each direction.
    - a. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
    - b. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    - c. Mechanical Attached Insulation: Mechanically fasten Coverboard into the roof deck
      - 1) through the insulation board with approved fasteners and plates at a rate of 12
      - 2) fasteners/board (8 feet x 4 feet) in the central zone of the roof and 16 fasteners/board in the perimeter area. Increase the fastening rate to 24 in the corner zones. Coverboard and Insulation boards are to rest evenly on the roof deck avoiding air spaces between the boards and the substrate. Install each board tightly against the adjacent boards on all sides.

#### **3.04 INSTALLATION OF SARNAFIL MEMBRANE**

- A. Remove broken, delaminated, wet or damaged insulation boards and provide new.
  - 1. Sarnacol 2121 Adhesive (or approved equal)
    - a. Pour Sarnacol 2121 adhesive out of the pail and spread using notched ¼ inch x 1 inch x ¼ inch rubber squeegees. Apply the 2121 adhesive at a rate of 1 1/2 (a) gallons/100 square feet. No adhesive is applied to the back of the membrane or
      - (1) to seam areas.
      - (2) Unroll the PVC membrane immediately into the wet 2121 adhesive. Adjacent
      - (3) rolls overlap previous rolls by 3 inches. This process is repeated throughout the
      - (4) roof area. Immediately after application into adhesive, press each roll firmly into
      - (5) place with a water-filled, foam-covered lawn roller by frequent rolling in two
      - (6) directions. Do not allow adhesive to skin-over or surface-dry prior to installation
      - (7) of membrane.
      - (8) Weld G410 coverstrips at all G410 seams that do not have a factory selvage
      - (9) edge.

### 3.05 HOT-AIR WELDING OF SEAM OVERLAPS

#### A. General

1. Hot air weld all seams in accordance with Manufacturer requirements.
  - a. Weld only clean and dry membrane.
  - b. MEMBRANE FLASHINGS
  - c. Install flashings concurrently with the roof membrane as the job progresses.
  - d. Adhere flashing materials to compatible surfaces only. Use caution to ensure adhesive fumes are not drawn into the building.
  - e. Apply Stabond adhesive in smooth, even coats with no gaps, globs or similar inconsistencies. Press the bonded sheet firmly in place with a hand roller. Do not apply adhesive in seam areas. Apply membrane panels uniformly.
  - f. Install peelstop bar according to the Detail Drawings with approved fasteners into the parapet or the structural deck at the base of parapets, walls and curbs.
  - g. The minimum flashing height is 8 inches above finished roofing level unless otherwise accepted in writing.
    - 1) Mechanically fasten all flashing membranes along the counter-flashed top edge with
      - (a) Peelstop/Reglet or approved alternate at 6-8 inches on center.
      - (b) Additionally secure all adhered flashings that exceed 30 inches in height. Consult
        - (1) Manufacturers Technical Department for securement methods.

### 3.06 METAL FLASHINGS

- A. Install airtight and continuous metal hook strips behind metal fascias. Fasten hook strips 12 inches on center into a wood nailer or masonry wall.
- B. Overlap base flashings with counter flashings at least 4 inches.
- C. Extend Hook strips past wood nailers over wall surfaces by 1-1/2 inch minimum and be securely sealed from air entry.
  1. Space adjacent sheets of PVC coated metal 1/4 inch apart. Fasten the end joints of the metal 6 inches on center. Cover the joints with 1 inch wide aluminum tape. Hot air weld a 4 inch wide membrane flashing strip over the joint.

### 3.07 SARNAKLAD METAL BASE FLASHINGS/EDGE METAL

- A. Form and install PVC clad metal flashings as described in the Detail Drawings.
  1. Fasten all metal flashings into approved substrates solid wood nailers with two
    - a. rows of approved fasteners 4" on center staggered.
      - 1) Install metal to provide adequate resistance to bending and allow for normal
        - (a) thermal expansion and contraction.
        - (b) Space adjacent sheets of PVC clad metal 1/4 inch apart. Cover the joint with 2 inch wide aluminum tape. Hot air weld a 4 inch minimum wide strip of Sarnafil flashing membrane over the joint.

### 3.08 EDGE GRIP FASCIA

- A. Position the Sarnafil bare backed membrane over the roof edge and down outside face of wall, covering treated wood nailer(s) completely. The edge of the membrane should extend over the face of the building approx. 3" and be secured with the retainer bar. Hot air weld all seams making sure there are no voids in welds. Make sure the retainer bar is clean and free of dirt or dust. Apply a 3/8 in. bead of Sika 1A sealant to the intersection of the right angle on the bar. Install bar from right to left as seen from rooftop lapping joints 1 in. Fasten bar 12 inches o.c. through slots using fasteners provided. Field cut sections as necessary. Install joint covers between each fascia section. Hook the joint cover from the top and allow it to hang down the face of the retainer. Do not hook on the drip. Install fascia by hooking the back flange over the top of the retainer. Leave a 1/4" gap for thermal movement

**3.09 3.10 TEMPORARY CUT-OFF**

- A. Construct all temporary waterstops to provide a 100% watertight seal. Maintain the
  - 1. stagger of insulation joints by installing partial panels of insulation. Carry the new
    - a. membrane into the waterstop. Seal the waterstop to the deck and/or substrate so that water will not be allowed to travel under the new or existing roofing. Seal the edge of the membrane in a continuous heavy application of sealant. Cut out all contaminated membrane before resuming work.

**3.10 3.11 COMPLETION**

- A. Correct all punch-list items to the satisfaction of the Owner's Representative and
  - 1. Manufacturer prior to demobilization.

**3.11 3.12 FIELD QUALITY CONTROL**

- A. Quality Control of Welded Seams
  - 1. Check all welded seams for continuity using a rounded screwdriver. Visible
    - a. evidence that welding is proceeding correctly is smoke during the welding
    - b. operation, shiny membrane surfaces, and an uninterrupted flow of dark grey
    - c. material from the underside of the top membrane. On-site evaluation of welded
    - d. seams shall be made daily at locations as directed by the Owner's
      - 1) Representative or Manufacturer's representative. Take one inch wide cross section samples of welded seams at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Applicator at no extra cost to the Owner.
        - (a) Interim and Final Inspections
        - (b) Upon completion of the installation and the delivery to Manufacturer by the Applicator of a certification that all work has been done in strict accordance with the contract specifications and Manufacturer's requirements, an inspection shall be made by a Specialist Technical Representative (Not a salesperson) of Manufacturer to review the installed roof system.

**3.12 3.13 DEMONSTRATION**

- A. Provide maintenance documents and personal instruction for the facilities staff and other interested parties at a single pre-determined mutually convenient time. The instruction shall include the following topics:
  - 1. Access restriction and precautions
    - a. Avoiding Mechanical Damage
      - 1) Potential Contaminants and rectification
        - (a) Cleaning
          - (1) Emergency repairs
          - (2) Procedures for permanent repairs and alterations

**END OF SECTION**

## SECTION 08211

### FLUSH WOOD DOORS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Flush wood doors; flush configuration; fire rated, non-rated, and acoustical.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06200 - Finish Carpentry.
- B. Section 08710 - Door Hardware.
- C. Section 09900 - Paints and Coatings: Site finishing of doors.

##### 1.03 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

#### PART 2 PRODUCTS

##### 2.01 DOORS AND PANELS

- A. All Doors: See drawings for locations and additional requirements.
  - 1. Quality Level: Premium Grade, in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
  - 1. Provide solid core doors at all locations.

##### 2.02 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.

##### 2.03 DOOR FACINGS

- A. Hardboard Facing for Opaque Finish: AHA A135.4, Class 1 - Tempered, S2S (smooth two sides) hardboard, composition face, 1/8 inch thick.

##### 2.04 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
  - 1. Provide solid blocks at lock edge for hardware reinforcement.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
  - 1. Exception: Doors to be field finished.
- E. Provide edge clearances in accordance with the quality standard specified.

#### PART 3 EXECUTION

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

### **3.02 INSTALLATION**

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
  - 1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Field-Finished Doors: Trimming to fit is acceptable.
  - 1. Adjust width of non-rated doors by cutting equally on both jamb edges.
  - 2. Trim maximum of 3/4 inch off bottom edges.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.

### **3.03 ADJUSTING**

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

### **3.04 SCHEDULE - See Drawings**

**END OF SECTION**



## **SECTION 08550**

### **WOOD WINDOWS**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Factory fabricated unfinished wood windows with fixed sash.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 06100 - Rough Carpentry: Rough opening framing.
- B. Section 09900 - Paints and Coatings: Site finishing wood surfaces.

##### **1.03 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association; 2008.
- B. WDMA I.S.4 - Water-Repellent Preservative Non-Pressure Treatment for Millwork; National Wood Window and Door Association; 2009.

#### **PART 2 PRODUCTS**

##### **2.01 WOOD WINDOWS**

- A. Windows: Wood frame and sash, factory fabricated and assembled.
  - 1. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 R15.
  - 2. Interior Finish: Primed.
  - 3. Configuration: As indicated on drawings.
  - 4. Frame and Sash Members: Mortise and tenon joints. Glue and steel pin joints to hairline fit, weather tight.
  - 5. Clearances and Shim Spacing: Minimum required for installation and dynamic movement of perimeter seal.

##### **2.02 MATERIALS**

- A. Wood: Clear pine, clear preservative treated using treatment type suitable for transparent or opaque finish.

#### **PART 3 EXECUTION**

##### **3.01 EXAMINATION**

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

##### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

**END OF SECTION**

## SECTION 08585

### BULLETPROOF TRANSACTION WINDOW

#### PART 1 GENERAL

##### 1.01 Scope

- A. This specification for Bullet Resistant standard Stainless Steel Frame Transaction windows offers a variety of choices suitable for any commercial application. Specific performance levels of glazing and frames are defined herein. The Stainless Steel Frame Transaction Window, SSFTW is intended to define standard items not subject to variations. The products defined in this standard have demonstrated successful performance to established test procedures and physical usage (see Section 1.2). It is the user's responsibility to coordinate the information contained herein with applicable building and/or fire code requirements.

##### 1.02 Reference Documents

- A. Underwriters Laboratories: UL 752 - Standard for Bullet Resisting Equipment.
- B. NIJ Standard 0108.01 - (National Institute of Justice) Standard for Ballistic Resistant Protective Materials.
- C. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel, Strip, Plate and Flat Bar.
- D. ASTM B 209/B 209M - Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.
- E. ASTM E119-98 One-Hour Fire Rating of Building Construction and Materials.

##### 1.03 Approval Drawings and Hardware Schedules

- A. It is intended that approval drawings will not be required for these items and that the manufacturer's published details, together with this standard, will provide all the needed information. When specified, shop drawings shall be submitted for approval prior to manufacturing and/or delivery of product to the site. They shall show elevations of each window design, window construction details and methods of assembling sections, hardware locations, dimensions, and shapes of materials, anchorage and fastening methods and finish requirements.

##### 1.04 Products

- A. Manufacturer
  - 1. Acceptable Manufacturer: Pacific Bulletproof Co., which is located at: 4350 Leaverton Ct, Anaheim, CA 92807. Tel: 715.630.5447. Fax: 714.630.5314. Email: [www.pacificbulletproof.com](http://www.pacificbulletproof.com) or approved equal
- B. Aluminum Specifications
  - 1. All aluminum used to manufacture frames, channel, anchors, and accessories shall meet the following requirement.
    - a. Aluminum: ASTM B221, alloy 6105-T5 and 6063-T5 for extrusions.
- C. Glazing Specifications
  - 1. When specified for either insurance rating purposes or for compliance to building codes, manufacturers shall provide the type of glazing and frame assembly that has been investigated and/or successfully fire tested in accordance with the latest revision of UL 752, "Standard for Bullet Resisting Equipment".
- D. Bullet Resistant Fiberglass
  - 1. When specified for either insurance rating purposes or for compliance to building codes, manufacturers shall provide the type of glazing and frame assembly that has been

investigated and/or successfully fire tested in accordance with the latest revision of UL 752, "Standard for Bullet Resisting Equipment".

- E. Stainless Steel
  - 1. All stainless steel used to manufacture deal trays, counter tops, anchors and accessories shall meet the following requirement.
    - a. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel, Strip, Plate and Flat Bar.
- F. Tolerances
  - 1. Tolerances shall comply with the standard outlined in Section 2.1.6. Window is to be installed in a finished opening.
- G. Design Clearances
  - 1. The clearance between frame and vertical surfaces shall be a maximum of 1/8" (3.2 mm).
  - 2. The clearance between the frame head and horizontal surfaces shall be 3/16" (4.8 mm) ± 1/16" (1.6 mm).
- H. Counter Top
  - 1. Stainless Steel
    - a. In addition to the requirements for plastic laminate, no visible seams are permitted along the vertical or horizontal edges. The following methods, at the discretion of the manufacturer, intermittently welded seams, edge filled, dressed smooth shall be used to achieve specified seamless construction.
- I. Vision Lites
  - 1. All glazing shall be secured with the manufacturer's standard lite kit. Glazing to consist of UL 752 rated, bullet resistant glazing.
- J. Frames
  - 1. General
    - a. Provide Stainless Steel frames for windows. Performance tests shall be conducted on 3-sided window frames and corresponding window designs.
  - 2. Mechanically Connected Frames
    - a. Frames required to comply with this standard shall be supplied as fully connected frames with fasteners concealed and inaccessible.
- K. Glazing Channel
  - 1. Glazing shall be secured to frame with Stainless Steel U-channel. Channel shall meet stainless steel standards as specified in 2.1.4 of this specification. Channel shall have equally spaced weep holes for moisture prevention.
- L. Manufacturers Standard for Frames
  - 1. Frame shall consist of 1/8" wall 6063-T5 Aluminum. Frame shall be lined with Bullet Resistant fiberglass as specified in 2.1.4 of this specification. Frame to be wrapped in 16 gauge stainless steel. Frame shall meet stainless steel standards as specified in 2.1.4 of this specification
- M. Frame Anchors for Wall Conditions
  - 1. Provide frames with a minimum of three anchors per side suitable for the adjoining wall construction. Provide anchors of not less than 0.042" (1.0 mm) in thickness or 0.167" (4.2 mm) diameter wire. Frames OVER 6'0" shall be provided with an additional anchor.
- N. Deal Tray
  - 1. Stainless Steel shall conform to requirements outlined in 2.1.4 of this specification

2. The deal tray shall be fully integrated into stainless steel top. Drawer shall have a minimum depth of 1 5/8" from the bottom of the glazing. Tray shall be sized in accordance with accompanying drawing.
- O. Voice Communication
1. Voice sport shall conform to requirements outlined in 2.1.5 of this specification
    - a. Sound transmission shall be achieved thru natural voice communication.
    - b. Stainless voice port shall be of offset pattern design and contain proper weather seals.

#### **1.05 Storage, Handling, and Installation**

- A. Jobsite Storage
1. All windows shall be stored vertically under cover. The units shall be placed on at least 4" (102 mm) high wood sills or in a manner that will prevent rust or damage. The use of non-vented plastic or canvas shelters that can create a humidity chamber shall be avoided. If the wrapper on the window becomes wet, it must be removed immediately. Proper jobsite storage is extremely important in maintaining the quality and integrity of the assembled unit. **IMPROPER STORAGE of material WILL HAVE an adverse effect final appearance of the window unit.**
- B. Frame Installation
1. Frames shall be installed plumb, level, rigid and in true alignment.
  2. Where grouting is required in masonry installations, frames shall be braced or fastened in such a way that will prevent the pressure of the grout from deforming the frame members. Grout shall be mixed to provide a 4" (102 mm) maximum slump consistency and hand troweled into place. Grout mixed to a thinner, "pumpable" consistency shall not be used.
- C. Window Installation
1. Window shall be installed and fastened to maintain alignment with frames to achieve maximum operational effectiveness and appearance. Windows shall be adjusted to maintain perimeter clearances as specified in Section 2.1.7. Shimming shall be performed by the installer as needed to assure the proper clearances are achieved.
- D. Glazing and Frame Maintenance
1. It is the responsibility of the installer or end user to properly glazing and frames in accordance with the manufacturers strict requirements.

**END OF SECTION**

## SECTION 08710

### DOOR HARDWARE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Hardware for wood and hollow steel doors.
- B. Electrically operated and controlled hardware.
- C. Thresholds.
- D. Weatherstripping, seals and door gaskets.

##### 1.02 RELATED REQUIREMENTS

- A. Section 08211 - Flush Wood Doors.

##### 1.03 REFERENCE STANDARDS

- A. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; Builders Hardware Manufacturers Association; 2003 (ANSI/BHMA A156.2).
- B. BHMA A156.3 - American National Standard for Exit Devices; Builders Hardware Manufacturers Association; 2001 (ANSI/BHMA A156.3).
- C. BHMA A156.4 - American National Standard for Door Controls - Closers; Builders Hardware Manufacturers Association, Inc.; 2000 (ANSI/BHMA A156.4).
- D. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders; Builders Hardware Manufacturers Association, Inc.; 2005 (ANSI/BHMA A156.8).
- E. BHMA A156.18 - American National Standard for Materials and Finishes; Builders Hardware Manufacturers Association, Inc.; 2006 (ANSI/BHMA A156.18).
- F. BHMA A156.22 - American National Standard for Door Gasketing and Edge Seal Systems, Builders Hardware Manufacturers Association; 2005 (ANSI/BHMA A156.22).
- G. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; Door and Hardware Institute; 1993; also in WDHS-1/WDHS-5 Series, 1996.
- H. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.

##### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.
- B. Convey County of Riverside EDA's keying requirements to manufacturers.

##### 1.05 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS - BASIS OF DESIGN

- A. Basis of Design: Schlage.
- B. Other Products: As specified in this section.

- C. Substitutions: See Section 01600 - Product Requirements.

## 2.02 DOOR HARDWARE - GENERAL

- A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
- B. Provide all items of a single type of the same model by the same manufacturer.
- C. Provide products that comply with the following:
1. Applicable provisions of federal, state, and local codes.
  2. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.
- D. Function: Lock and latch function numbers and descriptions of manufactures series as as shown on the drawings.
- E. Electrically Operated and/or Controlled Hardware: Provide all power supplies, power transfer hinges, relays, and interfaces required for proper operation; provide wiring between hardware and control components and to building power connection.
- F. Finishes: All door hardware the same finish unless otherwise indicated.
1. Primary Finish: Satin chrome plated over nickel on brass or bronze, 626 (approx US26D).
  2. Secondary Finish: Satin chrome plated over nickel on brass or bronze, 626 (approx US26D).
    - a. Use secondary finish in kitchens, bathrooms, and other spaces containing chrome or stainless steel finished appliances, fittings, and equipment; provide primary finish on one side of door and secondary finish on other side if necessary.
  3. Finish Definitions: BHMA A156.18.
  4. Exceptions:
    - a. Where base metal is specified to be different, provide finish that is an appearance equivalent according to BHMA A156.18.

## 2.03 HINGES

- A. Hinges: Provide hinges on every swinging door.
1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
  2. Provide ball-bearing hinges at all doors having closers.
  3. Provide hinges in the quantities indicated.
  4. Provide non-removable pins on exterior outswinging doors.
  5. Where electrified hardware is mounted in door leaf, provide power transfer hinges.

## 2.04 LOCKS AND LATCHES

- A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
1. Hardware Sets indicate locking functions required for each door.
  2. If no hardware set is indicated for a swinging door provide an office lockset.
  3. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
  4. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.
- B. Electrically Operated Locks: Fail secure unless otherwise indicated.
- C. Lock Cylinders: Manufacturer's standard tumbler type, six-pin standard core.
1. Provide cams and/or tailpieces as required for locking devices required.
- D. Keying: Grand master keyed.
- E. Latches: Provide a latch for every door that is not required to lock, unless specifically indicated "push/pull" or "not required to latch".

## 2.05 CYLINDRICAL LOCKSETS

- A. Locking Functions: As defined in BHMA A156.2, and as follows:
  - 1. Passage: No locking, always free entry and exit.
  - 2. Privacy: F76, emergency tool unlocks.
  - 3. Office: F82 Grade 1, key not required to lock, unlocks upon exit.
  - 4. Always-Locked: F86, key required to lock, may not be left unlocked.
- B. Manufacturers - Cylindrical Locksets:
  - 1. Schlage: [www.schlage.com](http://www.schlage.com).
  - 2. Or approved equal.

## 2.06 FLUSHBOLTS

- A. Flushbolts: Lever extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.
  - 1. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
  - 2. Floor Bolts: Provide dustproof strike except at metal thresholds.
- B. Manual Flushbolts: Provide lever extensions for top bolt at over-size doors.
- C. Automatic Flushbolts: Automatically latch upon closing of door; automatic retraction of bolts when active leaf is opened.

## 2.07 EXIT DEVICES

- A. Locking Functions: Functions as defined in BHMA A156.3, and as follows:
  - 1. Entry/Exit, Always-Latched: Key outside locks and unlocks lever, no latch holdback (dogging).
  - 2. Exit Only, Secure: No outside trim, no key entry, no latch holdback, deadlocking latchbolt.
- B. Manufacturers:
  - 1. Von Duprin: [www.vonduprin.com](http://www.vonduprin.com).

## 2.08 CLOSERS

- A. Closers: Complying with BHMA A156.4.
  - 1. Provide surface-mounted, door-mounted closers unless otherwise indicated.
  - 2. Provide a door closer on every exterior door.
  - 3. Provide a door closer on every fire- and smoke-rated door. Spring hinges are not an acceptable self-closing device unless specifically so indicated.
  - 4. On pairs of swinging doors, if an overlapping astragal is present, provide coordinator to ensure the leaves close in proper order.

## 2.09 STOPS AND HOLDERS

- A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated.
  - 1. Provide wall stops, unless otherwise indicated.
  - 2. If wall stops are not practical, due to configuration of room or furnishings, provide overhead stop.
  - 3. Stop is not required if positive stop feature is specified for door closer; positive stop feature of door closer is not an acceptable substitute for a stop unless specifically so stated.
- B. Floor Stops:

## 2.10 GASKETING AND THRESHOLDS

- A. Gaskets: Complying with BHMA A156.22.
  - 1. On each exterior door, provide weatherstripping gaskets, unless otherwise indicated; top, sides, and meeting stiles of pairs.

- a. Where exterior door is also required to have fire or smoke rating, provide gaskets functioning as both smoke and weather seals.
  2. On each exterior door, provide door bottom sweep, unless otherwise indicated.
- B. Thresholds:
1. At each exterior door, provide a threshold unless otherwise indicated.
  2. Field cut threshold to frame for tight fit.
- C. Fasteners At Exterior Locations: Non-corroding.

## **2.11 PROTECTION PLATES AND ARCHITECTURAL TRIM**

- A. Protection Plates:
1. Kickplate: Provide on push side of every door with closer, except storefront and all-glass doors.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as instructed by the manufacturer.
- B. Verify that electric power is available to power operated devices and of the correct characteristics.

### **3.02 INSTALLATION**

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item:
1. For wood doors: Comply with DHI "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  2. Wood doors: See Section 08211.

### **3.03 ADJUSTING**

- A. Adjust work under provisions of Section 01700.
- B. Adjust hardware for smooth operation.

**END OF SECTION**



## SECTION 08830

### MIRRORS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Glass mirrors.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06200 - Finish Carpentry: Wood frames for mirrors.
- B. Section 10800 - Toilet, Bath, and Laundry Accessories: Metal-framed mirrors.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Mirror Glass - General: Select materials and/or provide supports as required to limit mirrored glass deflection to 1/200 or flexure limit of glass with full recovery of glazing materials, whichever is less.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify that openings for mirrored glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive mirrors.

##### 3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.

##### 3.03 INSTALLATION - GENERAL

- A. Install mirrors in accordance with GANA recommendations.
- B. Set mirrors plumb and level, free of optical distortion.
- C. Set mirrors with edge clearance free of surrounding construction including countertops or backsplashes.

**END OF SECTION**

## SECTION 09051

### COMMON WORK RESULTS FOR FLOORING PREPARATION

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. This section applies to all floors identified in the contract documents as to receive the following types of floor coverings:
  - 1. Resilient tile and sheet.
  - 2. Broadloom carpet.
  - 3. Carpet tile.
  - 4. Thin-set ceramic tile and stone tile.
- B. Preparation of new and existing concrete floor slabs for installation of floor coverings.
- C. Testing of concrete floor slabs for moisture and pH.
- D. Preparation of new and existing wood-based floors and subfloors for installation of new floor coverings.

##### 1.02 SUBMITTALS

- A. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
  - 1. Moisture and pH limits and test methods.
  - 2. Manufacturer's required bond/compatibility test procedure.
- B. Adhesive Bond and Compatibility Test Report.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
  - 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
  - 2. Latex or polyvinyl acetate additions are permitted; gypsum content is prohibited.
  - 3. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
- B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.
- C. Remedial Floor Coating: Coating intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of pH found, and suitable for adhesion of flooring without further treatment or with only the addition of a skim coat of patching compound or adhesive.

#### PART 3 EXECUTION

##### 3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
  - 1. Preliminary cleaning.

2. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
  3. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
  4. pH tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
  5. Specified remediation, if required.
  6. Patching, smoothing, and leveling, as required.
  7. Other preparation specified.
  8. Adhesive bond and compatibility test.
  9. Protection.
- B. Remediations:
1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
  2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating over entire suspect floor area.
  3. Excessive pH: If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

### 3.02 PRELIMINARY CLEANING

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

### 3.03 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

### 3.04 pH TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Note: This procedure is the equivalent of that described in ASTM F710, repeated here for the's convenience.
- C. Use a wide range pH paper, its associated chart, and distilled or deionized water.

- D. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the pH paper into the water, remove it, and compare immediately to chart to determine pH reading.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value is over 10.

### **3.05 PREPARATION**

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

### **3.06 ADHESIVE BOND AND COMPATIBILITY TESTING**

- A. Comply with requirements and recommendations of floor covering manufacturer.

### **3.07 APPLICATION OF REMEDIAL FLOOR COATING**

- A. Comply with requirements and recommendations of coating manufacturer.

### **3.08 PROTECTION**

- A. Cover prepared floors with building paper or other durable covering.

**END OF SECTION**

## SECTION 09111

### NON-LOADBEARING METAL FRAMING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Metal partition, ceiling, and soffit framing.
- B. Framing accessories.

##### 1.02 REFERENCE STANDARDS

- A. AISI SG02-1 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2001 with 2004 supplement. (replaced SG-971)
- B. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2009a.
- C. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2009a.
- D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.

#### PART 2 PRODUCTS

##### 2.01 FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of  $L/240$  at 5 psf.
  - 1. Studs: C shaped with flat or formed webs.
  - 2. Runners: U shaped, sized to match studs.
- B. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- C. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
  - 1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
  - 2. Material: ASTM A653/A653M steel sheet, SS Grade 50, with G60/Z180 hot dipped galvanized coating.
- D. Tracks and Runners: Same material and thickness as studs, bent leg retainer notched to receive studs.
- E. Furring and Bracing Members: Of same material as studs; thickness to suit purpose; complying with applicable requirements of ASTM C754.
- F. Fasteners: ASTM C1002 self-piercing tapping screws.
- G. Anchorage Devices: Power actuated.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that rough-in utilities are in proper location.

### **3.02 INSTALLATION OF STUD FRAMING**

- A. Comply with requirements of ASTM C754.
- B. Extend partition framing per the drawings.
- C. Align and secure top and bottom runners at 24 inches on center.
- D. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- E. Install studs vertically at spacing indicated on drawings.
- F. Align stud web openings horizontally.
- G. Secure studs to tracks using fastener method. Do not weld.
- H. Fabricate corners using a minimum of three studs.
- I. Double stud at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- J. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

### **3.03 CEILING AND SOFFIT FRAMING**

- A. Comply with requirements of ASTM C754.
- B. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.
- C. Install furring independent of walls, columns, and above-ceiling work.
- D. Securely anchor hangers to structural members or embed in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.
- E. Space main carrying channels at maximum 72 inch on center, and not more than 6 inches from wall surfaces. Lap splice securely.
- F. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.
- G. Place furring channels perpendicular to carrying channels, not more than 2 inches from perimeter walls, and rigidly secure. Lap splices securely.

**END OF SECTION**

## SECTION 09260

### GYPSUM BOARD ASSEMBLIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Acoustic insulation.
- D. Gypsum wallboard.
- E. Joint treatment and accessories.
- F. Textured finish system.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 07212 - Board and Batt Insulation: Acoustic insulation.
- C. Section 09111 - Non-Loadbearing Metal Framing.
- D. Section 09300 - Tiling: Tile backing board.

##### 1.03 REFERENCE STANDARDS

- A. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- B. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2009a.
- C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.
- D. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2009a.
- E. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2008.
- F. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2010.
- G. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2009a.
- I. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- J. ASTM E413 - Classification for Rating Sound Insulation; 2010.
- K. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2010.

#### PART 2 PRODUCTS

##### 2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.

- B. Interior Partitions Indicated as Sound-Rated: Provide completed assemblies with the following characteristics:
  - 1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

## **2.02 METAL FRAMING MATERIALS**

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
  - 1. Studs: "C" shaped with flat or formed webs.
  - 2. Runners: U shaped, sized to match studs.
- B. Exterior Non-Loadbearing Studs and Furring for Application of Gypsum Board: As specified in Section 09111.
- C. Loadbearing Studs for Application of Gypsum Board: As specified in Section 05400.

## **2.03 BOARD MATERIALS**

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
  - 2. Thickness:
    - a. Vertical Surfaces: 5/8 inch.
    - b. Ceilings: 5/8 inch.

## **2.04 ACCESSORIES**

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 inch.
- B. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
  - 1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
  - 2. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
  - 3. Ready-mixed vinyl-based joint compound.
- C. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C1002; self-piercing tapping type; cadmium-plated for exterior locations.
- D. Screws for Attachment to Steel Members From 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws for application of gypsum board to loadbearing steel studs.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that project conditions are appropriate for work of this section to commence.

### **3.02 FRAMING INSTALLATION**

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Studs: Space studs as permitted by standard.
  - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
  - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling framing in accordance with details.

### **3.03 ACOUSTIC ACCESSORIES INSTALLATION**



- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

#### **3.04 BOARD INSTALLATION**

- A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

#### **3.05 JOINT TREATMENT**

- A. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
  - 2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.

#### **3.06 TEXTURE FINISH**

- A. Apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions and to match approved sample.

**END OF SECTION**

## SECTION 09300

### TILE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Cementitious backer board as tile substrate.
- D. Stone thresholds.
- E. Ceramic accessories.
- F. Ceramic trim.

##### 1.02 REFERENCE STANDARDS

- A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2009.
- B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2010.
- C. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2010).
- D. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2010).
- E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 2009.
- F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (R2010).
- G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (R2010).
- H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (R2010).
- I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (R2010).
- J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (R2010).
- K. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 2010.
- L. ANSI A118.4 - American National Standard Specifications for Latex-Portland Cement Mortar; 2010.
- M. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2010.

- N. ANSI A118.7 - American National Standard Specifications for Polymer Modified Cement Grouts for Tile Installation; 2010.
- O. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2008.
- P. TCNA (HB) - Handbook for Ceramic Tile Installation; 2011.

### **1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Samples: Mount tile and apply grout on two plywood panels, minimum 18 x 18 inches in size illustrating pattern, color variations, and grout joint size variations.
- C. Maintenance Materials: Furnish the following for County of Riverside EDA's use in maintenance of project.
  - 1. See Section 01600 - Product Requirements, for additional provisions.
  - 2. Extra Tile: 2 percent of each size, color, and surface finish combination.

### **1.04 QUALITY ASSURANCE**

- A. Maintain one copy of The Tile Council of North America Handbook and ANSI A108 Series/A118 Series on site.

## **PART 2 PRODUCTS**

### **2.01 TILE**

- A. Manufacturers: All products by the same manufacturer.
  - 1. American Olean: [www.americanolean.com](http://www.americanolean.com).
  - 2. Dal-Tile Corporation: [www.daltile.com](http://www.daltile.com).
  - 3. Substitutions: See Section 01600 - Product Requirements.
- B. Porcelain Tile: ANSI A137.1, and as follows:
  - 1. Avenue One manufactured by American Olein or approved equivalent product.
  - 2. Size and Shape: 12" square.
  - 3. Colors: To be selected by Architect from manufacturer's standard range.
- C. Glazed Wall Tile: ANSI A137.1, and as follows:
  - 1. Mosaic Colorbody manufactured by Dal-Tile or approved equivalent product.
  - 2. Size and Shape: 3" SQUARE.
  - 3. Colors: To be selected by Architect from manufacturer's standard range.

### **2.02 TRIM AND ACCESSORIES**

- A. Ceramic Accessories: Glazed finish, same color and finish as adjacent field tile; same manufacturer as tile.
- B. Ceramic Trim: Matching bullnose and cove base ceramic shapes in sizes coordinated with field tile.
  - 1. Manufacturer: Same as for tile.
- C. Thresholds: Marble, white or gray, honed finish; 2 inches wide by full width of wall or frame opening; 1/2 inch thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.

### **2.03 SETTING MATERIALS**

- A. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.

### **2.04 GROUTS**

- A. Manufacturers:

1. ProSpec, an Oldcastle brand; ProColor Sanded Tile Grout: [www.prospec.com](http://www.prospec.com).
  2. Bostik Inc: [www.bostik-us.com](http://www.bostik-us.com).
  3. LATICRETE International, Inc; LATICRETE SpectraLOCK PRO Premium Grout: [www.laticrete.com](http://www.laticrete.com).
  4. Substitutions: See Section 01600 - Product Requirements.
- B. Standard Grout: Any type specified in ANSI A118.6 or A118.7.
1. Colors: To be selected by Architect from manufacturer's standard range.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
- B. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

#### **3.02 PREPARATION**

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.

#### **3.03 INSTALLATION - GENERAL**

- A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install ceramic accessories rigidly in prepared openings.
- G. Install thresholds where indicated.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- J. Allow tile to set for a minimum of 48 hours prior to grouting.
- K. Grout tile joints. Use standard grout unless otherwise indicated.
- L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

#### **3.04 INSTALLATION - FLOORS - THIN-SET METHODS**

- A. Over exterior concrete substrates, install in accordance with The Tile Council of North America Handbook Method F102, with standard grout.

- B. Over interior concrete substrates, install in accordance with The Tile Council of North America Handbook Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.

### **3.05 INSTALLATION - WALL TILE**

- A. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244, using membrane at toilet rooms.
- B. Over gypsum wallboard on wood or metal studs install in accordance with The Tile Council of North America Handbook Method W243, thin-set with dry-set or latex-Portland cement bond coat, unless otherwise indicated.

**END OF SECTION**

## SECTION 09511

### SUSPENDED ACOUSTICAL CEILINGS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

##### 1.02 RELATED REQUIREMENTS

- A. Section 15850 - Air Outlets and Inlets: Air diffusion devices in ceiling.
- B. Section 16510 - Interior Luminaires: Light fixtures in ceiling system.

##### 1.03 REFERENCE STANDARDS

- A. ASTM C635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2007.
- B. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2008e1.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on suspension system components.
- C. Samples: Submit two samples 4x4 inch in size illustrating material and finish of acoustical units.

#### PART 2 PRODUCTS

##### 2.01 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
- B. Acoustical Panels Type Armstrong: Second Look II. Finish to match existing
  - 1. Size: 24 x 48 inches.

##### 2.02 SUSPENSION SYSTEM(S)

- A. Manufacturers:
  - 1. Armstrong World Industries, Inc; Product Prelude: [www.armstrong.com](http://www.armstrong.com).
  - 2. USG; Product Donn: [www.usg.com](http://www.usg.com).
- B. Suspension Systems - General: ASTM C635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
- C. Exposed Steel Suspension System Type     : Formed steel, commercial quality cold rolled; intermediate-duty.
  - 1. Profile: Tee; 15/16 inch wide face.
  - 2. Construction: Double web.
  - 3. Finish: White painted.

##### 2.03 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Perimeter Moldings: Same material and finish as grid.
  - 1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - SUSPENSION SYSTEM**

- A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- B. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- C. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- D. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- E. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- F. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- G. Do not eccentrically load system or induce rotation of runners.
- H. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
  - 1. Use longest practical lengths.
  - 2. Overlap and rivet corners.

### **3.02 INSTALLATION - ACOUSTICAL UNITS**

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install units after above-ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
  - 1. Make field cut edges of same profile as factory edges.

**END OF SECTION**

## SECTION 09650

### RESILIENT FLOORING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Resilient sheet flooring.
- B. Resilient tile flooring.
- C. Resilient base.

##### 1.02 REFERENCE STANDARDS

- A. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004 (Reapproved 2010)e1.
- B. ASTM F1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 2004 (Reapproved 2009).
- C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2008.
- D. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2004 (Reapproved 2010).

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Verification Samples: Submit two samples, 12x12 inch in size illustrating color and pattern for each resilient flooring product specified.

#### PART 2 PRODUCTS

##### 2.01 SHEET FLOORING

- A. Vinyl Sheet Flooring Type TBD: Homogeneous without backing, with color and pattern throughout full thickness, and:
  - 1. Minimum Requirements: Comply with ASTM F1303, Type II, without backing, or ASTM F1913.
  - 2. Total Thickness and Wear Layer Thickness: 0.080 inch nominal.
  - 3. Pattern: TBD.
- B. Vinyl Sheet Flooring Type TBD: Color and pattern throughout wear layer thickness, with backing, and:
  - 1. Minimum Requirements: Comply with ASTM F1303, Type II, with Class A fibrous backing.
  - 2. Wear Layer Thickness: 0.050 inch minimum.
  - 3. Total Thickness: 0.080 inch minimum.
  - 4. Pattern: TBD.
- C. Vinyl Welding Rod: Solid vinyl bead produced by manufacturer of vinyl flooring for heat welding seams, in color matching field color.

##### 2.02 TILE FLOORING

- A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness, and:
  - 1. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
  - 2. Size: 12 x 12 inch.
  - 3. Thickness: 0.125 inch.



4. Pattern: TBD.
5. Manufacturers:
  - a. Armstrong World Industries, Inc; Product TBD: [www.armstrong.com](http://www.armstrong.com).
  - b. Or approved equal.
  - c. Substitutions: See Section 01600 - Product Requirements.

### **2.03 RESILIENT BASE**

- A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove, and as follows:
  1. Height: 4 inch.
  2. Thickness: 0.125 inch thick.
  3. Finish: Satin.
  4. Color: Color as selected from manufacturer's standards.
  5. Manufacturers:
    - a. Burke Flooring; Product TBD: [www.burkemercer.com](http://www.burkemercer.com).
    - b. Johnsonite, Inc; Product TBD: [www.johnsonite.com](http://www.johnsonite.com).
    - c. Roppe Corp; Product TBD: [www.roppe.com](http://www.roppe.com).
    - d. or approved equal.
    - e. Substitutions: See Section 01600 - Product Requirements.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

### **3.02 PREPARATION**

- A. Prepare floor substrates for installation of flooring in accordance with Section 09051.

### **3.03 INSTALLATION**

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install in accordance with manufacturer's instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

### **3.04 SHEET FLOORING**

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns carefully at seams.
- B. Double cut sheet at seams.
- C. Lay flooring with tightly butted seams, without any seam sealer.

### **3.05 TILE FLOORING**

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.

### **3.06 RESILIENT BASE**

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Install base on solid backing. Bond tightly to wall and floor surfaces.

**END OF SECTION**

## SECTION 09680

### CARPET

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Carpet, direct-glued.

##### 1.02 RELATED REQUIREMENTS

- A. Section 09051 - Common Work Results for Flooring Preparation: Independent agency testing of concrete slabs, removal of existing floor coverings, cleaning, and preparation.

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Samples: Submit two samples 18x18 in size illustrating color and pattern for each carpet material specified.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Carpet:
  - 1. Shaw Broadloom; Product Worklife.

##### 2.02 CARPET

- A. Carpet Type Braodloom:
  - 1. Product: Worklife manufactured by Shaw.
  - 2. Color: TBD.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive carpet.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet.
- C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesives to sub floor surfaces.
- D. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for flooring installation by testing for moisture and pH.
  - 1. Test in accordance with Section 09051.
  - 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

##### 3.02 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install carpet and cushion in accordance with manufacturer's instructions and CRI Carpet Installation Standard.
- C. Verify carpet match before cutting to ensure minimal variation between dye lots.

- D. Lay out carpet and locate seams in accordance with shop drawings:
  - 1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
  - 2. Do not locate seams perpendicular through door openings.
  - 3. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.
  - 4. Locate change of color or pattern between rooms under door centerline.
  - 5. Provide monolithic color, pattern, and texture match within any one area.
- E. Install carpet tight and flat on subfloor, well fastened at edges, with a uniform appearance.

### **3.03 DIRECT-GLUED CARPET**

- A. Double cut carpet seams, with accurate pattern match. Make cuts straight, true, and unfrayed. Apply seam adhesive to cut edges of woven carpet immediately.
- B. Apply contact adhesive to floor uniformly at rate recommended by manufacturer. After sufficient open time, press carpet into adhesive.
- C. Apply seam adhesive to the base of the edge glued down. Lay adjoining piece with seam straight, not overlapped or peaked, and free of gaps.
- D. Roll with appropriate roller for complete contact of adhesive to carpet backing.
- E. Trim carpet neatly at walls and around interruptions.

### **3.04 INSTALLATION ON STAIRS**

- A. Use one piece of carpet for each tread and the riser below. Apply seam adhesive to all cut edges.
- B. Install carpet with pile direction in the length of the stair.
- C. Adhere carpet tight to stair treads and risers.

**END OF SECTION**

## SECTION 09685

### CARPET TILE (ALTERNATE)

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.

##### 1.02 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

##### 2.02 MATERIALS

- A. Carpet Tile: Tufted, manufactured in one color dye lot.
  - 1. Product: Worklife manufactured by Shaw.
  - 2. Tile Size: 18 x 18 inch, nominal.
  - 3. Color: TBD.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for flooring installation by testing for moisture and pH.
  - 1. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

##### 3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

##### 3.03 INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions and CRI Carpet Installation Standard.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Fully adhere carpet tile to substrate.
- G. Trim carpet tile neatly at walls and around interruptions.
- H. Complete installation of edge strips, concealing exposed edges.

END OF SECTION

## SECTION 09900

### PAINTS AND COATINGS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Materials for backpriming woodwork.
- D. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
  - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
  - 2. Elevator pit ladders.
  - 3. Exposed surfaces of steel lintels and ledge angles.
  - 4. Prime surfaces to receive wall coverings.
- E. Do Not Paint or Finish the Following Items:
  - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
  - 2. Items indicated to receive other finishes.
  - 3. Items indicated to remain unfinished.
  - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
  - 5. Floors, unless specifically so indicated.
  - 6. Ceramic and other tiles.
  - 7. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.
  - 8. Exterior insulation and finish system (EIFS).
  - 9. Glass.
  - 10. Concrete masonry in utility, mechanical, and electrical spaces.

##### 1.02 RELATED REQUIREMENTS

- A. Section 02765 - Pavement Markings: Painted pavement markings.

##### 1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit two paper chip samples, 8x10 inch in size illustrating range of colors available for each surface finishing product scheduled.

##### 1.05 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

#### PART 2 PRODUCTS

## 2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Provide all paint and coating products from the same manufacturer to the greatest extent possible.
- C. Paints:
  - 1. Color Wheel Paint, a Comex Group company: [www.colorwheel.com](http://www.colorwheel.com).
  - 2. Comex Group (Color Wheel, Frazee, General Paint, Kwal, or Parker): [www.thecomexgroup.com](http://www.thecomexgroup.com).
  - 3. Duron, Inc: [www.duron.com](http://www.duron.com).
  - 4. Frazee Paint, a Comex Group Company: [www.frazee.com](http://www.frazee.com).
  - 5. General Paint, a Comex Group company: [www.generalpaint.com](http://www.generalpaint.com).
  - 6. Glidden Professional: [www.gliddenprofessional.com](http://www.gliddenprofessional.com).
  - 7. Kwal Paint, a Comex Group company: [www.kwalpaint.com](http://www.kwalpaint.com).
  - 8. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).
  - 9. Parker Paint Mfg Co Inc., a Comex Group company: [www.parkerpaint.com](http://www.parkerpaint.com).
  - 10. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).
  - 11. Pratt & Lambert Paints: [www.prattandlambert.com](http://www.prattandlambert.com).
- D. Substitutions: See Section 01600 - Product Requirements.

## 2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
  - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Supply each coating material in quantity required to complete entire project's work from a single production run.
  - 3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
  - 1. Provide coatings that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
  - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Colors: As indicated on drawings

## 2.03 PAINT SYSTEMS - INTERIOR

- A. Paint WI-OP-2A - Wood, Opaque, Alkyd, 2 Coat:
  - 1. One coat of alkyd primer sealer.
  - 2. Eggshell: One coat of alkyd enamel; TBD.
- B. Paint GI-OP-2L - Gypsum Board/Plaster, Latex, 2 Coat:
  - 1. One coat of latex primer sealer.
  - 2. Eggshell: One coat of latex enamel; TBD.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

### **3.03 APPLICATION**

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

**END OF SECTION**



## SECTION 10160

### METAL TOILET COMPARTMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Metal toilet compartments.
- B. Urinal and Vestibule screens.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Blocking and supports.
- B. Section 10800 - Toilet, Bath, and Laundry Accessories.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Metal Toilet Compartments:
  - 1. Bobrick.
  - 2. Substitutions: Section 01600 - Product Requirements.

##### 2.02 COMPONENTS

- A. Toilet Compartments: Powder coated steel, floor-mounted unbraced.
- B. Doors, Panels, and Pilasters: Sheet steel faces, pressure bonded to sound deadening core, formed and closed edges; corners made with corner clips or mitered, welded, and ground smooth.

##### 2.03 ACCESSORIES

- A. Pilaster Shoes: Formed chromed steel with polished finish, 3 inch high, concealing floor fastenings.
  - 1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.
  - 2. Provide ceiling attachment using two adjustable hanging studs, attached to above-ceiling framing.
- B. Brackets: Polished chrome-plated non-ferrous cast metal.
- C. Hardware: Polished chrome plated non-ferrous cast metal:
  - 1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
  - 2. Thumb turn or sliding door latch with exterior emergency access feature.
  - 3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
  - 4. Coat hook with rubber bumper; one per compartment, mounted on door.
  - 5. Provide door pull for outswinging doors.

##### 2.04 FINISHING

- A. Powder Coated Steel Compartments: Clean, degrease, and neutralize. Follow immediately with a phosphatizing treatment, prime coat and two finish coats powder coat enamel.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that field measurements are as indicated on shop drawings.

### **3.02 INSTALLATION**

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.
- B. Maintain 3/8 to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

### **3.03 ADJUSTING**

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.
- B. Adjust hinges to position doors in partial opening position when unlatched. Return out swinging doors to closed position.

**END OF SECTION**

## **SECTION 10210**

### **WALL LOUVERS**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Louvers, frames, and accessories.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 09900 - Paints and Coatings: Field painting.
- B. Section 15810 - Ducts: Ductwork attachment to louvers, and blank-off panels.
- C. Section 15850 - Air Outlets and Inlets: Louvered penthouse.

##### **1.03 REFERENCE STANDARDS**

- A. AMCA 511 - Certified Ratings Program for Air Control Devices; Air Movement and Control Association International, Inc.; 2010.

#### **PART 2 PRODUCTS**

##### **2.01 LOUVERS**

- A. Louvers: Factory fabricated and assembled, complete with frame, mullions, and accessories; AMCA Certified under AMCA 511.
  - 1. Wind Load Resistance: Design to resist positive and negative wind load of 25 psf without damage or permanent deformation.
  - 2. Drainable Blades: Continuous rain stop at front or rear of blade aligned with vertical gutter recessed into both jambs of frame.
  - 3. Screens: Provide insect screens at intake louvers and bird screens at exhaust louvers.
  - 4. Hinged Units: Provide secondary frame to which louver frame is attached; non-ferrous hinges; configuration as indicated on drawings.

#### **PART 3 EXECUTION**

##### **3.01 EXAMINATION**

- A. Verify that prepared openings and flashings are ready to receive work and opening dimensions are as instructed by the louver manufacturer.
- B. Verify that field measurements are as indicated.

##### **3.02 INSTALLATION**

- A. Install louver assembly in accordance with manufacturer's instructions.
- B. Install louvers level and plumb.
- C. Align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior.
- D. Secure louver frames in openings with concealed fasteners.

**END OF SECTION**

## SECTION 10800

### TOILET, BATH, AND LAUNDRY ACCESSORIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Accessories for toilet rooms.
- B. Grab bars.

##### 1.02 RELATED REQUIREMENTS

- A. Section 08830 - Mirrors: Other mirrors.
- B. Section 09300 - Tile: Ceramic washroom accessories.
- C. Section 10160 - Metal Toilet Compartments.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Products listed are made by Bobrick.

##### 2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
- B. Keys: Provide 2 keys for each accessory to County of Riverside EDA; master key all lockable accessories.

##### 2.03 FINISHES

- A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.

##### 2.04 TOILET ROOM ACCESSORIES

- A. Refer to drawings for products
- B. Grab Bars: Stainless steel, 1-1/4 inches outside diameter, minimum 0.05 inch wall thickness, nonslip grasping surface finish, concealed flange mounting; 1-1/2 inches clearance between wall and inside of grab bar.

#### PART 3 EXECUTION

##### 3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

##### 3.02 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings

END OF SECTION

## SECTION 11131

### PROJECTION SCREENS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Front projection screen assemblies.

##### 1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Wood blocking in walls and ceilings.
- B. Section 06200 - Finish Carpentry: Site constructed wood frames for rear projection screens.
- C. Section 09511 - Suspended Acoustical Ceilings: Suspended panel ceilings for recessed screens.
- D. Section 09900 - Paints and Coatings: Field painting.
- E. Section 16155 - Equipment Wiring: Electrical supply, conduit, and wiring for electric motor operated projection screens.

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's catalog cuts and descriptive information on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Bretford: [www.bretford.com](http://www.bretford.com).
- B. Da-Lite Screen Company: [www.da-lite.com](http://www.da-lite.com).

##### 2.02 FRONT PROJECTION SCREENS

- A. Manufacturers:
  - 1. Bretford: [www.bretford.com](http://www.bretford.com).
  - 2. Da-Lite Screen Company: [www.da-lite.com](http://www.da-lite.com).
  - 3. Draper, Inc: [www.draperinc.com](http://www.draperinc.com).
- B. Front Projection Screens: Factory assembled unless otherwise indicated.
  - 1. Dimensions: As indicated on drawings.
  - 2. In Conference room: Motorized, matte light diffusing fabric screen, horizontally tensioned , wall mounted.
- C. Matte Light Diffusing Fabric: Light diffusing screen fabric; washable, flame retardant and mildew resistant.
- D. Concealed-in-Ceiling Screen Cases: Steel; integral roller brackets.
  - 1. Door Slat: Self trim; self-closing and -opening.
  - 2. Case Finish: Baked enamel.
  - 3. Case Color: White.
  - 4. End Caps: Steel; finished to match case.
- E. Electrically-Operated Screens:
  - 1. Roller: 2 inch aluminum, with locking device.
  - 2. Vertical Tensioning: Screen fabric weighted at bottom with steel bar with plastic end caps.
- F. Provide mounting hardware, brackets, supports, fasteners, and other mounting accessories

required for a complete installation, in accordance with manufacturer's recommendations for specified substrates and mountings.

### **2.03 ELECTRICAL COMPONENTS**

- A. Electrical Components: Listed and classified by UL as suitable for the purpose specified and indicated.
- B. Motors: Direct drive, 110 V, 60 Hz.
  - 1. Screen Motor: Mounted inside roller; three wire with ground; quick reverse type; equipped with thermal overload cut-off.
    - a. Electrical Characteristics: 1.2 amps.
    - b. Motor mounted on sound absorber.
- C. Controls: 3 position control switch with plate.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate is finished and ready to accept screen installation.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that openings for recessed screens are correctly sized.
- D. Verify type and location of electrical connections.
- E. Do not install projection screens until climate control systems are in place and interior painting and other finishes are completed.

### **3.02 PREPARATION**

- A. Coordinate screen installation with installation of projection systems.
- B. Coordinate installation with adjacent construction and fixtures, including ceilings, walls, lighting, fire suppression, and registers and grilles.

### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions, using manufacturer's recommended hardware for relevant substrates.
- B. Do not field cut screens.
- C. Install screens in mountings as specified and as indicated on drawings.
- D. Install plumb and level.
- E. Install electrically operated screens ready for connection to power and control systems by others.
- F. Adjust projection screens and related hardware in accordance with manufacturer's instructions for proper placement and operation.
- G. Test electrical screens for proper working condition. Adjust as needed.

### **3.04 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch up, repair, or replace damaged products before Substantial Completion.

**END OF SECTION**

## SECTION 14240

### HYDRAULIC ELEVATORS

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. This Section specifies hydraulic elevators.
- B. Related Sections: The following sections contain requirements that relate to this section and are performed by other trades.
  - 1. Section 03300 - Cast-In-Place Concrete: elevator pit, elevator motor and pump foundation, and grouting thresholds.
  - 2. Section 05500 - Metal Fabrications: pit ladder, divider beams, support for entrances and rails, hoisting beam at top of hoistway.

##### 1.02 REFERENCES

- A. Comply with applicable building codes and elevator codes at the project site, including but not limited to the following:
  - 1. ANSI A117.1, Buildings and Facilities, Providing Accessibility and Usability for Physically Handicapped People.
  - 2. ADAAG, Americans with Disabilities Act Accessibility Guidelines.
  - 3. ANSI/NFPA 70, National Electrical Code.
  - 4. ANSI/NFPA 80, Fire Doors and Windows.
  - 5. ASME/ANSI A17.1, Safety Code for Elevators and Escalators.
  - 6. ANSI/UL 10B, Fire Tests of Door Assemblies.
  - 7. CAN/CSA C22.1, Canadian Electrical Code.
  - 8. CAN/CSA-B44, Safety Code for Elevators and Escalators.
  - 9. Model Building Codes.
  - 10. All other local applicable codes.

##### 1.03 SYSTEM DESCRIPTION: Elevator Arrangement

- A. Performance Requirements for Elevators:
  - 1. Quantity & Elevator Numbers: 1
  - 2. Type: Twin direct acting hydraulic cylinder without well holes.
  - 3. Number of Stops: 2
  - 4. Number of Openings: 2 at Front, 0 at Rear.
  - 5. Rise: 14 ft 0 in 0
    - a. [Note: Maximum Rise will depend upon the load on platen. Load on platen is determined by the duty, speed, rise, weight of the cab enclosure, elevator car frame and platform. The architectural inside an elevator cab will affect the weight of the cab enclosure.]
  - 6. Rated Capacity: 2500lbs
  - 7. Car Speed: 100 feet/minute.
  - 8. Minimum Car Inside: 6' 8" x 4' 3"
  - 9. Inside Cab Height: 8' 0"
    - a. Door Height: 7' 0"
  - 10. Entrance Width & Type: 3' 6"; Single Slide
  - 11. Main Power Supply: 480 Volts + or - 5% of normal, 3 Phase, with a separate equipment grounding conductor.
  - 12. Lighting Power Supply: 120 Volts, 1 Phase, 15 Amp, 60 Hz.
  - 13. Stopping Accuracy:  $\pm 1/4"$  (6.4 mm) under any loading condition or direction of travel.

- B. Simplex Collective Operation- Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the car shall park at the last landing served.
- C. Provide microprocessor-based control system which utilizes on-board diagnostics for servicing, trouble-shooting, and adjusting without requiring the use of an outside service tool. If an on-board diagnostic system is not provided, a handheld service tool (or laptop), owner's license, operation manual, and tool instructions must be provided in addition to the control system.
- D. Car Operating Features
  - 1. Full Collective Operation.
  - 2. Single Speed Fan.
  - 3. On/Off Light Switch.
  - 4. Solid State Starting.
  - 5. Remote elevator monitoring REMâ ready.
  - 6. Car-Stall Protection.
  - 7. Firefighters' Service Phase I and Phase II (US only); or Special Emergency Service Phase I and II - Emergency Recall (Canada only); or Special Emergency Service Phase I and II - Emergency Recall and In-Car Emergency Operation (Canada only).
  - 8. Top of Car Inspection.
- E. Operating Features - Optional
  - 1. Intercom provisions (Card Reader Provided and Installed by Others).
  - 2. Car Secure Access. (Available on front opening cars only.)
  - 3. Provision for Card Reader in Car (Card Reader Provided and Installed by Others).
  - 4. Second Riser of Hall Buttons. (Not available if any car in the group has a rear entrance)
  - 5. Emergency Hospital Service.
  - 6. Automatic Standby Power Operation with Manual Override. This operation shall return each car automatically to a designated landing when the system is initially switched to standby power. One or more cars are returned at a time. Preference is given to loaded cars over empty cars in order to reduce passenger waiting times. A car must respond by beginning to move toward the designated landing within a pre-determined time. If a car does not respond, it is automatically placed in a "Not Available" mode while other cars are moved. If a car was not returned to the designated landing on the first try, a second attempt is made. If the second attempt is not successful, the car will remain in a "Not Available" mode and can only be moved by manual means. Once each car has returned to the designated landing, the doors will remain open for a predetermined amount of time.
    - a. When all cars have successfully returned to the designated landing or have attempted to move twice, automatic selection of the car(s) to run on normal operation will occur.
    - b. If for any reason a car selected for normal operation under stand by power is delayed for 60 seconds, the car will be placed in a "Not Available" mode and another car will be selected for normal operation based on the priorities listed above.
    - c. Manual Override of Standby Power Operation is achieved by a manual input for each car via a strip switch. A manually selected car may be run either in a return operation to a designated landing or in normal operation under standby power. If a manually selected car has not yet returned to the designated landing, it will perform this operation first then immediately go into normal operation.
    - d. If a manually selected car is delayed, no other car can be selected in the group unless it is manually selected.
    - e. If car selection is changed by Manual Override while a car is running in return or normal operation under standby power, the newly selected car will not be permitted to run until the car that is running has stopped, opened its doors, and gone into the Standby Power Wait state
- F. Door Control Features:
  - 1. Closed Loop Door Operator is a closed loop, microprocessor based door operator system.



The door operator will facilitate smooth operation under varying environmental influences such as, temperature, wind, friction, and component variation. The processor will monitor the door's actual position and velocity compared to its desired position and velocity. If variations are detected in the profile the command will be automatically corrected. The Closed Loop Door Operator control system shall not require machine room door control equipment.

2. Door noise not to exceed 58dBA.
3. Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.
4. Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.
  - a. Elevator doors shall be provided with a reopening device that will stop and reopen the car door(s) and hoistway door(s) automatically should the door(s) become obstructed by an object or person.
  - b. Primary door protection shall consist of a two dimensional, multi-beam array projecting across the car door opening. Under normal operation and for any door position, the system shall detect as a blockage an opaque object that is equal to or greater than 1.3 inches (33 mm) in diameter when inserted between the car doors at vertical positions from within 1 inch (25 mm) above the sill to 71 inches (1800 mm) above the sill. Under degraded conditions (one or more blocked or failed beams), the primary protection shall detect opaque objects that are equal to or greater than 4" (100 mm) in diameter for the same vertical coverage. If the system performance is degraded to the point that the 4" object cannot be detected, the system shall maintain the doors open or permit closing only under nudging force conditions.
  - c. The door reopening device shall also include a secondary, three dimensional, triangular infrared multi-beam array projecting across the door opening and extending into the hoistway door zone. The door opening device will cause the doors to reopen when it detects a person(s) or object(s) entering or exiting the car in the area between the hoistway doors or the entryway area adjacent to the hoistway doors.
  - d. The size of the secondary protection zone shall vary as the door positions vary during opening and closing. The width of the zone shall be approximately one-third the size of the separation between the doors (or door and strike plate for single-slide doors) and shall be approximately centered in the door separation. In order to minimize detection of hallway passers-by who are not entering the elevator, the maximum zone penetration into the entryway shall not exceed 20" for any door separation. Normal penetration depth into the entryway from the car doors shall be ~14" for a door separation of 42". The penetration shall reduce proportionally as the doors close. At door separations of 18" or less the secondary protection system may cease its normal operation since the depth of the zone recedes to where it is inside the hoistway doors. The vertical coverage of the secondary protection shall be ~19" (480 mm) above the sill to ~55" (1400 mm) above the sill (mid-thigh to shoulder of a typical adult).
  - e. The secondary protection shall have an anti-nuisance feature which will ignore detection in the secondary zone after continual detection occurs for a significant time period in the secondary zone without corresponding detection in the primary protection zone; i.e. a person/object is in the entryway but does not enter. Normal secondary protection shall be re-enabled whenever a detection occurs in the primary zone.
  - f. The reaction time of the door detector sub-system shall not exceed 60 milliseconds when both primary and secondary protection capabilities are active; nor 40 milliseconds when the secondary protection is disabled.
5. Door nudging operation to occur if doors are prevented from closing for an adjustable period of time.

G. Provide equipment according to Seismic zone: Zone 0

#### 1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for each system proposed for use. Include the following:
  - 1. Signal and operating fixtures, operating panels and indicators.
  - 2. Cab design, dimensions and layout.
  - 3. Hoistway-door and frame details.
  - 4. Electrical characteristics and connection requirements.
  - 5. Expected heat dissipation of elevator equipment in machine room (BTU).
- B. Shop Drawings: Submit approval layout drawings. Include the following:
  - 1. Car, guide rails, buffers and other components in hoistway.
  - 2. Maximum rail bracket spacing.
  - 3. Maximum loads imposed on guide rails requiring load transfer to building structure.
  - 4. Loads on hoisting beams.
  - 5. Clearances and travel of car.
  - 6. Clear inside hoistway and pit dimensions.
  - 7. Location and sizes of access doors, hoistway entrances and frames.
- C. Operations and Maintenance Manuals: Provide manufacturer's standard operations and maintenance manual.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer: Provide elevators manufactured by a firm with a minimum of 10 years experience in fabrication of elevators equivalent to those specified. Elevator manufacturer shall be ISO 9001 certified.
- B. Installer: Elevators shall be installed by the manufacturer.
- C. Regulatory Requirements: Elevator system design and installation shall comply with the latest versions of [Select applicable national elevator code:] <ASME A17.1 >[or]< CAN/CSA-B44 > and [Include applicable local codes here.]
  - 1. [Include for U.S.:] Elevator shall be designed in response to Americans with Disabilities Act Accessibility Guidelines (ADAAG).
  - 2. [U.S. only, include any seismic code requirements other than national elevator code]
- D. Permits and Inspections: Provide licenses and permits and perform required inspections and tests.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Should the building or the site not be prepared to receive the elevator equipment at the agreed upon date, the General Contractor will be responsible to provide a proper and suitable storage area on or off the premises.
  - 1. Should the storage area be off-site and the equipment not yet delivered, then the elevator contractor, upon notification from the General Contractor, will divert the elevator equipment to the storage area. If the equipment has already been delivered to the site, then the General Contractor shall transport the elevator equipment to the storage area. The cost of elevator equipment taken to storage by either party, storage, and redeliver to the job site shall not be at the expense of the elevator contractor.

#### **1.07 WARRANTY**

- A. The elevator contractor's acceptance is conditional on the understanding that their warranty covers defective material and workmanship. The guarantee period shall not extend longer than one (1) year from the date of completion or acceptance thereof by beneficial use, whichever is earlier, of each elevator. The guarantee excludes ordinary wear and tear or improper use, vandalism, abuse, misuse, or neglect or any other causes beyond the control of the elevator contractor and this express warranty is in lieu of all other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose.

#### **1.08 MAINTENANCE SERVICE**

- A. Maintenance service consisting of regular examinations, adjustments and lubrication of the elevator equipment shall be provided by the elevator contractor for a period of 12 Months after the elevator has been turned over for the customer's use. This service shall not be subcontracted but shall be performed by the elevator contractor. All work shall be performed by competent employees during regular working hours of regular working days and shall include emergency 24-hour callback service. This service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the elevator contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURER**

- A. Provide hydraulic elevators by Otis Elevator Company or approved equal.

### **2.02 EQUIPMENT: MACHINE ROOM COMPONENTS**

- A. The hydraulic system shall be of compact design suitable for operation under the required pressure. The power component shall be mounted in the hydraulic-fluid storage tank. The control valve shall control flow for up and down directions hydraulically and shall include an integral check valve. A control section including control solenoids shall direct the main valve and control: up and down starting, acceleration, transition from full speed to leveling speed, up and down stops, pressure relief and manual lowering. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. System to be provided with a low-pressure switch and a shut-off valve.
- B. A microprocessor-based controller shall be provided, including necessary starting switches together with all relays, switches, solid-state components and hardware required for operation, including door operation, as described herein. A three (3) phase overload device shall be provided to protect the motor against overloading.
- C. A manual lowering feature shall permit lowering the elevator at slow speed in the event of power failure or for adjusting purposes.
- D. Pressure Switch.
  - 1. [Include the following options as required. Re-letter accordingly]
- E. Tank Heater.
- F. Low-oil control [where required].

### **2.03 EQUIPMENT: HOISTWAY COMPONENTS**

- A. Plunger(s) and Cylinder(s): Each cylinder shall be constructed of steel pipe of sufficient thickness and suitable for the operating pressure. The top of each cylinder shall be equipped with a cylinder head with a drip ring to collect any oil seepage as well as an internal guide ring and self-adjusting packing. Each plunger shall be constructed of selected steel tubing or pipe of proper diameter machined true and smooth with a fine polished finish. Each plunger shall be provided with a stop ring electrically welded to it to prevent the plunger from leaving the cylinder. Each plunger and cylinder shall be installed plumb and shall operate freely with minimum friction.
  - 1. A sealed PVC cylinder protection system shall be installed. The system shall provide a means to monitor the space between the PVC sleeve and cylinder wall and evacuate unwanted fluids, so as to prevent such fluids from remaining in contact with the cylinder.
- B. Car Guide Rails: Tee-section steel rails with brackets and fasteners.
- C. Spring Buffer: Helical coil spring type.
- D. Wiring: Wiring for hoistway electrical devices included in scope of the elevator system, hall panels, pit emergency stop switch, and the traveling cable for the elevator car.

E. Hoistway Entrances

1. Frames: Entrance frames shall be of bolted construction for complete one-piece unit assembly. All frames shall be securely fastened to fixing angles mounted in the hoistway and shall be UL fire rated steel. Additional sill angle support will be provided with 4'0" and 4'6" two speed opening door arrangements (4500 & 5000 lb. cars). Sills shall be extruded Aluminum
2. Doors: Entrance doors shall be of metal construction with vertical channel reinforcements.
3. Fire Rating: Entrance and doors shall have a UL 1-1/2 hour fire protection rating.
4. Entrance Finish: Powder painted. Color to be selected from the manufacturer's standard color chart.
5. Entrance Markings: Entrance jambs shall be marked with 4" x 4" (102 mm x 102 mm) plates having raised floor markings with Braille adjacent. Markings shall be provided on both sides of the entrance.
6. Sight Guards: Black sight guards will be furnished.

**2.04 EQUIPMENT: CAR COMPONENTS**

- A. Car Frame: A suitable car frame shall be provided with adequate bracing to support the platform and car enclosure. The buffer striking plate on the underside of the car-frame platform assembly must fully compress the spring buffer mounted in the pit before the plunger reaches its lower limit of travel.
- B. Platform, Heavy Loading Type: The car platform shall be arranged to accommodate one-piece loads weighing up to 25% of the rated capacity, such as wheeled food carts, stretchers, x-ray equipment, etc. The platform shall be recessed 5/16" for flooring by others.
- C. Cab Walls: Cab walls to have attached (non-removable) vertical panels with plastic laminate on front and back.
- D. Car Front Finish: Powder painted. Color to be selected from the manufacturer's standard color chart.
- E. Car top to be of wood material clad on both sides with a natural finish aluminum panel.
- F. Ceiling Type: Low-Voltage downlight DC-125 suspended ceiling will have panels laminated with plastic laminate. Set with incandescent down lights, four per panel.
- G. Emergency Car Lighting: An emergency power unit employing a 6 volt, sealed rechargeable battery and totally static circuits shall be provided to illuminate the elevator car and provide current to the emergency siren in the event of building power failure
- H. Emergency Pulsating Siren: Siren mounted on top of the car that is activated when the Alarm button in the car operating panel is engaged. Siren shall have a rated sound pressure level of 80 dba at a distance of 3.0 m from the device. Siren shall respond with a delay of not more than 1 second after the switch or push button has been pressed
- I. Exhaust Fan: An exhaust fan shall be mounted on the car top.
- J. Utility Outlet: A 125V 15 amperes utility outlet with ground-fault circuit-interrupter protection shall be furnished on top of the cab.
- K. Handrail:
- L. Threshold: Aluminum
- M. Protective pad hooks not required.
- N. [Optional] An electrical contact shall be provided on the car-top exit.
- O. Kickplate for car doors - Satin Stainless Steel
- P. Applied Base Finish - NA

- Q. Applied Reveal Finish - NA
- R. Glass rear cab wall - Not required.

## 2.05 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

- A. Car Operating Panel: A car operating panel shall be provided which contains all push buttons, key switches, and message indicators for elevator operation. The car operating panel shall have a Satin Stainless Steel finish.
  - 1. Applied car operating panel shall be furnished. It shall contain a bank of round metal (plastic when required by some local California codes) mechanical illuminated buttons. Flush mounted to the panel and marked to correspond to the landings served, an emergency call button, door open and door close buttons, and switches for lights, inspection and the exhaust fan. Pan shaped design is not acceptable. The emergency call button shall be connected to a bell that serves as an emergency signal. All buttons to have raised numerals and Braille markings and red LED halo illumination with 1/8" Projecting targets.
  - 2. The car operating panel shall be equipped with the following features:
    - a. Standard:
      - 1) Raised markings and Braille shall be provided to the left hand side of each push-button.
      - 2) Car Position Indicator at the top of and integral to the car operating panel.
      - 3) Door open and door close buttons.
      - 4) Light key-switch.
      - 5) Fan key-switch.
      - 6) Inspection key-switch.
      - 7) Elevator Data Plate marked with elevator capacity and car number.
      - 8) Illuminated alarm button with raised markings.
    - b. Standard for USA, Optional in Canada
      - 1) In car stop switch (toggle or key unless local code prohibits use)
      - 2) Firefighter's hat (standard USA)
      - 3) Firefighter's Phase II Key-switch (standard USA)
      - 4) Call Cancel Button (standard USA)
    - c. Optional
      - 1) Help Button - The help button shall initiate two-way communication between the car and a location inside the building, switching over to another location if the call is unanswered, where personnel are available who can take the appropriate action. Visual indicators are provided for call initiation and call acknowledgement.
      - 2) Firefighter's Phase II emergency in-car operating instructions, worded according to A17.1 2000, Article 2.27.7.2.
      - 3) Landing Passing Signal: A chime bell shall sound in the car to signal that the car is either stopping at or passing a floor served by the elevator.
      - 4) Please exit symbol, provided with emergency hospital service, Seismic Zones ?2 or express priority in the hall.
- B. A digital, LED car position indicator shall be integral to the car operating panel.
- C. Hall Fixtures: Standard Fixture. Hall fixtures shall be provided with necessary push buttons and key switches for elevator operation. Hall fixtures shall have a Satin Stainless Steel finish.
- D. Car lantern and chime- A directional lantern visible from the corridor shall be provided in the car entrance.
- E. [Optional] Telephone Cabinet: A telephone compartment shall be furnished in the return panel below the car operating panel. Necessary wires for the telephone shall be included in the compartment and connected to the car traveling cable. The telephone instrument shall be furnished by others.

- F. [Optional] Access key-switch at top floor in entrance jamb.
- G. [Optional] Access key-switch at lowest floor in entrance jamb.

### **PART 3 - EXECUTION**

#### **3.01 PREPARATION**

- A. Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

#### **3.02 INSTALLATION**

- A. Installation of all elevator components except as specifically provided for elsewhere by others.
- B. Well for Cylinder Provided Under Other Sections: The cylinder well, including casing if necessary, shall not be provided by the elevator subcontractor. The well and casing shall be considered additional preparatory work not included in the elevator contract, and shall be furnished by other than the elevator subcontractor.

#### **3.03 DEMONSTRATION**

- A. The elevator contractor shall make a final check of each elevator operation with the Owner or Owner's representative present prior to turning each elevator over for use. The elevator contractor shall determine that control systems and operating devices are functioning properly.

**END OF SECTION**

## SECTION 15010

### BASIC MECHANICAL REQUIREMENTS

#### PART 1. GENERAL

##### 1.01 SECTION INCLUDES

- A. Basic Mechanical Requirements specifically applicable to Division 15 Sections, in addition to Division 1 - General Requirements.

##### 1.02 DESCRIPTION

- A. Furnish materials and perform labor required to execute this work as indicated on the drawings, as specified and as required to complete the work of this section, except as otherwise herein specifically excluded.

##### 1.03 WORK INCLUDED

- A. The complete Heating, Ventilating and Air Conditioning (HVAC) and Plumbing systems (including Medical Gas and Fire Protection systems), including but not limited to these major items.
  1. Coordinate work of this Section with related trades.
  2. Verify applicable dimensions at the jobsite.
  3. Duct systems; supply, return and exhaust complete with fire dampers, combination fire-smoke dampers, and manual dampers.
  4. Diffusers and registers.
  5. Exhaust supply, return fans and air curtains.
  6. Furnishing and installation of miscellaneous hangers, supports, sleeves, inserts, anchors and other auxiliary equipment for systems under this Division.
  7. Duct lining and insulation.
  8. Soil waste and vent system inside and outside the building including connections to fixtures, equipment, sewer connections, clean-outs.
  9. Water piping systems inside and outside the building, including connections to fixtures, equipment, water meters and vaults; pressure regulating stations, backflow preventers.
  10. Interruptible and non-interruptible fuel gas systems inside and outside the building, including connections, gas meters, earthquake valves, and pressure regulating stations.
  11. Plumbing fixtures, carriers, fittings, trim, hose bibs, wall hydrants, and accessories.
  12. Installation and connection of Owner furnished equipment.
  13. Natural gas piping system including connections to equipment and site.
  14. Water heating systems, including water heating equipment, circulating pumps, connections.
  15. Shop drawings.
  16. Equipment identification.
  17. Equipment and systems adjustments and balancing.
  18. Air, water and gas systems testing, adjusting and balancing.
  19. Written operating and maintenance instructions.
  20. Record drawings.
  21. Guarantee

##### 1.04 WORK SPECIFIED ELSEWHERE

- A. Concrete, Architectural Sheet Metal, Door and Exterior Wall Louvers, Painting and Electrical.

##### 1.05 SITE INSPECTION

- A. Contractor shall familiarize himself with the conditions at the site. No allowance will be made subsequently for any error through negligence in observing the site conditions. Contractor shall observe and make cost allowance for any mechanical and/or electrical items that must be

relocated to accommodate the installation or servicing of any item covered under this contract.

#### **1.06 ORDINANCES, REGULATIONS AND CODES**

- A. References to Technical Societies, Trade Organizations, Governmental Agencies is made in Division 15 in accordance with the following abbreviations.
1. AFI - Air Filter Institute
  2. AMCA - Air Moving & Conditioning Association
  3. ARI - Air Conditioning & Refrigeration Institute
  4. ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers
  5. ASME - American Society of Mechanical Engineers
  6. ASTM - American Society of Testing Materials
  7. AWS - American Welding Society Code
  8. ANSI - American National Standards Institute
  9. CBC - California Building Code
  10. CCR - California Code of Regulations
  11. CEC - California Electrical Code
  12. CFC - California Fire Codes
  13. CMC - California Mechanical Code
  14. CPC - California Plumbing Code
  15. FIA - Factory Insurance Association
  16. NAFM - National Association of Fan Manufacturers
  17. NEMA - National Electrical Manufacturer's Association
  18. NFPA - National Fire Protection Association
  19. ORS - Office of Regulatory Services
  20. SCAQMD - South Coast Air Quality Management District
  21. SMACNA - Sheet Metal and Air Conditioning Contractors National Association
  22. UFC - Uniform Fire Code
  23. UL - Underwriter's Laboratories
  24. UPC - Uniform Plumbing Code
- B. Requirements of Regulatory Agencies: Materials and installation shall comply with applicable local, state, and national codes and ordinances. Rulings and interpretations of the enforcing agencies shall be considered as part of the local codes. No extras will be permitted for furnishing items required by the local codes but not specified or shown on the drawings.
- C. Codes and Standards:
1. UBC and California Amendments (California Building Code - Part 2, Title 24, CCR).
  2. UMC and California Amendments (California Mechanical Code - Part 4, Title 24 CCR).
  3. UPC and California Amendments (California Plumbing Code - Part 5, Title 24 CCR).
  4. Uniform Fire Code with State Amendments (California Fire Code - Part 9, Title 24 CCR).
  5. National Fire Protection Associations - National Fire Code.
- D. Nothing in these drawings and specifications is to be construed to permit work in violation thereof. Ordinances, regulations and codes are to be construed as minimum requirements.
- E. The responsibility of the Architect to conduct construction reviews of the Contractor's performance is not intended to include the adequacy of the Contractor's safety measures in, on, or near the construction site.
- F. Ventilating, refrigeration and electrical equipment and appliances are required to be approved by the Underwriters' Laboratories, Inc., or other nationally recognized testing agency and installed per the testing agency's specifications.

#### **1.07 PERMITS, FEES AND INSPECTIONS**

- A. Obtain and pay for all necessary permits, fees, assessments, complimentary drawings, required by any legally constituted public authorities having jurisdiction.

#### **1.08 DRAWINGS AND SPECIFICATIONS**



- A. The Architect's decision will be final on interpretation of the Drawings and Specifications.
- B. The Drawings and Specifications are complimentary. Any work called for on the Drawings and not mentioned in the Specifications, or vice versa, shall be performed as though fully set forth in both.
- C. Piping, ductwork and other equipment shown as existing has been taken from the Owner's drawings. Contractor shall verify exact location in field before proceeding with the work.
- D. Where codes, standards, drawings or specifications conflict, the most stringent shall prevail, unless prior approval for variance is obtained. Specific details on the drawings shall supercede the specification in the event of a conflict.
- E. Alternate support or seismic detail shall have prior approval by the Architect; and the Contractor shall obtain agency approval without any additional cost or time to the contract and without any time penalty on the work schedule.

#### 1.09 SUBMITTALS

- A. Before starting work, the Contractor shall furnish for the approval of the Architect, Shop Drawings and Submittals with Itemized Equipment Lists, complete in all details that they proposes to install. All items shall be submitted at the same time.
- B. Submittals must be specific to this project with respect to model number, capacities, performance, etc., generic submittals will not be accepted.
- C. Variations or deviations on submitted items from that specified must be clearly tagged and / or identified
- D. Submittals shall include, but not necessarily be limited to the following which are mandatory:
  1. Draw Equipment Layouts to 1/4" scale, including equipment, piping accessories, and showing clearances for operating and servicing.
  2. Schedule of pipe, fittings, valves, with manufacturer and catalog number.
  3. Specialties, valves, gauges and thermometers of all types.
  4. Foundations, supports, hangers, inserts.
  5. Earthquake supports and calculations.
  6. Expansion loops, expansion joints, guides, and anchors.
  7. Insulation.
  8. Ventilation and air conditioning equipment, specialties and the air control systems.
  9. Fans, fan characteristic curves, fan tests.
  10. Dampers, louvers, grilles, registers, diffusers.
  11. Shop fabrication drawings and installation drawings of ductwork and piping layouts. Submit for approval prior to fabrication. Drawings shall indicate dimensions from bottom of piping and ductwork to finish floor level.
  12. Wiring diagrams, control panel board, motor starters and controls for electrically operated equipment furnished by mechanical trades.
  13. Automatic control system diagrams.
  14. Exhaust, supply and return fans.
  15. Access panels.
  16. Clean-outs
  17. Fixture carriers.
  18. Hangers, inserts, supports, anchors.
  19. Hose bibs.
  20. Hot water circulators.
  21. Pipe, fittings and specialties.
  22. Pipe isolators.
  23. Plumbing fixtures, fittings, trim, drains and receptors.
  24. Pressure regulators.
  25. Roof flashing.
  26. Sleeves, escutcheons, caulking, waterproofing, fireproofing.

27. Strainers
28. Water hammer arrestors.
29. Water heating equipment.
30. Expansion joints, guides and anchors.
31. Shop fabrications drawings and calculations.
32. Special and miscellaneous products furnished under this section and not listed herein.

#### **1.10 RECORD DRAWINGS AND MANUALS**

- A. Record Set During the Work: At site, maintain at least one set of Drawings as a Field Record Set. Also maintain at least one copy of all Addenda, Modifications, approved submittals, correspondence, and transmittals at site. Keep Drawings and data in good order and readily available to Architect and Owner.
- B. Changes: Clearly and correctly mark Record Drawings to show changes made during the construction process at the time the changed work is installed. No such changes shall be made in the work unless authorized by the Architect.
- C. Final Record Drawings: Conform to Division 1 requirements.
- D. Preparation of Final Record Drawings: Contractor shall transfer recorded changes in the work indicated on the Field Record Set to the record set. Changes shall be neatly and clearly drawn and noted by skilled draftsmen, and shown technically correct.
- E. Approval: Prior to Architect's inspection for Substantial Completion, submit the Final Record Drawings to the Architect for review, and make such revisions as may be necessary for Final Record Drawings to be a true, complete, and accurate record of the work.
- F. Manuals: Obtain data from the various manufacturers and submit instruction, operation, and maintenance manuals as required and to the extent required under other Sections.
- G. Contents: Each manual shall have an index listing the contents. Information in the manuals shall include not less than:
  1. General introductions and overall equipment description, purpose, functions and simplified theory of operation.
  2. Specifications
  3. Installation instructions, procedures, sequences, and precautions, including tolerances for level, horizontal and vertical alignment.
  4. Grouting requirements.
  5. List showing lubricants for each item of mechanical equipment and recommended lubrication intervals.
  6. Start-up and beginning operation procedures.
  7. Operational procedures.
  8. Shutdown procedures.
  9. Maintenance and calibration procedures
  10. Parts lists
  11. Name, address and telephone number of each manufacturer's local representative.
- H. Manual Submittals: Unless otherwise specified, each submittal shall include two copies of each manual, one of which will be returned to the Contractor, marked to show the required review. When approved, deliver four copies to Architect unless otherwise specified.
- I. "As-Built" drawings of ductwork and piping, including all elbows, transitions, damper and valve locations shall be provided prior to commencement of air and water balance.

#### **1.11 QUALITY OF EQUIPMENT, MATERIALS AND WORKMANSHIP**

- A. Unless otherwise specified, equipment and materials used in the installation shall be new and in perfect condition when installed. Articles provided for the same general purpose or use shall be of the same make. Workmanship shall be of the best quality and none but competent mechanics skilled in their trades shall be employed. Furnish the services of an experienced

superintendent, who shall be constantly in charge of the work, together with all necessary journeymen, helpers and laborers required.

### **1.12 SEISMIC DESIGN**

- A. Contractor shall be responsible for anchors and connections of mechanical work to the building structure including calculations for approval by structural engineer or for approval by inspector of record, as applies, for items or work, where approval is deferred or where alternate support or anchorage detail is proposed to prevent damage as a result of an earthquake, including manufactured equipment, the connection and integrity of shop fabricated and field fabricated materials and equipment. The anchorage of all pipes, ducts, conduits, fixtures, equipment, etc. shall withstand the lateral forces and shall accommodate calculated building displacement as required by the California Building Code, and local city/county codes. (Building equipment and connections therefore shall be designed to resist lateral seismic forces equal to 1.0 of equipment weight to working allowable stress. Cantilever posts supporting equipment shall be designed to resist lateral seismic forces equal to 0.5 of equipment weight to allowable working stress. Conform to the following:
1. In accordance with Title 24, 2007 CBC Section 1613, details shall be provided for the seismic anchorage of all mechanical and electrical equipment, anchorage details shall be based upon appropriate design calculations.
  2. For equipment weighing 400 pounds or more anchorage details and appropriate design calculations shall be submitted as part of the mechanical and electrical drawings. "Deferred Approval" items will not be permitted unless specifically approved by the plan check supervisor.
    - a. Exception: Attachments of equipment weighting less than 400 pounds and supported directly on the floor or roof structure, furniture, or temporary or movable equipment and equipment weighing less than 20 pounds that is supported by vibration isolation devices suspended from the roof, wall or floor, need not be detailed on the plans provided the following notes are included on the mechanical and electrical plans.
  3. The seismic anchorage of mechanical and electrical equipment shall conform to C.C.R. Title 24, 2007 CBC Section 1613. Anchorage details for roof/floor-mounted equipment shall be shown on plans.

### **1.13 SUBSTITUTIONS AND CHANGES**

- A. The design has been based on data from certain manufacturers, suitable for each application. Recommendations for alternative manufacturers are made for each product, except when "no substitutions permitted" is indicated.
- B. It is the intent of the Owner to have this project constructed with materials, products and system originally designed and specified into the project.
- C. Alternatives that may require the modification, realignment and/or adjustment of other associated components, including impact on other trades, shall be accomplished at no additional cost or time to the contract and shall have the approval of the Architect.
- D. Substitutions shall be submitted addressing all features listed in the specifications. Features that deviate from the plans and specifications shall be clearly identified including justification for deviations. Design West Engineers will review initial submittal on substitutes only. Subsequent submittals made to correct deficiencies in original submittals will be reviewed at Contractor's expense based on Design West Engineer's hourly rate for engineering services.
- E. Should the Contractor elect to propose substitutions for the Owner's interest, the substitutions shall be in compliance with Section 01600.

### **1.14 APPROVALS**

- A. The Architect will have the right to accept or reject equipment, materials, workmanship, tests and determine when the Contractor has complied with the requirements herein specified.

### **1.15 SELECTION AND ORDERING OF EQUIPMENT AND MATERIALS**

- A. Immediately after award of the Contract and after the approval of submittals by the Architect, the Contractor shall arrange for the purchase and delivery of equipment and materials required, in ample quantities and at the proper time. He shall deliver to the Architect a complete list of equipment and materials ordered, giving descriptions, plate numbers, brochures, name of the wholesalers, date of the orders and approximate delivery dates.

### **1.16 LOCATIONS AND ACCESSIBILITY**

- A. Drawings show pipe and ductwork diagrammatically. Conform to Drawings as closely as possible in layout work. Vary run of piping, run and shape of ductwork and make offsets during progress of work as required to meet structural and other interferences as approved by Architect. Install piping and ductwork to best suit field conditions after coordinating with other trades. Run exposed piping and ductwork parallel to, or at right angle to, building walls. Keep horizontal lines as close to bottom of structures as possible. Conform to ceiling heights established on Drawings.
- B. Install equipment in such a manner as to be readily accessible for maintenance and repairs. Install piping, ducts and conduit in such a manner as to preserve headroom, avoid obstructions and keep openings and passageways clear.
- C. Installation at valves, thermometers, gauges, cleanouts, dampers, controls, steam and water specialties, duct access doors or any other indicating equipment or specialties requiring reading, adjustment, inspection, maintenance shall be conveniently and accessible located with reference to the finished building.
- D. Where wall and ceiling access doors are required but not shown, such doors shall be furnished under other sections and as directed by the Architect. Coordinate this requirement with appropriate trade.
- E. If changes in the indicated locations or arrangements are required, they shall be made without additional charges.
- F. In an existing area, where required, remove, reinstall, reconnect or replace, etc., any existing work to accommodate new work without any additional cost to the Owner. Material shall match existing, unless otherwise specified or approved in writing by the Architect.
- G. Provide sheaves and belts if required, to Test, Adjust and Balance Agency, to allow air moving equipment to meet flow requirements specified at no additional cost to the Owner.

### **1.17 COORDINATION OF TRADES**

- A. Contractor shall coordinate all trades in the interest of obtaining the most practical overall arrangement of equipment, piping, conduit, and ducts and to maintain maximum headroom and accessibility.
- B. No extras will be allowed for changes made necessary by interference between trades.
- C. Submit Composite Drawings in accordance with Special Conditions. Include dimensioned plans, elevations, sections and details and give complete information particularly as to the kinds and types of materials and equipment, size and location of sleeves, inserts, attachments, chases, openings, conduits, ducts, boxes, lighting, structural interferences. Coordinate these Composite Drawings and field layouts in the field for proper relationship to work of applicable trades based on field conditions. Contractor shall have competent personnel readily available for coordinating, checking, and supervision of field layouts. The procedures for submittals and resubmittals, and final distribution shall be as specified in Section 01300. Do not start installation of work involved under Composite Drawings until the Architect reviews applicable submittal. Discrepancies between the Drawings and Composite Drawings shall be specifically noted and identified on the Composite Drawings. Drawings for the various trades involved shall be submitted as required and reviewed prior to preparation of Composite Drawings.

1. Equipment Foundations and Bases: Furnish certified details and drawings for approval before fabrication. Furnish parts necessary for each foundation sub base and support.
2. Pipe Sleeves and Inserts: Furnish and install pipe sleeves and pipe support inserts before concrete is poured.
3. Roof, Wall and Floor Openings: Furnish Shop Drawings showing exact locations and sizes of openings through roofs, walls and floors.
4. Concrete: Conform to Concrete Section of the Specifications.

#### **1.18 GUARANTEES**

- A. Contractor shall guarantee workmanship, equipment and materials installed under his contract for a period of not less than one (1) year from the date of Substantial Completion. Should any defects occur during this period, the Contractor shall promptly repair or replace the defective item and any other damage caused to the building free of charge to the Owner, including cost of labor and materials.
- B. Guarantee included in this section to cover:
  1. Faulty or inadequate design of equipment or material installed
  2. Improper assembly or erection
  3. Defective workmanship or material
  4. Incorrect or inadequate operation or other failure
- C. He shall guarantee the complete and perfect operation of the entire system and that equipment will be supported in such a way as to be free of objectionable vibration and noise
- D. Furnish the parts and labor to replace any items found to be defective in the refrigeration equipment with the guarantee period
- E. In addition to other guarantees, furnish free maintenance for the refrigeration equipment, including replacement of refrigerant and oil, for a period of one (1) year. This shall include regular monthly maintenance and "On Call" service if required.
- F. For equipment bearing a manufacturer's warranty in excess of one year, furnish a copy of the warranty to the Owner, who shall be named as beneficiary.

#### **1.19 PROTECTION OF EQUIPMENT AND MATERIALS**

- A. Provide adequate storage facilities for equipment and materials on the site and shall make provisions to protect such materials and equipment from damage.

#### **1.20 CLOSING-IN OF UNINSPECTED WORK**

- A. Contractor shall not allow or cause any of the work, specifically ductwork and piping, to be covered up or enclosed until it has been inspected, tested, and approved by the Architect. Should any of work be covered up or enclosed before such inspection and test, he shall at his own expense, uncover the work and after it has been inspected, tested, and approved, make repairs with such materials as may be necessary to restore work to its original and proper condition.

#### **1.21 BUILDING FOOTING CLEARANCES**

- A. Under no circumstances shall pipes, ducts, or conduits penetrate footings. They shall cross below footings or through sleeves above footings. Those running parallel to footings shall have the minimum clearance from the cone of influence indicated on the Drawings or as required by Code.

#### **1.22 DAMAGE BY LEAKS**

- A. Contractor shall be responsible for all damage to any part of the premises caused by rain leaks through or around ducts or pipes, leaks or breaks in piping, equipment or fixtures furnished or installed by him for a period of one (1) year from the date of Substantial Completion.

### **1.23 EQUIPMENT LABELS**

- A. Equipment provided under this Section shall be provided with the manufacturer's metal identification labels attached to each individual piece of equipment showing complete performance characteristics, size, model and serial number.

### **1.24 PRELIMINARY OPERATION**

- A. Should the Owner request that any portion of the plant, apparatus, or equipment be operated for the Owner's beneficial use prior to the final completion and acceptance of the work, the Contractor shall conform to Beneficial Occupancy Provisions of the General Conditions. Such operation shall be under the supervision and direction of the Contractor. Such preliminary operation shall not be construed as an acceptance of any of the work.

### **1.25 MAINTAINING EXISTING SERVICES**

- A. The premises and existing building at the site will be in use at the time the work of this Section is in progress. Contractor shall conduct his work so as to cause no inconvenience or danger to the personnel on the premises.
- B. He shall maintain continuity of service to the existing mechanical systems, except for designated intervals during which connections can be made. The scheduling of the shut down period shall be at a time directed by the Architect.
- C. In some instances, it may be necessary to defer work in certain areas and locations until such time as existing facilities can be relocated or rearranged by the Owner. Therefore, whenever it becomes necessary for the Contractor to perform work under this contract in areas in which the Owner's work is being performed. This contractor shall advise the Architect relative to this requirement and shall follow closely the directive issued by the Architect insofar as time and procedure are concerned. Allow Owner 72 hours prior notice.
- D. This contractor shall include in his bid all premium time to which he may be subjected for performing work in such procedure and at such time as may be necessary to cause the least interference with the function of the Owner.

### **1.26 ELECTRICAL WORK**

- A. Coordinate with Division 16 in making the line and low voltage electrical connections and be responsible for the operation of the equipment furnished under this section.
- B. Voltage for electrical work will be included in Division 16. However, any control wiring which is required that is not shown on the control diagram shall be as described under this Section. In the event that the Contractor chooses to provide equipment that requires extra expense in the power or control wiring, he shall pay additional electrical costs.
- C. Safety switches, starters, circuit breakers, unless provided as a portion of package equipment, and the electrical connections of mechanical equipment to the electrical power service shall be provided under Division 16.
- D. Interconnecting wiring, safety switches, relays, controllers and motor starters which are integral components of packaged equipment shall be provided as an integral part of that equipment.
- E. All interconnecting power wiring and conduits shall be provided by Division 16.
- F. Control wiring shall be provided by Division 15, unless otherwise indicated on the drawings.
- G. Conduit for control wiring shall be provided by Division 16.

**\*\*\*END OF SECTION\*\*\***

## SECTION 15075

### MECHANICAL IDENTIFICATION

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Stencils.
- D. Pipe Markers.

##### 1.02 REFERENCE STANDARDS

- A. ASME A13.1 - Scheme for the Identification of Piping Systems; The American Society of Mechanical Engineers; 2007.

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Brady Corporation: [www.bradycorp.com](http://www.bradycorp.com).
- B. Champion America, Inc: [www.Champion-America.com](http://www.Champion-America.com).
- C. Seton Identification Products: [www.seton.com/aec](http://www.seton.com/aec).

##### 2.02 NAMEPLATES

- A. Description: Laminated three-layer plastic with engraved letters.
  - 1. Letter Color: White.
  - 2. Letter Height: 1/4 inch.
  - 3. Background Color: Black.

##### 2.03 TAGS

- A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

##### 2.04 STENCILS

- A. Stencils: With clean cut symbols and letters of following size:
  - 1. 3/4 to 1-1/4 inch Outside Diameter of Insulation or Pipe: 8 inch long color field, 1/2 inch high letters.
  - 2. 1-1/2 to 2 inch Outside Diameter of Insulation or Pipe: 8 inch long color field, 3/4 inch high letters.
  - 3. 2-1/2 to 6 inch Outside Diameter of Insulation or Pipe: 12 inch long color field, 1-1/4 inch high letters.
  - 4. 8 to 10 inch Outside Diameter of Insulation or Pipe: 24 inch long color field, 2-1/2 inch high letters.
  - 5. Over 10 inch Outside Diameter of Insulation or Pipe: 32 inch long color field, 3-1/2 inch high letters.
  - 6. Ductwork and Equipment: 2-1/2 inch high letters.
- B. Stencils shall be identified as indicated below including direction of flow

1. Refrigerant Suction Line - R.S.L.
2. Refrigerant Liquid Line - R.L.L.
3. Gravity Condensate - G.C.
4. Domestic Cold Water - D.C.W.
5. Domestic Hot Water - D.H.W.
6. Domestic Hot Water Return - D.H.W.R.

C. Stencil Paint: Semi-gloss enamel, colors conforming to ASME A13.1.

## **2.05 PIPE MARKERS**

- A. Comply with ASME A13.1.
- B. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Degrease and clean surfaces to receive adhesive for identification materials.

### **3.02 INSTALLATION**

- A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install plastic pipe markers in accordance with manufacturer's instructions.
- C. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
- D. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- E. Identify air handling units, pumps, heat transfer equipment, tanks, and water treatment devices with plastic nameplates. Small devices, such as in-line pumps, may be identified with tags.
- F. Identify control panels and major control components outside panels with plastic nameplates.
- G. Identify thermostats relating to terminal boxes or valves with nameplates.
- H. Identify valves in main and branch piping with tags.
- I. Identify air terminal units and radiator valves with numbered tags.
- J. Tag automatic controls, instruments, and relays. Key to control schematic.
- K. Identify piping, concealed or exposed, with plastic pipe markers. Use tags on piping 3/4 inch diameter and smaller. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

**END OF SECTION**



## SECTION 15086

### DUCT INSULATION

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Duct insulation.
- B. Duct Liner.
- C. Insulation jackets.

##### 1.02 RELATED REQUIREMENTS

- A. Section 15075 - Mechanical Identification.
- B. Section 15810 - Ducts: Glass fiber ducts.

##### 1.03 REFERENCE STANDARDS

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2007.
- B. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2007.
- C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.
- D. ASTM C553 - Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2008.
- E. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2010.
- F. ASTM C1071 - Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material); 2005e1.
- G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010b.
- H. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2010.
- I. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.
- J. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.
- K. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

##### 1.04 SUBMITTALS

- A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- B. Manufacturer's Instructions: Indicate installation procedures necessary to ensure acceptable workmanship and that installation standards will be achieved.

##### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section with not less than three years of documented experience.

##### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

#### **1.07 FIELD CONDITIONS**

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

### **PART 2 PRODUCTS**

#### **2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION**

- A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, NFPA 255, or UL 723.

#### **2.02 GLASS FIBER, FLEXIBLE**

- A. Manufacturer:
  - 1. Johns Manville Corporation: [www.jm.com](http://www.jm.com).
  - 2. Owens Corning Corp: [www.owenscorning.com](http://www.owenscorning.com).
  - 3. CertainTeed Corporation: [www.certainteed.com](http://www.certainteed.com).
- B. Insulation: ASTM C553; flexible, noncombustible blanket.
  - 1. 'K' value: 0.25 at 75 degrees F, when tested in accordance with ASTM C518.
  - 2. Governing body regulation values or as listed on the drawings as more stringent than 'K' value above, insulation value shall be superceeded with said value
- C. Vapor Barrier Jacket:
  - 1. Kraft paper with glass fiber yarn and bonded to aluminized film.
  - 2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E96/E96M.

#### **2.03 GLASS FIBER, RIGID**

- A. Manufacturer:
  - 1. Johns Manville Corporation: [www.jm.com](http://www.jm.com).
  - 2. Owens Corning Corp: [www.owenscorning.com](http://www.owenscorning.com).
  - 3. CertainTeed Corporation: [www.certainteed.com](http://www.certainteed.com).
- B. Insulation: ASTM C612; rigid, noncombustible blanket.
  - 1. 'K' value: .16 at 75 degrees F, when tested in accordance with ASTM C518.
  - 2. Governing body regulation values or as listed on the drawings as more stringent than 'K' value above, insulation value shall be superceeded with said value
- C. Vapor Barrier Jacket:
  - 1. Kraft paper with glass fiber yarn and bonded to aluminized film.
  - 2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E96/E96M.

#### **2.04 JACKETS**

- A. Canvas Jacket: UL listed 6 oz/sq yd plain weave cotton fabric treated with dilute fire retardant lagging adhesive.
- B. Mineral Fiber (Outdoor) Jacket: Asphalt impregnated and coated sheet, 50 lb/square.
- C. Aluminum Jacket: ASTM B209 (ASTM B209M).
  - 1. Thickness: 0.016 inch sheet.

## **2.05 DUCT LINER**

- A. Manufacturers:
  - 1. Johns Manville Corporation: [www.jm.com](http://www.jm.com).
  - 2. Owens Corning Corp: [www.owenscorning.com](http://www.owenscorning.com).
  - 3. CertainTeed Corporation: [www.certainteed.com](http://www.certainteed.com).
- B. Insulation: Incombustible glass fiber complying with ASTM C 1071; flexible blanket, rigid board, and preformed round liner board; impregnated surface and edges coated with poly vinyl acetate polymer, or acrylic polymer shown to be fungus and bacteria resistant by testing to ASTM G 21.
  - 1. Apparent Thermal Conductivity: Maximum of .24 at 75 degrees F.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that ducts have been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Insulated ducts conveying air below ambient temperature:
  - 1. Finish with tape and vapor barrier jacket.
  - 2. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
- D. Insulated ducts conveying air above ambient temperature:
- E. Exterior Applications: Provide insulation with vapor barrier jacket. Cover with with calked aluminum jacket with seams located on bottom side of horizontal duct section.
- F. External Duct Insulation Application:
  - 1. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
  - 2. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
- G. Duct and Plenum Liner Application:
  - 1. Secure insulation with mechanical liner fasteners. Refer to SMACNA HVAC Duct Construction Standards - Metal and Flexible for spacing.
  - 2. Seal and smooth joints. Seal and coat transverse joints.
  - 3. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

### **3.03 SCHEDULES - INSULATE DUCTS PER TITLE-24 REQUIREMENTS**

**END OF SECTION**

## SECTION 15145

### PLUMBING PIPING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Pipe, pipe fittings, valves, and connections for piping systems.
  - 1. Sanitary sewer and vent.
  - 2. Domestic water.
  - 3. Natural Gas.

##### 1.02 RELATED REQUIREMENTS

- A. Section 15075 - Mechanical Identification.

##### 1.03 REFERENCE STANDARDS

- A. ANSI Z21.22 - American National Standard for Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems; 1999, and addenda A&B (R2004).
- B. ASME B16.3 - Malleable Iron Threaded Fittings; The American Society of Mechanical Engineers; 1998 (R2006).
- C. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005) (ANSI B16.18).
- D. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005).
- E. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV; The American Society of Mechanical Engineers; 2002.
- F. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV; The American Society of Mechanical Engineers; 2007.
- G. ASME B31.1 - Power Piping; The American Society of Mechanical Engineers; 2007 (ANSI/ASME B31.1).
- H. ASME B31.2 - Fuel Gas Piping; The American Society of Mechanical Engineers; 1968.
- I. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers; 2008 (ANSI/ASME B31.9).
- J. ASME (BPV IX) - Boiler and Pressure Vessel Code, Section IX - Welding and Brazing Qualifications; The American Society of Mechanical Engineers; 2010.
- K. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2010.
- L. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2011.
- M. ASTM B32 - Standard Specification for Solder Metal; 2008.
- N. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2009.
- O. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2005.
- P. ASTM C425 - Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings; 2004 (Reapproved 2009).

- Q. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2009a.
- R. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2006.
- S. ASTM D2239 - Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter; 2003.
- T. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2004 (Reapproved 2009).
- U. ASTM D2661 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings; 2008.
- V. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2010.
- W. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers; 1992 (Reapproved 2008).
- X. AWS A5.8/A5.8M - Specification for Filler Metals for Brazing and Braze Welding; American Welding Society; 2004 and errata.
- Y. CISPI 301-09 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications; Cast Iron Soil Pipe Institute; 2005.
- Z. CISPI 310-10 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; Cast Iron Soil Pipe Institute; 2004.
- AA. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 2009.
- AB. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 1996.
- AC. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2009.
- AD. ASME - Boiler and Pressure Vessel Code
- AE. AGA - American Gas Association Code

#### **1.04 SUBMITTALS**

- A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- B. Maintenance Materials: Furnish the following for County of Riverside EDA's use in maintenance of project.

#### **1.05 QUALITY ASSURANCE**

- A. Perform Work in accordance with State of California, standards.
  - 1. Maintain one copy on project site.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.
- C. Welding Materials and Procedures: Conform to ASME (BPV IX) and applicable state labor regulations.
- D. Welder Qualifications: Certified in accordance with ASME (BPV IX).

- E. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

#### **1.06 REGULATORY REQUIREMENTS**

- A. Perform Work in accordance with State of California plumbing code.
- B. Conform to applicable code for installation of backflow prevention devices.
- C. Provide certificate of compliance from authority having jurisdiction indicating approval of installation of backflow prevention devices.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

### **PART 2 PRODUCTS**

#### **2.01 SANITARY SEWER PIPING, ABOVE GRADE**

- A. Cast Iron Pipe: CISPI 301, hubless, service weight.
  - 1. Fittings: Cast iron.
  - 2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.
- B. Copper Tube: ASTM B88 (ASTM B88M), Type K (A).
  - 1. Fittings: ASME B16.29, wrought copper, or ASME B16.32, sovent.
  - 2. Joints: ASTM B32, alloy Sn50 solder.

#### **2.02 WATER PIPING, ABOVE GRADE**

- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
  - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
  - 2. Joints: ASTM B32, alloy Sn95 solder.

#### **2.03 NATURAL GAS PIPING, ABOVE GRADE**

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
  - 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
  - 2. Joints: NFPA 54, threaded or welded to ASME B31.1.
- B. Polyethylene Pipe: ASTM D 2513, SDR 11
  - 1. Fittings: ASTM D 2683 or ASTM D 2513 socket type.
  - 2. Joints: Fusion welded

#### **2.04 FLANGES, UNIONS, AND COUPLINGS**

- A. Unions for Pipe Sizes 3 Inches and Under:
  - 1. Copper tube and pipe: Class 150 bronze unions with soldered joints.
- B. Grooved and Shouldered Pipe End Couplings:
  - 1. Housing: Malleable iron clamps to engage and lock, designed to permit some angular deflection, contraction, and expansion; steel bolts, nuts, and washers; galvanized for galvanized pipe.
  - 2. Sealing gasket: "C" shape composition sealing gasket.

## 2.05 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
  - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
  - 2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
  - 3. Trapeze Hangers: Welded steel channel frames attached to structure.
  - 4. Vertical Pipe Support: Steel riser clamp.
- B. Plumbing Piping - Drain, Waste, and Vent:
  - 1. Conform to ASME B31.9.
  - 2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
  - 3. Hangers for Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
- C. Plumbing Piping - Water:
  - 1. Conform to ASME B31.9.
  - 2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
  - 3. Hangers for Cold Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
  - 4. Hangers for Hot Pipe Sizes 2 Inches to 4 Inches: Carbon steel, adjustable, clevis.

## 2.06 BALL VALVES

- A. Manufacturers:
  - 1. Tyco Flow Control: [www.tycoflowcontrol.com](http://www.tycoflowcontrol.com).
  - 2. Apollo Valves: [www.apollovalves.com](http://www.apollovalves.com).
  - 3. Nibco, Inc: [www.nibco.com](http://www.nibco.com).
  - 4. Milwaukee Valve Company: [www.milwaukeevalve.com](http://www.milwaukeevalve.com).
  - 5. Stockham: [www.stockham.com](http://www.stockham.com)
- B. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze, two piece body, chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, solder ends with union.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

### 3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### 3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.

- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 15122.
- G. Provide access where valves and fittings are not exposed.
- H. Install valves with stems upright or horizontal, not inverted.
- I. Install water piping to ASME B31.9.
- J. Pipe Hangers and Supports:
  - 1. Install in accordance with ASME B31.9.
  - 2. Support horizontal piping as scheduled.
  - 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
  - 4. Place hangers within 12 inches of each horizontal elbow.
  - 5. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.

#### **3.04 APPLICATION**

- A. Install unions downstream of valves and at equipment or apparatus connections.
- B. Install globe valves for throttling, bypass, or manual flow control services.
- C. Provide spring loaded check valves on discharge of water pumps.

#### **3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM**

- A. Disinfect water distribution system in accordance with Section 02515.
- B. Prior to starting work, verify system is complete, flushed and clean.

#### **3.06 SERVICE CONNECTIONS**

- A. Provide new sanitary sewer services. Before commencing work check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.
- B. Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves, pressure reducing valve, and sand strainer.
- C. Provide new gas service complete with gas meter and regulators. Gas service distribution piping to have initial minimum pressure of 7 inch wg. Provide regulators on each line serving gravity type appliances, sized in accordance with equipment.

#### **3.07 SCHEDULES - SEE SHEET P-4.1 FOR PIPE SUPPORT SCHEDULE**

**END OF SECTION**



## SECTION 15146

### PLUMBING SPECIALTIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Cleanouts.
- B. Water hammer arrestors.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01600 - Product Requirements: Procedures for [Owner]-supplied products.
- B. Section 15145 - Plumbing Piping.
- C. Section 15410 - Plumbing Fixtures.
- D. Section 15430 - Plumbing Equipment.

##### 1.03 REFERENCE STANDARDS

- A. ASME A112.6.3 - Floor and Trench Drains; The American Society of Mechanical Engineers; 2001 (R2007).
- B. ASSE 1011 - Hose Connection Vacuum Breakers; American Society of Sanitary Engineering; 2004 (ANSI/ASSE 1011).
- C. ASSE 1012 - Backflow Preventer with Intermediate Atmospheric Vent; American Society of Sanitary Engineering; 2002 (ANSI/ASSE 1012).
- D. ASSE 1013 - Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers; American Society of Sanitary Engineering; 2005.
- E. ASSE 1019 - Vacuum Breaker Wall Hydrants, Freeze Resistant Automatic Draining Type; American Society of Sanitary Engineering; 2004, and Errata 2005 (ANSI/ASSE 1019).
- F. PDI-WH 201 - Water Hammer Arresters; Plumbing and Drainage Institute; 2006.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- C. Certificates: Certify that oil interceptors meet or exceed specified requirements.

##### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years documented experience.

##### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept specialties on site in original factory packaging. Inspect for damage.

#### PART 2 PRODUCTS

##### 2.01 DRAINS

- A. Manufacturers:
  - 1. Josam Company: [www.josam.com](http://www.josam.com).
  - 2. Jay R. Smith Manufacturing Company: [www.jayrsmith.com](http://www.jayrsmith.com).
  - 3. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
  - 4. Mifab: [www.mifab.com](http://www.mifab.com)

- B. Floor Drain:
  - 1. ASME A112.6.3; galvanized cast iron two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer.
- C. Floor Sink:
  - 1. Cast iron 8 inch square, 6 inch deep flanged receptor with seepage holes, acid resistant coated interior, loose set acid resistant coated cast iron grate, and aluminum dome bottom strainer.

## **2.02 CLEANOUTS**

- A. Manufacturers:
  - 1. Jay R. Smith Manufacturing Company: [www.jayrsmith.com](http://www.jayrsmith.com).
  - 2. Josam Company: [www.josam.com](http://www.josam.com).
  - 3. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
  - 4. Mifab: [www.mifab.com](http://www.mifab.com)

## **2.03 HOSE BIBBS**

- A. Manufacturers:
  - 1. Woodford: [www.woodfordmfg.com](http://www.woodfordmfg.com).
  - 2. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
  - 3. Mifab: [www.mifab.com](http://www.mifab.com)

## **2.04 HYDRANTS**

- A. Wall Hydrants:
  - 1. ASSE 1019; freeze resistant, self-draining type with chrome plated lockable recessed box hose thread spout, handwheel, and integral vacuum breaker.

## **2.05 WATER HAMMER ARRESTORS**

- A. Manufacturers:
  - 1. Precision Plumbing Products: [www.pppinc.com](http://www.pppinc.com).
  - 2. Watts Regulator Company: [www.wattsregulator.com](http://www.wattsregulator.com).
  - 3. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
  - 4. Mifab: [www.mifab.com](http://www.mifab.com)

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- C. Install floor cleanouts at elevation to accommodate finished floor.
- D. Install approved portable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibbs.
- E. Pipe relief from backflow preventer to nearest drain.

**END OF SECTION**

## SECTION 15186

### REFRIGERANT PIPING AND SPECIALTIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Piping.
- B. Refrigerant.
- C. Moisture and liquid indicators.
- D. Valves.
- E. Filter-driers.
- F. Expansion valves.

##### 1.02 REFERENCE STANDARDS

- A. AHRI 710 - Performance Rating of Liquid-Line Driers; Air-Conditioning, Heating, and Refrigeration Institute; 2009.
- B. AHRI 750 - Standard for Thermostatic Refrigerant Expansion Valves; Air-Conditioning, Heating, and Refrigeration Institute; 2007.
- C. AHRI 760 - Standard for Performance Rating of Solenoid Valves for Use With Volatile Refrigerants; Air-Conditioning, Heating, and Refrigeration Institute; 2007.
- D. ASHRAE Std 15 - Safety Standard for Refrigeration Systems; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 2010 (ANSI/ASHRAE Std 15).
- E. ASHRAE Std 34 - Designation and Safety Classification of Refrigerants; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 2007.
- F. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005).
- G. ASME B16.26 - Cast Copper Alloy Fittings For Flared Copper Tubes; The American Society of Mechanical Engineers; 2006.
- H. ASME B31.5 - Refrigeration Piping and Heat Transfer Components; The American Society of Mechanical Engineers; 2006.
- I. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2009.
- J. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2005.
- K. ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service; 2008.
- L. AWS A5.8/A5.8M - Specification for Filler Metals for Brazing and Braze Welding; American Welding Society; 2004 and errata.
- M. UL 429 - Electrically Operated Valves; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

##### 1.03 SYSTEM DESCRIPTION

- A. Where more than one piping system material is specified ensure system components are compatible and joined to ensure the integrity of the system is not jeopardized. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

- B. Provide pipe hangers and supports in accordance with ASME B31.5 unless indicated otherwise.
- C. Liquid Indicators:
  - 1. Use line size liquid indicators in main liquid line leaving condenser.
  - 2. If receiver is provided, install in liquid line leaving receiver.
- D. Valves:
  - 1. Use service valves on suction and discharge of compressors.
  - 2. Use gage taps at compressor inlet and outlet.
- E. Filter-Driers:
  - 1. Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.
- F. Solenoid Valves:
  - 1. Use in liquid line of single or multiple evaporator systems.

#### **1.04 SUBMITTALS**

- A. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.
- B. Maintenance Materials: Furnish the following for County of Riverside EDA's use in maintenance of project.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store piping and specialties in shipping containers with labeling in place.
- B. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.
- C. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

### **PART 2 PRODUCTS**

#### **2.01 PIPING**

- A. Copper Tube: ASTM B280, H58 hard drawn or O60 soft annealed.
  - 1. Fittings: ASME B16.22 wrought copper.
  - 2. Joints: Braze, AWS A5.8 BCuP silver/phosphorus/copper alloy.
- B. Copper Tube to 7/8 inch OD: ASTM B88 (ASTM B88M), Type K (A), annealed.
  - 1. Fittings: ASME B16.26 cast copper.
  - 2. Joints: Flared.
- C. Pipe Supports and Anchors:
  - 1. Conform to ASME B31.5.
  - 2. Hangers for Pipe Sizes 1/2 to 1-1/2 Inch: Malleable iron adjustable swivel, split ring.

#### **2.02 REFRIGERANT**

- A. Refrigerant: R-410A as defined in ASHRAE Std 34.

#### **2.03 MOISTURE AND LIQUID INDICATORS**

- A. Indicators: Single port type, UL listed, with copper or brass body, flared or solder ends, sight glass, color coded paper moisture indicator with removable element cartridge and plastic cap; for maximum temperature of 200 degrees F and maximum working pressure of 500 psi.

#### **2.04 VALVES**

- A. Service Valves:
  - 1. Forged brass body with copper stubs, brass caps, removable valve core, integral ball

check valve, flared or solder ends, for maximum pressure of 500 psi.

## **2.05 FILTER-DRIERS**

- A. Performance:
  - 1. Flow Capacity - Liquid Line: per manufactures recommendation, minimum, rated in accordance with AHRI 710.
  - 2. Pressure Drop: 2 psi, maximum, when operating at full connected evaporator capacity.
  - 3. Design Working Pressure: per manufactures recommendation, minimum.
- B. Cores: Molded or loose-fill molecular sieve desiccant compatible with refrigerant, activated alumina, activated charcoal, and filtration to 40 microns, with secondary filtration to 20 microns; of construction that will not pass into refrigerant lines.
- C. Construction: UL listed.
  - 1. Connections: As specified for applicable pipe type.

## **2.06 SOLENOID VALVES**

- A. Valve: AHRI 760, pilot operated, copper or brass body and internal parts, synthetic seat, stainless steel stem and plunger assembly (permitting manual operation in case of coil failure), integral strainer, with flared, solder, or threaded ends; for maximum working pressure of 500 psi.
- B. Coil Assembly: UL 429, UL listed, replaceable with molded electromagnetic coil, moisture and fungus proof, with surge protector and color coded lead wires, integral junction box with pilot light.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### **3.02 INSTALLATION**

- A. Install refrigeration specialties in accordance with manufacturer's instructions.
- B. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
- C. Install piping to conserve building space and avoid interference with use of space.
- D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- E. Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.
- F. Provide clearance for installation of insulation and access to valves and fittings.
- G. Provide access to concealed valves and fittings.
- H. Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.

### **3.03 SCHEDULES - SEE SHEET M-3.2**

**END OF SECTION**

## SECTION 15410

### PLUMBING FIXTURES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Water closets.
- B. Urinals.
- C. Lavatories.
- D. Drinking fountains.

##### 1.02 RELATED REQUIREMENTS

- A. Section 15145 - Plumbing Piping.
- B. Section 15146 - Plumbing Specialties.
- C. Section 15430 - Plumbing Equipment.

##### 1.03 REFERENCE STANDARDS

- A. ANSI Z124.2 - American National Standard for Plastic Shower Units; 1995.
- B. ASME A112.6.1M - Supports for Off-the-Floor Plumbing Fixtures for Public Use; The American Society of Mechanical Engineers; 1997 (Reaffirmed 2002).
- C. ASME A112.18.1 - Plumbing Supply Fittings; The American Society of Mechanical Engineers; 2005.
- D. ASME A112.19.1M - Enameled Cast Iron Plumbing Fixtures; The American Society of Mechanical Engineers; 1994 (R2004).
- E. ASME A112.19.2 - Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals; The American Society of Mechanical Engineers; 2008.
- F. ASME A112.19.3 - Stainless Steel Plumbing Fixtures (Designed for Residential Use); The American Society of Mechanical Engineers; 2008.
- G. ASME A112.19.4M - Porcelain Enameled Formed Steel Plumbing Fixtures; The American Society of Mechanical Engineers; 1994 (R2004).
- H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010b.

##### 1.04 SUBMITTALS

- A. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- B. Manufacturer's Instructions: Indicate installation methods and procedures.
- C. Maintenance Data: Include fixture trim exploded view and replacement parts lists.

##### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

##### 1.06 REGULATORY REQUIREMENTS

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

## 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

## PART 2 PRODUCTS

### 2.01 FLUSH VALVE WATER CLOSETS

- A. Water Closets: Vitreous china, ASME A112.19.2, floor mounted, siphon jet flush action, china bolt caps.
  - 1. Flush Volume: 1.28 gallon, maximum.
  - 2. Flush Valve: Exposed (top spud).
  - 3. Flush Operation: Manual, oscillating handle.
  - 4. Handle Height: 44 inches or less.
  - 5. Manufacturers:
    - a. American Standard Inc: [www.americanstandard.com](http://www.americanstandard.com).
    - b. Sloan Valve Company: [www.sloanvalve.com](http://www.sloanvalve.com).
    - c. Kohler Company: [www.kohler.com](http://www.kohler.com).
    - d. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
    - e. Substitutions: See Section 01600 - Product Requirements.
- B. Flush Valves: ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
  - 1. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
- C. Seats:
  - 1. Manufacturers:
    - a. Olsonite: [www.olsonite.com](http://www.olsonite.com).
    - b. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
    - c. Substitutions: See Section 01600 - Product Requirements.
  - 2. Solid white plastic, open front, extended back, self-sustaining hinge, brass bolts, without cover.

### 2.02 WALL HUNG URINALS

- A. Wall Hung Urinal Manufacturers:
  - 1. Zurn Industries, Inc; EcoVantage Zurn Z5799: [www.zurn.com](http://www.zurn.com).
- B. Urinals: Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier.
  - 1. Flush Volume: 0.125 gallon, maximum.
  - 2. Flush Style: Washout.
  - 3. Flush Valve: Exposed (top spud).
  - 4. Flush Operation: Sensor operated.
  - 5. Trap: Integral.
  - 6. Removable stainless steel strainer.
- C. Flush Valves: ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
  - 1. Sensor-Operated Type: Solenoid operator, battery powered, infrared sensor and over-ride push button.
  - 2. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.

### 2.03 LAVATORIES

- A. Lavatory Manufacturers:
  - 1. American Standard Inc: [www.americanstandard.com](http://www.americanstandard.com).
  - 2. Kohler Company: [www.kohler.com](http://www.kohler.com).
  - 3. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).

- B. Vitreous China Wall Hung Basin: ASME A112.19.2; vitreous china wall hung lavatory, 17 1/4 by 19 1/4 inch minimum, with 4 inch high back, rectangular basin with splash lip, front overflow, and soap depression.
- C. Steel Counter Top Basin:
  - 1. ASME A112.19.4M; porcelain on steel self-rimming counter top lavatory, with drillings on 4 inch centers, front overflow, soap depression, seal of putty, calking, or concealed vinyl gasket.
- D. Vitreous China Counter Top Basin:
  - 1. ASME A112.19.2; vitreous china self-rimming counter top lavatory, 20 1/4 x 17 1/2 inches with drillings on 4 inch centers, front overflow, seal of putty, calking, or concealed vinyl gasket.
- E. Supply Faucet Manufacturers:
  - 1. Chicago Faucets, a Geberit company: [www.chicagofaucets.com](http://www.chicagofaucets.com).
  - 2. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
- F. Supply Faucet:
  - ASME A112.18.1; chrome plated combination supply fitting with pop-up waste, water economy aerator with maximum 0.5 gpm flow, indexed handles.
  - 1. ASME A112.18.1; chrome plated metered mixing faucet with low voltage operated solenoid operator and infrared sensor, 0.5 gpm aerator and cover plate, open grid strainer.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.
- C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

#### **3.02 PREPARATION**

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

#### **3.03 INSTALLATION**

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid or flexible supplies to fixtures with loose key or integral stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall carriers and bolts.
- E. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07900, color to match fixture.

#### **3.04 INTERFACE WITH WORK OF OTHER SECTIONS**

- A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

#### **3.05 ADJUSTING**

- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.



### **3.06 CLEANING**

- A. Clean plumbing fixtures and equipment.

### **3.07 PROTECTION**

- A. Protect installed products from damage due to subsequent construction operations.
- B. Do not permit use of fixtures by construction personnel.
- C. Repair or replace damaged products before Date of Substantial Completion.

### **3.08 SCHEDULES**

- A. Fixture Heights: Install fixtures to heights above finished floor as indicated.
  - 1. Water Closet:
    - a. Standard: 15 inches to top of bowl rim.
    - b. Accessible: 18 inches to top of seat.
  - 2. Water Closet Flush Valves:
    - a. Standard: 11 inches min. above bowl rim.
    - b. Recessed: 10 inches min. above bowl rim.
  - 3. Urinal:
    - a. Standard: 22 inches to top of bowl rim.
    - b. Accessible: 17 inches to top of bowl rim.
  - 4. Lavatory:
    - a. Standard: 31 inches to top of basin rim.
    - b. Accessible: 34 inches to top of basin rim.
- B. Fixture Rough-In - See sheet P-0.1

**END OF SECTION**

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrates are ready for installation of units and openings are as indicated on shop drawings.
- B. Verify that proper power supply is available and in correct location.
- C. Verify that proper fuel supply is available for connection.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and requirements of local authorities having jurisdiction.
- B. Install in accordance with NFPA 90A and NFPA 90B.
- C. Install refrigeration systems in accordance with ASHRAE Std 15.

**END OF SECTION**

## SECTION 15735

### PACKAGED ROOF TOP AIR CONDITIONING UNITS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Packaged roof top unit.
- B. Unit controls.
- C. Roof mounting curb and base.
- D. Maintenance service.

##### 1.02 RELATED REQUIREMENTS

- A. Section 16155 - Equipment Wiring: Installation and wiring of thermostats and other controls components; wiring from unit terminal strip to remote panel.
- B. Section 16155 - Equipment Wiring: Electrical characteristics and wiring connections.

##### 1.03 REFERENCE STANDARDS

- A. AHRI 210/240 - Standard for Performance Rating of Unitary Air Conditioning and Air-Source Heat Pump Equipment; Air-Conditioning, Heating, and Refrigeration Institute; 2008.
- B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilation Systems; National Fire Protection Association; 2009.

##### 1.04 SUBMITTALS

- A. Product Data: Provide capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.
- B. Shop Drawings: Indicate capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.
- C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- D. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in County of Riverside EDA's name and registered with manufacturer.

##### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.

##### 1.06 WARRANTY

- A. Provide a five year warranty to include coverage for refrigeration compressors.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Carrier Corporation: [www.carrier.com](http://www.carrier.com)
- B. Trane Inc: [www.trane.com](http://www.trane.com).
- C. York International Corporation/Johnson Controls: [www.york.com](http://www.york.com).

##### 2.02 AIR CONDITIONING UNITS

- A. General: Roof mounted units having gas burner and electric refrigeration.
- B. Description: Self-contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, heat exchanger and burner, controls, air filters, refrigerant cooling coil and compressor, condenser coil and condenser fan.
- C. Disconnect Switch: Factory mount disconnect switch in control panel.

### **2.03 FABRICATION**

- A. Cabinet: Steel with baked enamel finish, including access panels with screwdriver operated flush cam type fasteners. Structural members shall be minimum 18 gage, with access doors or panels of minimum 20 gage.
- B. Heat Exchangers: Aluminized steel, of welded construction.
- C. Supply Fan: Forward curved centrifugal type, resiliently mounted with V-belt drive, adjustable variable pitch motor pulley, and rubber isolated hinge mounted high efficiency motor. Isolate complete fan assembly. Refer to Section 15073.
- D. Air Filters: media with extended surface media filters. Refer to Section 15860.
- E. Roof Mounting Curb: 14 inches high galvanized steel, channel frame with gaskets, nailer strips.
- F. Roof Mounting Curb: 24 inches high galvanized steel, channel frame with gaskets, nailer strips.

### **2.04 BURNER**

- A. Gas Burner: Atmospheric type burner with adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame sensing device, and automatic 100 percent shut-off pilot.
- B. Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignition failure, energize blower motor, and after air flow proven and slight delay, allow gas valve to open.
- C. High Limit Control: Temperature sensor with fixed stop at maximum permissible setting, de-energize burner on excessive bonnet temperature and energize burner when temperature drops to lower safe value.
- D. Supply Fan Control: Temperature sensor sensing bonnet temperatures and independent of burner controls, with provisions for continuous fan operation.

### **2.05 EVAPORATOR COIL**

- A. Provide copper tube aluminum fin coil assembly with galvanized drain pan and connection.
- B. Provide capillary tubes or thermostatic expansion valves for units of 6 tons capacity and less, and thermostatic expansion valves and alternate row circuiting for units 7.5 tons cooling capacity and larger.

### **2.06 COMPRESSOR**

- A. Provide semi-hermetic compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gage ports, and filter drier.

### **2.07 CONDENSER COIL**

- A. Provide copper tube aluminum fin coil assembly with subcooling rows and coil guard.
- B. Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor. Provide high efficiency fan motors.

- C. Provide refrigerant pressure switches to cycle condenser fans.

## **2.08 MIXED AIR CASING**

- A. Dampers: Provide remote controlled outside and return air dampers with damper operator and remote CO2 sensor for adjusting outside air quantity.
- B. Gaskets: Provide tight fitting dampers with edge gaskets.
- C. Damper Operator: Pneumatic piston or gear driven type with spring return and pilot positioner.
- D. Mixed Air Controls: Maintain selected supply air temperature and return dampers to minimum position on call for heating and above 75 degrees F ambient, or when ambient air temperature exceeds return air temperature.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that roof is ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Verify that proper power supply is available.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NFPA 90A.
- C. Mount units on factory built roof mounting curb providing watertight enclosure to protect ductwork and utility services. Install roof mounting curb level.

### **3.03 SYSTEM STARTUP**

- A. Prepare and start equipment. Adjust for proper operation.

### **3.04 CLOSEOUT ACTIVITIES**

- A. Demonstrate operation to County of Riverside EDA's maintenance personnel.

### **3.05 MAINTENANCE**

- A. Provide service and maintenance of packaged roof top units for one year year from Date of Substantial Completion.
- B. Provide routine maintenance service with a two month interval as maximum time period between calls.
- C. Include maintenance items as outlined in manufacturer's operating and maintenance data, including minimum of six filter replacements, minimum of one fan belt replacement, and controls check-out, adjustments, and recalibration.
- D. After each service call, submit copy of service call work order or report that includes description of work performed.

### **3.06 SCHEDULES - SEE SHEET M-0.1**

**END OF SECTION**

## SECTION 15810

### DUCTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Metal ductwork.
- B. Nonmetal ductwork.
- C. Casing and plenums.
- D. Duct cleaning.

##### 1.02 RELATED REQUIREMENTS

- A. Section 15086 - Duct Insulation: External insulation and duct liner.
- B. Section 15820 - Duct Accessories.
- C. Section 15850 - Air Outlets and Inlets.
- D. Section 15950 - Testing, Adjusting, and Balancing.

##### 1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2010.
- B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2009.
- C. NFPA 90B - Standard for the Installation of Warm Air Heating and Air Conditioning Systems; National Fire Protection Association; 2009.
- D. SMACNA (LEAK) - HVAC Air Duct Leakage Test Manual; Sheet Metal and Air Conditioning Contractors' National Association; 1985, First Edition.
- E. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.
- F. SMACNA (FGD) - Fibrous Glass Duct Construction Standards; Sheet Metal and Air Conditioning Contractors' National Association; 2003.
- G. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

##### 1.04 PERFORMANCE REQUIREMENTS

- A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.

##### 1.05 SUBMITTALS

- A. Product Data: Provide data for duct materials, duct liner, and duct connections.
- B. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

##### 1.06 REGULATORY REQUIREMENTS

- A. Construct ductwork to NFPA 90A standards.

##### 1.07 FIELD CONDITIONS

- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures within acceptable range during and after installation of duct sealants.

## **PART 2 PRODUCTS**

### **2.01 DUCT ASSEMBLIES**

#### **2.02 MATERIALS**

- A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
- B. Flexible Ducts:
  - 1. UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire.
    - a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
    - b. Maximum Velocity: 4000 fpm.
    - c. Temperature Range: -20 degrees F to 210 degrees F.
- C. Insulated Flexible Ducts:
  - 1. UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire; fiberglass insulation; polyethylene vapor barrier film.
    - a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
    - b. Maximum Velocity: 4000 fpm.
    - c. Temperature Range: -20 degrees F to 210 degrees F.
- D. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
- E. Hanger Rod: ASTM A 36/A 36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

#### **2.03 DUCTWORK FABRICATION**

- A. Fabricate ductwork gauge in accordance with current (CMC) California Mechanical Code and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. T's, bends, and elbows: Construct according to (CMC) California Mechanical Code and SMACNA (DCS).
- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- E. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- F. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.
- G. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.

#### **2.04 DUCT MANUFACTURERS**

- A. Metal-Fab, Inc: [www.mtlfab.com](http://www.mtlfab.com).
- B. SEMCO Incorporated: [www.semcoinc.com](http://www.semcoinc.com).
- C. United McGill Corporation: [www.unitedmcgill.com](http://www.unitedmcgill.com).

## **2.05 MANUFACTURED DUCTWORK AND FITTINGS**

- A. Manufacture in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

## **2.06 CASINGS**

- A. Fabricate casings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and construct for operating pressures indicated.
- B. Mount floor mounted casings on 4 inch high concrete curbs. At floor, rivet panels on 8 inch centers to angles. Where floors are acoustically insulated, provide liner of 18 gage galvanized expanded metal mesh supported at 12 inch centers, turned up 12 inches at sides with sheet metal shields.
- C. Mount floor mounted casings on 4 inch high concrete curbs. At floor, rivet panels on 8 inch centers to angles. Where floors are acoustically insulated, provide liner of 18 gage galvanized expanded metal mesh supported at 12 inch centers, turned up 12 inches at sides with sheet metal shields.
- D. Reinforce door frames with steel angles tied to horizontal and vertical plenum supporting angles. Install hinged access doors where indicated or required for access to equipment for cleaning and inspection.
- E. Fabricate acoustic casings with reinforcing turned inward. Provide 16 gage back facing and 22 gage perforated front facing with 3/32 inch diameter holes on 5/32 inch centers. Construct panels 3 inches thick packed with 4.5 lb/cu ft minimum glass fiber media, on inverted channels of 16 gage.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install, support, and seal ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Install in accordance with manufacturer's instructions.
- C. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- D. Install and seal metal and flexible ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- E. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- F. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- G. Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.
- H. Use double nuts and lock washers on threaded rod supports.
- I. Connect terminal units to supply ducts with one foot maximum length of flexible duct. Do not use flexible duct to change direction.
- J. Connect diffusers or light troffer boots to low pressure ducts with 7 feet maximum length of flexible duct held in place with strap or clamp.
- K. During construction provide temporary closures of metal or taped polyethylene on open



ductwork to prevent construction dust from entering ductwork system.

- L. At exterior wall louvers, seal duct to louver frame and install blank-out panels.

### **3.02 CLEANING**

- A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment that could be harmed by excessive dirt with temporary filters, or bypass during cleaning.

### **3.03 SCHEDULES**

- A. Ductwork Material:
  - 1. Low Pressure Supply (Heating Systems): Steel, Aluminum, Fibrous Glass.
  - 2. Low Pressure Supply (System with Cooling Coils): Steel, Aluminum, Fibrous Glass.
  - 3. Return and Relief: Steel, Aluminum.
  - 4. General Exhaust: Steel, Aluminum.
  - 5. Outside Air Intake: Steel.
  - 6. Combustion Air: Steel.
- B. Ductwork Pressure Class:
  - 1. Supply (Heating Systems): 1/2 inch
  - 2. Supply (System with Cooling Coils): 1/2 inch.
  - 3. Return and Relief: 1/2 inch.
  - 4. Outside Air Intake: 1/2 inch.
  - 5. Combustion Air: 1/2 inch.

**END OF SECTION**

## SECTION 15820

### DUCT ACCESSORIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Air turning devices/extractors.
- B. Flexible duct connections.
- C. Volume control dampers.

##### 1.02 REFERENCE STANDARDS

- A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2009.
- B. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.
- C. UL 33 - Heat Responsive Links for Fire-Protection Service; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

##### 1.03 SUBMITTALS

- A. Product Data: Provide for shop fabricated assemblies including volume control dampers, duct access doors, and hardware used. Include electrical characteristics and connection requirements.
- B. Manufacturer's Installation Instructions: Provide instructions for fire dampers and combination fire and smoke dampers.

##### 1.04 QUALITY ASSURANCE

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

#### PART 2 PRODUCTS

##### 2.01 AIR TURNING DEVICES/EXTRACTORS

- A. Manufacturers:
  - 1. Krueger: [www.krueger-hvac.com](http://www.krueger-hvac.com).
  - 2. PCI Industries, Inc; Pottorff Brand: [www.portorff.com](http://www.portorff.com).
  - 3. Ruskin Company: [www.ruskin.com](http://www.ruskin.com).
  - 4. Titus: [www.titus-hvac.com](http://www.titus-hvac.com).
- B. Multi-blade device with radius blades attached to pivoting frame and bracket, steel construction, with worm drive mechanism with removable key operator.

##### 2.02 FLEXIBLE DUCT CONNECTIONS

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- B. Flexible Duct Connections: Fabric crimped into metal edging strip.

##### 2.03 VOLUME CONTROL DAMPERS

- A. Manufacturers:
  - 1. Louvers & Dampers, Inc: [www.louvers-dampers.com](http://www.louvers-dampers.com).
  - 2. Nailor Industries Inc: [www.nailor.com](http://www.nailor.com).
  - 3. PCI Industries, Inc; Pottorff Brand: [www.portorff.com](http://www.portorff.com).

4. Ruskin Company: [www.ruskin.com](http://www.ruskin.com).
- B. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- C. Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
- D. Quadrants:
  1. Provide locking, indicating quadrant regulators on single and multi-blade dampers.
  2. On insulated ducts mount quadrant regulators on stand-off mounting brackets, bases, or adapters.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA HVAC Duct Construction Standards - Metal and Flexible. Refer to Section 15810 for duct construction and pressure class.
- B. At fans and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.
- C. At equipment supported by vibration isolators, provide flexible duct connections immediately adjacent to the equipment; see Section 15072.
- D. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

**END OF SECTION**

## SECTION 15850

### AIR OUTLETS AND INLETS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Diffusers.
- B. Registers/grilles.
- C. Door grilles.
- D. Louvers.

##### 1.02 REFERENCE STANDARDS

- A. AMCA 500-L - Laboratory Methods of Testing Louvers for Rating; Air Movement and Control Association International, Inc.; 2007.
- B. ARI 890 - Standard for Air Diffusers and Air Diffuser Assemblies; Air-Conditioning and Refrigeration Institute; 2008.
- C. ASHRAE Std 70 - Method of Testing for Rating the Performance of Air Outlets and Inlets; American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.; 2006.
- D. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.

##### 1.03 SUBMITTALS

- A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

##### 1.04 QUALITY ASSURANCE

- A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Krueger: [www.krueger-hvac.com](http://www.krueger-hvac.com).
- B. Titus: [www.titus-hvac.com](http://www.titus-hvac.com).

##### 2.02 RECTANGULAR CEILING DIFFUSERS

- A. Type: Square, stamped, multi-core diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated.
- B. Frame: Surface mount type. In plaster ceilings, provide plaster frame and ceiling frame.
- C. Fabrication: Aluminum with baked enamel off-white finish.

##### 2.03 CEILING SUPPLY REGISTERS/GRILLES

- A. Type: Streamlined and individually adjustable curved blades to discharge air along face of grille, two-way deflection.
- B. Frame: 1 inch margin with countersunk screw mounting and gasket.
- C. Fabrication: Aluminum extrusions with factory off-white enamel finish.
- D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable

from face.

#### **2.04 CEILING EXHAUST AND RETURN REGISTERS/GRILLES**

- A. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with blades set at 45 degrees, vertical face.
- B. Frame: 1 inch margin with countersunk screw mounting.
- C. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face where not individually connected to exhaust fans.

#### **2.05 DOOR GRILLES**

- A. Type: V-shaped louvers of 20 gage thick steel, 1 inch deep on 1/2 inch centers.
- B. Frame: 20 gage steel with auxiliary frame to give finished appearance on both sides of door, with factory prime coat finish.

#### **2.06 LOUVERS**

- A. Type: 4 inch deep with blades on 45 degree slope with center baffle and return bend, heavy channel frame, 1/2 inch square mesh screen over exhaust and 1/2 inch square mesh screen over intake.
- B. Fabrication: 12 gage thick extruded aluminum, welded assembly, with factory prime coat finish color to be selected.
- C. Mounting: Furnish with interior flat flange for installation.

#### **2.07 GOOSENECKS**

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, of minimum 18 gage galvanized steel.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

#### **3.02 SCHEDULES SHOWN ON SHEET M-0.1**

**END OF SECTION**

## SECTION 15928

### INSTRUMENTS AND CONTROL ELEMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Air supply system.
- B. Thermostats.
- C. Automatic dampers.
- D. Damper operators.
- E. Time clocks.
- F. Miscellaneous accessories.

##### 1.02 RELATED REQUIREMENTS

- A. Section 15128 - Gages and Meters: Thermometer sockets, gage taps.
- B. Section 15820 - Duct Accessories: Installation of automatic dampers.
- C. Section 16140 - Wiring Devices: Elevation of exposed components.
- D. Section 16155 - Equipment Wiring: Electrical characteristics and wiring connections.

##### 1.03 REFERENCE STANDARDS

- A. AMCA 500-D - Laboratory Methods for Testing Dampers for Rating; Air Movement and Control Association International, Inc.; 2007.
- B. NEMA DC 3 - Residential Controls - Electrical Wall-Mounted Room Thermostats; National Electrical Manufacturers Association; 2008.

##### 1.04 SUBMITTALS

- A. Product Data: Provide description and engineering data for each control system component. Include sizing as requested. Provide data for each system component and software module.
- B. Shop Drawings: Indicate complete operating data, system drawings, wiring diagrams, and written detailed operational description of sequences. For automatic dampers indicate arrangement, velocities, and static pressure drops for each system.
- C. Manufacturer's Instructions: Provide for all manufactured components.
- D. Project Record Documents: Record actual locations of control components, including panels, thermostats, and sensors. Accurately record actual location of control components, including panels, thermostats, and sensors.
  - 1. Revise shop drawings to reflect actual installation and operating sequences.
- E. Operation and Maintenance Data: Include inspection period, cleaning methods, recommended cleaning materials, and calibration tolerances.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Automated Logic.
- B. Other Acceptable Manufacturers:
  - 1. BAC.
  - 2. LonWorks.
  - 3. eMAC: [emac.maxpg.com](http://emac.maxpg.com).

## 2.02 EQUIPMENT - GENERAL

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

## 2.03 CONTROL PANELS

- A. Unitized cabinet type for each system under automatic control with relays and controls mounted in cabinet and temperature indicators, pressure gages, pilot lights, push buttons and switches flush on cabinet panel face.

## 2.04 DAMPERS

- A. Performance: Test in accordance with AMCA 500-D.
- B. Frames: Galvanized steel, welded or riveted with corner reinforcement, minimum 12 gage.
- C. Blades: Galvanized steel, maximum blade size 8 inches wide, 48 inches long, minimum 22 gage, attached to minimum 1/2 inch shafts with set screws.
- D. Jamb Seals: Spring stainless steel.
- E. Leakage: Less than one percent based on approach velocity of 2000 ft/min and 4 inches wg.

## 2.05 DAMPER OPERATORS

- A. General: Provide smooth proportional control with sufficient power for air velocities 20 percent greater than maximum design velocity and to provide tight seal against maximum system pressures. Provide spring return for two position control and for fail safe operation.
  - 1. Provide sufficient number of operators to achieve unrestricted movement throughout damper range.
  - 2. Provide one operator for maximum 36 sq ft damper section.
- B. Inlet Vane Operators:
  - 1. High pressure with pilot positioners and sufficient force to move vanes when fan is started with vanes in closed position. Return vane operator to closed position on fan shutdown.
  - 2. Product:

## 2.06 INPUT/OUTPUT SENSORS

- A. Temperature Sensors
- B. Static Pressure Sensors
- C. Equipment Operation Sensors:
  - 1. Status Inputs for Fans: Differential pressure switch with adjustable range of 0 to 5 inches wg.
- D. Damper Position Indication: Potentiometer mounted in enclosure with adjustable crank arm assembly connected to damper to transmit 0 - 100 percent damper travel.
- E. Carbon Monoxide Detectors:
  - 1. Single or multichannel dual level detectors, using solid state sensors with three year minimum life. Sensor replacement shall take maximum 15 minutes. Suitable over temperature range of 23 to 130 degrees F.

## 2.07 THERMOSTATS

- A. Electric Room Thermostats:
  - 1. Type: NEMA DC 3, 24 volts, with setback/setup temperature control.
  - 2. Service: cooling and heating.
  - 3. Covers: Locking with set point adjustment, with thermometer.
- B. Room Thermostat Accessories:
  - 1. Insulating Bases: For thermostats located on exterior walls.

2. Aspirating Boxes: Where indicated for thermostats requiring flush installation.
- C. Airstream Thermostats:
1. Remote bulb or bimetallic rod and tube type, proportional action with adjustable setpoint in middle of range and adjustable throttling range.

## **2.08 TIME CLOCKS**

- A. Seven day programming switch timer with synchronous timing motor and seven day dial, continuously charged Ni-cad battery driven power failure 8 hour carry over and multiple switch trippers to control systems for minimum of two and maximum of eight signals per day with two normally open and two normally closed output switches.

## **2.09 TRANSMITTERS**

- A. Building Static Pressure Transmitter:
1. One pipe, direct acting, double bell, scale range 0.01 to 6.0 inch wg positive or negative, and sensitivity of 0.0005 inch wg. Transmit electronic signal to receiver with matching scale range.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that systems are ready to receive work.
- B. Beginning of installation means installer accepts existing conditions.
- C. Sequence work to ensure installation of components is complementary to installation of similar components in other systems.
- D. Coordinate installation of system components with installation of mechanical systems equipment such as air handling units and air terminal units.
- E. Ensure installation of components is complementary to installation of similar components.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Check and verify location of thermostats with plans and room details before installation. Locate 60 inches above floor. Align with lighting switches. Refer to Section 16140.
- C. Provide mixing dampers of opposed blade construction arranged to mix streams. Provide pilot positioners on mixed air damper motors. Provide separate minimum outside air damper section adjacent to return air dampers with separate damper motor.
- D. Mount control panels adjacent to associated equipment on vibration free walls or free standing angle iron supports. One cabinet may accommodate more than one system in same equipment room. Provide engraved plastic nameplates for instruments and controls inside cabinet and engraved plastic nameplates on cabinet face.
- E. Provide conduit and electrical wiring in accordance with Section 16155. Electrical material and installation shall be in accordance with appropriate requirements of Division 16.

**END OF SECTION**



## SECTION 15950

### TESTING, ADJUSTING, AND BALANCING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Testing, adjustment, and balancing of air systems.
- B. Measurement of final operating condition of HVAC systems.

##### 1.02 REFERENCE STANDARDS

- A. AABC MN-1 - AABC National Standards for Total System Balance; Associated Air Balance Council; 2002.
- B. ASHRAE Std 111 - Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 1988, with 1997 Errata.
- C. SMACNA (TAB) - HVAC Systems Testing, Adjusting, and Balancing; Sheet Metal and Air Conditioning Contractors' National Association; 2002.

##### 1.03 SUBMITTALS

- A. The contractor shall procure the services of an independent Air Balance and Testing Agency, approved by the Engineer, which specializes in the balancing and testing of heating, ventilating, and air conditioning systems. The independent agency shall be certified and in good standing with the AABC.
- B. Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract.
- C. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
  - 1. Submit to Architect.
  - 2. Include certification that the plan developer has reviewed the contract documents, the equipment and systems, and the control system with Architect and other installers to sufficiently understand the design intent for each system.
  - 3. Include at least the following in the plan:
    - a. List of all air flow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
    - b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted and balanced with the data cells to be gathered for each.
    - c. Identification and types of measurement instruments to be used and their most recent calibration date.
    - d. Discussion of what notations and markings will be made on the duct and piping drawings during the process.
    - e. Final test report forms to be used.
    - f. Expected problems and solutions, etc.
    - g. Criteria for using air flow straighteners or relocating flow stations and sensors.
    - h. Details of how TOTAL flow will be determined; for example:
      - 1) Air: Sum of terminal flows via control system calibrated readings or via hood readings of all terminals, supply (SA) and return air (RA) pitot traverse, SA or RA flow stations.
    - i. Specific procedures that will ensure that both air and water side are operating at the lowest possible pressures and methods to verify this.
    - j. Confirmation of understanding of the outside air ventilation criteria under all conditions.

- k. Method of verifying and setting minimum outside air flow rate will be verified and set and for what level (total building, zone, etc.).
  - l. Method of checking building static and exhaust fan and/or relief damper capacity.
  - m. Time schedule for deferred or seasonal TAB work, if specified.
  - n. False loading of systems to complete TAB work, if specified.
  - o. Exhaust fan balancing and capacity verifications, including any required room pressure differentials.
  - p. Procedures for field technician logs of discrepancies, deficient or uncompleted work by others, contract interpretation requests and lists of completed tests (scope and frequency).
  - q. Procedures for formal progress reports, including scope and frequency.
  - r. Procedures for formal deficiency reports, including scope, frequency and distribution.
- D. Field Logs: Submit at least twice a week to Commissioning Authority.
- E. Progress Reports.
- F. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
- 1. Submit to the Commissioning Authority within two weeks after completion of testing, adjusting, and balancing.
  - 2. Revise TAB plan to reflect actual procedures and submit as part of final report.
  - 3. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
  - 4. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
  - 5. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
  - 6. Units of Measure: Report data in both I-P (inch-pound) and SI (metric) units.
  - 7. Include the following on the title page of each report:
    - a. Name of Testing, Adjusting, and Balancing Agency.
    - b. Address of Testing, Adjusting, and Balancing Agency.
    - c. Telephone number of Testing, Adjusting, and Balancing Agency.
    - d. Project name.
    - e. Project location.
    - f. Project Architect.
    - g. Project Engineer.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 GENERAL REQUIREMENTS**

- A. Perform total system balance in accordance with one of the following:
  - 1. AABC MN-1, AABC National Standards for Total System Balance.
  - 2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
  - 3. SMACNA HVAC Systems Testing, Adjusting, and Balancing.
  - 4. Maintain at least one copy of the standard to be used at project site at all times.
- B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.
- C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.
- D. TAB Agency Qualifications:
  - 1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.

2. Certified by the following:
  - a. AABC, Associated Air Balance Council: [www.aabchq.com](http://www.aabchq.com); upon completion submit AABC National Performance Guaranty.
- E. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

### **3.02 EXAMINATION**

- A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
  1. Systems are started and operating in a safe and normal condition.
  2. Temperature control systems are installed complete and operable.
  3. Proper thermal overload protection is in place for electrical equipment.
  4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
  5. Duct systems are clean of debris.
  6. Fans are rotating correctly.
  7. Volume dampers are in place and open.
  8. Air coil fins are cleaned and combed.
  9. Access doors are closed and duct end caps are in place.
  10. Air outlets are installed and connected.
  11. Duct system leakage is minimized.
- B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.
- C. Beginning of work means acceptance of existing conditions.

### **3.03 ADJUSTMENT TOLERANCES**

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

### **3.04 RECORDING AND ADJUSTING**

- A. Field Logs: Maintain written logs including:
  1. Running log of events and issues.
  2. Discrepancies, deficient or uncompleted work by others.
  3. Contract interpretation requests.
  4. Lists of completed tests.
- B. Ensure recorded data represents actual measured or observed conditions.
- C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- D. Mark on the drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.
- E. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- F. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

### **3.05 AIR SYSTEM PROCEDURE**

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities.

- B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- F. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- G. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.
- H. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.
- I. Where modulating dampers are provided, take measurements and balance at extreme conditions.
- J. Measure building static pressure and adjust supply, return, and exhaust air systems to provide required relationship between each to maintain approximately 0.02 inches negative static pressure in chemical storage rooms.
- K. For variable air volume system powered units set volume controller to air flow setting indicated. Confirm connections properly made and confirm proper operation for automatic variable air volume temperature control.

### **3.06 SCOPE**

- A. Test, adjust, and balance the following:
  - 1. Packaged Roof Top Heating/Cooling Units
  - 2. Packaged Terminal Air Conditioning Units
  - 3. Computer Room Air Conditioning Units
  - 4. Fans

**END OF SECTION**

## SECTION 16010

### BASIC ELECTRICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SCOPE

- A. This section supplements all sections of this division and shall apply to all phases of work hereinafter specified, shown on the drawings, or required to provide a complete installation of electrical systems for the Project. The work required under this division is not limited to the electrical specifications and drawings. Refer to all bid documents including Civil, Architectural, Structural, and Mechanical documents which may designate Work to be accomplished. The intent of the Specifications is to provide a complete and operable electrical system, which shall include all documents that are a part of the entire Project Contract.
  - 1. Work included: Furnish all labor, material, tools, equipment, facilities, transportation, skilled supervision necessary for, and incidental to, performing operations in connection with furnishing, delivery, and installation of the work in this division complete as shown or noted on the Drawings and specified herein.
- B. Related Work Specified Elsewhere:
  - 1. Refer to all sections in the general contract conditions, Contract Requirements and Division 1, General Requirements.
- C. Work Installed but Furnished by Others:
  - 1. The electrical work includes the installation or connection of certain materials and equipment furnished by others. Verify installation details. Foundations for apparatus and equipment will be furnished by others unless otherwise noted or detailed.

##### 1.02 GENERAL REQUIREMENTS

- A. Guarantee See General Conditions:
  - 1. Except as may be specified under other Sections in the specification, guarantee equipment furnished under the specifications for a period of one year, except for equipment required to have a longer guarantee period, from date of final completion. Guarantee all work against defective workmanship, material, and improper installation. Upon notification of failure, correct deficiency immediately and without additional cost to the Owner.
  - 2. Standard warranty of manufacturer shall apply for replacement of parts after expiration of the above period. Manufacturer shall furnish replacement parts to the Owner or his service agency as approved. Furnish to the Owner, through the Architect, printed manufacturer's warranties complete with material included and expiration dates, upon completion of project. Conform to Division 01.
- B. Equipment Safety: All electrical materials and equipment shall be new and shall be listed by Underwriter's Laboratories and bear their label, or listed and certified by a nationally recognized testing authority where UL does not have an approval. Custom made equipment must have complete test data submitted by the manufacturer attesting to its safety.
- C. Codes and Regulations:
  - 1. Design, manufacturer, testing and method of installation of all apparatus and materials furnished under the requirements of these specifications shall conform to the latest publications or standard rules of the following:
    - a. Institute of Electrical and Electronic Engineers - IEEE
    - b. National Electrical Manufacturers' Association - NEMA
    - c. Underwriters' Laboratories, Inc. - UL
    - d. National Fire Protection Association - NFPA
    - e. American Society for Testing and Materials - ASTM
    - f. American National Standards Institute - ANSI
    - g. California Electrical Code - CEC, Title 24, Part 3
    - h. California Code of Regulations, Title 8, Subchapter 5

- i. California Building Code-CBC, Title 24 Parts 1 &2
  - j. State & Municipal Codes in Force in the Specific Project Area
  - k. Occupational Safety & Health Administration - OSHA
  - l. California State Fire Marshal
  - m. California Fire Code- CFC, Title 24 Part 9
  - n. National Electrical Testing Association - NETA
2. The term "Code", when used within the specifications, shall refer to the Publications, Standards, ordinances and codes, listed above. In the case where the codes have different levels of requirements the most stringent rules shall apply.
- D. Requirements of Regulatory Agencies:
- 1. Codes, Permits, and Fees: Where the Contract Documents exceed minimum requirements, the Contract Documents take precedence. Where code conflicts occur, the most stringent shall apply. The most stringent condition shall be as interpreted by the Engineer.
    - a. Comply with all requirements for permits, licenses, fees and Code. Permits, licenses, fees, inspections and arrangements required for the Contractor at his expense shall obtain the Work, unless otherwise specified.
    - b. Comply with the requirements of the applicable utility companies serving the Project. Make all arrangements with the utility companies for proper coordination of the Work.
- E. Shop Drawings:
- 1. See Division 01 for additional requirements.
  - 2. Time Schedules for Submission and Ordering: The Contractor shall prepare, review and coordinate his schedule of submissions carefully, determining the necessary lead time for preparing, submitting, checking, ordering and delivery of materials and equipment for timely arrival. The Contractor shall be responsible for conformance with the overall construction schedule.
  - 3. Submittals will be checked for general compliance with specifications only. The Contractor shall be responsible for deviations from the drawings or specifications and for errors or omissions of any sort in submittals.
  - 4. Submit a complete list of materials and equipment proposed for the job, including manufacturers names and catalog numbers.
  - 5. Shop drawings shall be submitted in completed groups of materials (i.e., lighting fixtures or switchgear). The Contractor shall add and sign the following paragraph on equipment and materials submitted for review. "It is hereby certified that the (equipment) (material) shown and marked in this submittal is that proposed to be incorporated into the project; is in compliance with the Contract Drawings and specifications and can be installed in the allocated spaces". Failure to add the above written statement for compliance will result in return of submittals without review.
    - a. Bind catalog cuts, plate numbers, descriptive bulletins and drawings, 11" x 17" (275 mm x 435 mm) or smaller, in sets with covers neatly showing titles.
    - b. The Contractor shall verify dimensions of equipment and be satisfied as to Code compliance for fit prior to submitting shop drawings for approval.
    - c. Where current limiting devices are specified, submit technical data to substantiate adequate protection of equipment cascaded downstream. Submittals shall not be reviewed unless supporting calculations and data are submitted therewith.
    - d. Include complete catalog information such as construction, ratings, insulation systems, as applicable.
    - e. For any material specified to meet UL or trade standards, furnish the manufacturers or vendor's certification that the material furnished for the work does in fact equal or exceed such specifications.
    - f. Reference listings to the specifications' Sections and Article to which each is applicable.
  - 6. Contractor shall prepare coordinated drawings when required by Division 01 or where noted otherwise.

- F. Interpretations: The Contractor through the Architect must make Requests for interpretations of drawings and specifications. Any such requests made by equipment manufacturers or suppliers will be referred to the Contractor.
- G. Standard of Quality
1. The contract Drawings and Specifications establish the "MINIMUM STANDARD OF QUALITY" each product and/or system must meet to be considered acceptable. Products of other manufactures will be considered if the product and/or system meet or exceed the "MINIMUM STANDARD OF QUALITY" established by this Contract Document.
  2. Items for similar application shall be of the same manufacturer.
  3. The label of listing by UL shall appear on all materials and equipment for which standards have been established by the agency.
  4. Where codes as listed in Section General Requirement Section of the Specifications that establish label or approved requirements, furnish all materials and equipment with either the required labels affixed or the necessary written approval.
  5. Provide the type and quantity of electrical materials and equipment necessary to complete Work and all systems in operation, tested and ready for use.
  6. Provide and install all incidental items that belong to the Work described and which are required for complete systems.
  7. All switchboards, distribution boards, panel boards and circuit breakers shall be of the same manufacturer.
  8. All wiring devices such as switches and receptacles shall be of the same manufacturer.
- H. Substitutions: Refer to Division 01
- I. Submit comprehensive material list, shop drawings and complete technical data for the following equipment and materials:
1. General Requirements:
    - a. Main service and distribution switchboards.
    - b. Panelboards.
    - c. Conduits
    - d. Conductors, include all selected insulation types.
    - e. Fuses
    - f. Disconnect switches and Starters.
    - g. Pullboxes, manholes and handholes.
    - h. Standard lighting fixtures, specially fabricated fixtures, ballasts and lamps, with samples and sample of standard finish available (where requested).
    - i. Control devices, standard and special receptacles, switches, outlets and finish device plates.
    - j. Cabinets for signal and telephone system, special terminals and cabinets. Include all cabinet dimensions.
    - k. Fire alarm system.
    - l. Transformers
- J. Utility Service:
1. Contractor shall verify the locations shown on the drawings and shall include extensions of lines to building service from locations which are acceptable to the Owner.
  2. Verify electrical, civil, architectural and structural, dimensional and other requirements with the Owner.
  3. Should any major modifications to the work indicated be necessary to comply with the Owner requirements, notify the Architect.
  4. Contractor shall contact the utility company representatives to establish pre-construction coordination, obtain all necessary meters and/or approvals, and schedule utility work to coordinate with the construction schedule.
  5. All utility services shall be installed per the utility company requirements. Verify final construction requirements with utility company service planners prior to construction.
- K. Record Drawings: Refer to Division 01, Contract Closeout.

L. Work Responsibilities:

1. The drawings indicate diagrammatically the desired locations or arrangement of conduit runs, outlets, junction boxes and equipment and are to be followed. Execute the work so as to secure the best possible installation in the available space and to overcome local difficulties due to space limitations. The Contractor is responsible for the correct placing of his work. Where conflicts occur in plans and/or specifications, the most stringent application shall apply and shall be part of the base bid.
2. Locations shown on architectural plan or on wall elevations shall take precedence over electrical plan locations, but where a major conflict is evident, notify the Architect.
3. In the event minor changes in the indicated locations or arrangement are necessary due to developed conditions in the building construction or rearrangement of furnishings or equipment or due to interference with other trades, such changes shall be made without extra cost.
4. Verify dimensions and the correct location of Owner-Furnished equipment before proceeding with the roughing-in of connections.
5. All scaled and figured dimensions are approximate of typical equipment of the class indicated. Before proceeding with work carefully check and verify dimensions and sizes with the drawings to see that the furnished equipment will fit into the spaces provided without violation of applicable Codes.
6. Should any changes to the work indicated on the drawings or described in the specifications be necessary in order to comply with the above requirements, notify the Architect.
7. Contractor shall be responsible for coordination of coordinated drawings when required by the Architect.
8. Replace or repair, without additional compensation any work which does not comply with or which is installed in violation of any of these requirements.

M. Installation General: For special requirements, refer to specific equipment under these requirements.

1. Unless otherwise specified elsewhere in the specifications, do all excavating necessary for the proper installation of the electrical work.
2. Locations of Openings: Locate chases, shafts and openings required for the installation of the electrical work during framing of the structure. Do any additional cutting and patching required. Cutting or drilling in any structural member is prohibited without approval of the Architect. Furnish all access panels to make all boxes, connections and devices accessible as required by CEC.
3. Location of Sleeves: Where conduits pass through concrete walls, suspended slabs or metal deck floors, install sleeves of adequate size to permit installation of conduit. Sleeves shall be installed prior to pouring of concrete and shall have ends flush with the wall or extend 2 inches above floor surfaces. Verify locations.
4. Wherever conduit extends through roof, install flashings in accordance with drawings and details.
5. Contractor shall be responsible for cutting and patching which may be required for the proper installation of the electrical work.
6. Protect work, materials and equipment and provide adequate and proper storage facilities during the progress of the work. Storage outdoors shall be weather protected and shall include space heaters to prevent condensation. Provide for the safety and good condition of all work until final acceptance of the work. Replace all damaged or defective work, materials and equipment before requesting final acceptance.
7. Conduit and Equipment to be Installed: Clean thoroughly to remove plaster, spattered paint, cement and dirt on both exterior and interior. All underground conduits shall be mandrelled prior to pulling wire.
8. Conduit and Equipment to be Painted: Clean conduit exposed to view in completed structure by removing plaster and dirt. Remove grease, oil and similar material from conduit and equipment by wiping with clean rags and suitable solvents in preparation for paint.



9. Items with Factory Finish: Remove cement, plaster, grease and oil, and leave surfaces, including cracks and corners, clean and polished. Touch up scratched or bare spots to match finish.
  10. Site Cleaning: Remove from site all packing cartons, scrap materials and other rubbish on a weekly basis. Vacuum out all cabinets, switchgear and panels and junction boxes prior to pulling any conductors.
  11. Electrical equipment and materials exposed to public and in finished areas shall be finish-painted after installation in accordance with the Painting Section. All exposed screw-type fasteners, exterior, or interior in restrooms, shall be vandal-resistant spanner type; include tool.
- N. Excavation, Cutting and Patching:
1. Excavating, trenching and backfilling required for the work of this Division in accordance with the applicable requirements of Division 2. Excavating and backfilling connected with electrical work, repaving cuts and providing and maintaining protective measures for the electrical work excavation required by the governing authorities having jurisdiction shall be performed as a part of the work of this Division.
  2. Verify openings indicated on the drawings. Provide all cutting, patching and reinforcement of the construction of the building as required to install electrical work.
- O. Tests
1. Equipment and systems for which the National Electrical Testing Association (NETA) has an approved or recommended procedure, shall be tested in accordance with that procedure. Test values shall equal values recommended by NETA. Copies of test reports shall be submitted as required under shop drawing submittals.
  2. Resistance to ground tests shall be accomplished by a qualified independent testing firm to measure resistance to ground at grounding electrodes. Make tests before slabs or affected areas are poured in order that corrective measures, if required, may be taken. Submit a report showing the results of these measurements. If the resistances exceed values specified elsewhere or NETA test procedure recommendations, perform corrective measures required to reduce resistance to acceptable values.
  3. Prior to energizing any motor, measure the service voltage for phase balance and report if unbalance exceeds 1% from mean.
  4. Measure the three-phase voltage at no load and at maximum load conditions and submit to the engineer a report showing the results of these measurements.
  5. Upon completion of the work and adjustment of all equipment, conduct an operating test. Conduct the test in the presence of an authorized representative of the Owner's Representative. Demonstrate system and equipment to operate in accordance with requirements of the Contract Documents and to be free from electrical and mechanical defects. Provide systems free from short circuits and grounds and show an insulation resistance between phase conductors and ground not less than the requirements of the governing electric code. Test circuits for proper neutral connection.
  6. Complete tests prior to final inspection of project, including corrective work based on the results of the tests.
  7. Perform special tests on systems and equipment as specified herein using personnel qualified to perform such tests.
- P. Protection: Protect finish parts of the materials and equipment against damage during the progress of the work and until final completion and acceptance. Cover materials and equipment in storage and during construction in such a manner that no finished surfaces will be damaged or marred. Keep moving parts clean, dry and lubricated.
- Q. Cleaning Up:
1. Upon completion of the work and at various time during the progress of the work, remove from the building all surplus materials, rubbish and debris resulting from the work of this Division.
  2. Thoroughly clean switchgear including busses, apparatus, exposed conduit, metal work including the exterior and interior, and accessories for the work of this Division, of cement,

- plaster and other deleterious materials; remove grease and oil spots with cleaning solvent; carefully wipe surfaces and scrape cracks and corners clean.
3. Thoroughly polish chromium or plated work. Remove dirt and stains from lighting fixtures.
  4. Leave the entire installation in a clean condition.
- R. Completion:
1. The work will not be reviewed for final acceptance until operating and maintenance data, manufacturer's literature, panel directories and nameplates specified herein have been approved and properly posted or installed and final cleaning of equipment and premises has been completed.
  2. When the installation is complete and adjustments have been made, operate the system for a period of one week, during which time demonstrate that systems are completed and operating in conformance with the specifications.
- S. Operating and Maintenance Data: Submit complete and at one time, prior to acceptance of the installation, 4 copies of manufacturer's instructions for operation and maintenance of electrical equipment, including replacement parts lists. As specified in Division 01
- T. Inspection and Acceptance Procedures: The Architect will submit observation reports periodically during the construction phase detailing Contract deficiencies. The Contractor is responsible for making corrections immediately. Notice of Completion of the project will not be made until all items have been corrected.
- U. Final Completion of Electrical Systems:
1. Prior to Final Completion of operating electrical systems, the Contractor shall:
    - a. Provide materials of the type and quality specified and as necessary for proper operation, tested and ready for use.
    - b. Furnish the required Operating and Maintenance Data/Manuals.
    - c. Clean up of the project pertaining to this Division of the work.
    - d. After installation has been completed and adjustments made, operate the system for a period of one week, during which time, demonstrate to the Architect that systems are complete and operating in conformance with Contract Documents.
    - e. Conduct tests required and as specified in this Division and submit test reports and corrective actions taken.
    - f. Submission of warranties and guarantees.
  2. Final Completion of Work Shall be Contingent On:
    - a. Contractor replacing defective materials and workmanship.
    - b. Upon completion of work and adjustments made, Contractor shall conduct an operating test for each system for approval at such time as Architect directs. Conduct test in presence of authorized representative of Architect and demonstrate that systems and equipment do operate in accordance with requirements of the Contract Documents and are free from electrical and mechanical defects.
    - c. Contractor shall provide the necessary training programs and instructions to the Owner's representative. Number of hours shall be a minimum of four (4) hours for each system or days as required under separate Sections of these Specifications. Complete operation and maintenance manuals shall be provided at least two (2) weeks prior to training.
    - d. Submit copies of manufacturer's instructions and maintenance of electrical equipment including replacement parts lists. Each set shall include one set of shop drawings of equipment installed.
- V. Submittals for Change Orders: When changes are made during the construction phase, deletions and additions shall be presented in a manner that will indicate the cost of each item of material and corresponding labor. Markup shall be then added in accordance with the requirements of the General Conditions as modified by the Supplementary Conditions.
- W. The Contractor at a time convenient to the Owner shall provide instruction to the Owner's operating personnel in the proper operation and maintenance of all equipment and systems.

The instructors shall have received factory training and shall be thoroughly familiar with the equipment installed. The operating personnel shall receive the number of days instruction as indicated in other sections.

### 1.03 PROJECT RECORD DOCUMENTS

- A. Record Set During the Work: At site, maintain at least one set of Drawings as a Field Record Set. Also maintain at least one copy of all Addenda, Modifications, approved submittals, correspondence, and transmittals at site. Keep Drawings and data in good order and readily available to Architect and Owner.
- B. Changes: Clearly and correctly mark Record Drawings to show changes made during the construction process at the time the changed work is installed. No such changes shall be made in the work unless authorized by the Architect.
- C. Final Record Drawings: Conform to Division 01 requirements.
- D. Preparation of Final Record Drawings: Contractor shall transfer recorded changes in the work indicated on the Field Record Set to the record set. Changes shall be neatly and clearly drawn and noted by skilled draftsmen, and shown technically correct.
- E. Approval: Prior to Architect's inspection for Substantial Completion, submit the Final Record Drawings to the Architect for review, and make such revisions as may be necessary for Final Record Drawings to be a true, complete, and accurate record of the work.
- F. Manuals: Obtain data from the various manufacturers and submit instruction, operation, and maintenance manuals as required and to the extent required under other Sections.
- G. At all times when the work is in progress, maintain at the workplace, fabrication shop or Project Site as applies, a complete separate, clean, undamaged set of the latest stamped, actioned submittals. As work progresses, maintain records of "as installed" conditions on this set in suitable ink or chemical fluid. Update the set daily. After successful completion of Project Site testing specified herein, and after completion of Punch List corrections, copy all records of "as installed" conditions on to originals.
- H. Quantity:
  - 1. Review sets: As for Shop and Field Drawings.
  - 2. Record set: Refer to Division 01.
- I. Format: Record Drawings:
  - 1. Pencil, permanent ink or permanent photographic process.
    - a. Front face only of Mylar at least 3.0 mils thick.
    - b. Appliqué film or lettering prohibited.
    - c. Suitable for microfilming. Lettering 1/8" (.8 mm) high minimum.
- J. Content: All drawings required under "Field and Shop Drawings". Show "as installed" condition. Where room designations according to Project permanent signage differ from construction designations in the Contract Documents, show both designations.
- K. Warranty Certificates: Comply with Division 01.

## PART 2 - PRODUCT

### 2.01 Not Used

## PART 3 - INSTALLATION

### 3.01 Not Used

END OF SECTION

## SECTION 16060

### GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Grounding and bonding components.
- E. Provide all components necessary to complete the grounding system(s) consisting of:
  - 1. Metal underground water pipe.
  - 2. Metal frame of the building.

##### 1.02 REFERENCE STANDARDS

- A. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association; 2007.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 99 - Standard for Health Care Facilities; National Fire Protection Association; 2005.
- D. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

##### 1.03 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 25 ohms.

##### 1.04 SUBMITTALS

- A. Product Data: Provide for grounding electrodes and connections.
- B. Test Reports: Indicate overall resistance to ground.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Project Record Documents: Record actual locations of components and grounding electrodes.

##### 1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

#### PART 2 PRODUCTS

##### 2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

##### 2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
  - 1. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
  - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in addition to requirements of Section 16123:
  - 1. Use insulated copper conductors unless otherwise indicated.
    - a. Exceptions:
      - 1) Use bare copper conductors where installed underground in direct contact with earth.
      - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
  - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  - 2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
  - 3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

### **2.03 CONDUCTORS**

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B 3.
  - 2. Stranded Conductors: ASTM B 8.
  - 3. Tinned Conductors: ASTM B 33.
  - 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
  - 5. Bonding Conductor: No. 4 AWG, stranded conductor.
  - 6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
  - 7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

### **2.04 CONNECTORS AND ACCESSORIES**

- A. Mechanical Connectors: Bronze.
- B. Exothermic Connections:
  - 1. Cadweld or approved equal.
- C. Wire: Stranded copper.
- D. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

**END OF SECTION**

## SECTION 16070

### HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Hangers and supports for electrical equipment and systems.
- B. Construction requirements for concrete bases.

##### 1.02 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

##### 1.03 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

#### PART 2 PRODUCTS

##### 2.01 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit.
    - b. Cooper B-Line, Inc.; a division of Cooper Industries.
    - c. ERICO International Corporation.
    - d. GS Metals Corp.
    - e. Thomas & Betts Corporation.
    - f. Unistrut; Tyco International, Ltd.
    - g. Wesanco, Inc.
  - 3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
  - 4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
  - 5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
  - 6. Channel Dimensions: Selected for applicable load criteria.
- B. Nonmetallic Slotted Support Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16-inch- (14-mm-) diameter holes at a maximum of 8 inches (200 mm) o.c., in at least 1 surface.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit.
    - b. Cooper B-Line, Inc.; a division of Cooper Industries.

- c. Fabco Plastics Wholesale Limited.
  - d. Seasafe, Inc.
  - 3. Fittings and Accessories: Products of channel and angle manufacturer and designed for use with those items.
  - 4. Fitting and Accessory Materials: Same as channels and angles, except metal items may be stainless steel.
  - 5. Rated Strength: Selected to suit applicable load criteria.
- C. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- D. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- E. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- F. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- G. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
- 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Hilti Inc.
      - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 3) MKT Fastening, LLC.
      - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated or stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
    - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
      - 2) Empire Tool and Manufacturing Co., Inc.
      - 3) Hilti Inc.
      - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 5) MKT Fastening, LLC.
  - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
  - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  - 6. Toggle Bolts: All-steel springhead type.
  - 7. Hanger Rods: Threaded steel.

## **PART 3 EXECUTION**

### **3.01 APPLICATION**

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by CEC. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.

### 3.02 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in CEC.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
  - 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts or Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
  - 7. To Light Steel: Sheet metal screws.
  - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

### 3.03 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

### 3.04 INSTALLATION

- A. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
  - 1. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
- B. Rigidly weld support members or use hexagon-head bolts to present neat appearance with



adequate strength and rigidity. Use spring lock washers under all nuts.

- C. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- D. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1 inch off wall.
- E. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

**END OF SECTION**

## SECTION 16075

### IDENTIFICATION FOR ELECTRICAL SYSTEMS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Warning signs and labels.

##### 1.02 REFERENCE STANDARDS

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs; 2007.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels; 2007.
- C. ASTM D 709 - Standard Specification for Laminated Thermosetting Materials; 2001 (Reapproved 2007).
- D. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

#### PART 2 PRODUCTS

##### 2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
- B. Identification for Conductors and Cables:
  - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 16123.
  - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- C. Buried Electrical Lines: Underground warning tapes.
- D. Communication Cabinets: Nameplates.
- E. Electrical Distribution and Control Equipment Enclosures: Nameplates.
- F. Junction Box Load Connections: Wire markers.
- G. Outlet Box Load Connections: Wire markers.
- H. Panel Gutter Load Connections: Wire markers.
- I. Pull Box Load Connections: Wire markers.

##### 2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
  - 1. Materials:
    - a. Indoor Clean, Dry Locations: Use plastic nameplates.
  - 2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically

non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.

3. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.

**B. Identification Labels:**

1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

**C. Nameplates:** Engraved three-layer laminated plastic, black letters on white background.

**D. Plastic:** Conform to ASTM D 709.

**E. Letter Size:**

1. Use 1/8 inch letters for identifying individual equipment and loads.
2. Use 1/4 inch letters for identifying grouped equipment and loads.

### **2.03 WIRE AND CABLE MARKERS**

**A. Markers for Conductors and Cables:** Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.

**B. Markers for Conductor and Cable Bundles:** Use plastic marker tags secured by nylon cable ties.

**C. Legend:** Power source and circuit number or other designation indicated.

**D. Text:** Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.

**E. Minimum Text Height:** 1/8 inch.

**F. Color:** Black text on white background unless otherwise indicated.

**G. Description:** Vinyl cloth type self-adhesive wire markers.

### **2.04 WARNING SIGNS AND LABELS**

**A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.**

**B. Warning Signs:**

1. Materials:
2. Minimum Size: 7 by 10 inches unless otherwise indicated.

**C. Warning Labels:**

1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester, or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
3. Minimum Size: 2 by 4 inches unless otherwise indicated.

**D. Description:** 3 inch wide polyethylene tape, detectable type colored red with suitable warning legend describing buried electrical lines.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

**A. Clean surfaces to receive adhesive products according to manufacturer's instructions.**

**B. Degrease and clean surfaces to receive nameplates and labels.**

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Inside of equipment door.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Interior Components: Legible from the point of access.
  - 6. Conductors and Cables: Legible from the point of access.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing, or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.

### **3.03 WIRE IDENTIFICATION**

- A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with panel and branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams equipment manufacturer's shop drawings for control wiring.

### **3.04 NAMEPLATE ENGRAVING**

- A. Provide nameplates to identify all circuits in the service distribution and power distribution panelboards; branch circuit panelboards; separately mounted starting switches; disconnecting switches; motor control push-button stations; selector switches; terminal cabinets; telephone cabinets, etc. Clearly identify on the nameplate the equipment such as "Air Handling Unit AH-1" and "Hot Water Cir. Pump P-1" in lieu of abbreviated plan references such as "AH-1" or "P-1".
  - 1. Provide nameplates of minimum letter height as scheduled below.
    - a. Panelboards and Switchboards: 1/4 inch; identify equipment designation, voltage rating, and source.
- B. Individual Circuit Breakers In Switchboards: 1/8 inch; identify circuit and load served, including location.
- C. Individual Circuit Breakers, Enclosed Switches and Motor Starters: 1/8 inch; identify voltage rating, ampere rating and load served including location.
- D. HVAC and Plumbing Control Equipment: 1/8 inch; identify equipment designation and equipment served including location.
- E. Communication Terminal Cabinets: 1/4 inch; identify cabinet designation and type of system.
- F. Transformers: 1/4" inch; Identify equipment designation.

**END OF SECTION**

## SECTION 16123

### LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Wire and cable for 600 volts and less.
- C. Wiring connectors.

##### 1.02 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2001 (Reapproved 2007).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011.
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010.
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2009).
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- F. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; National Electrical Manufacturers Association; 2009 (ANSI/NEMA WC 70/ICEA S-95-658).
- G. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association; 2009.
- H. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- J. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- K. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- L. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.

##### 1.03 SUBMITTALS

- A. Product Data: Provide for each cable assembly type.

##### 1.04 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

#### PART 2 PRODUCTS

##### 2.01 CONDUCTOR AND CABLE MANUFACTURERS

- A. Anaconda Power Cables.
- B. Carol Cable
- C. Rome Wire and Cable
- D. Pirelli Wire and Cable

- E. Okonite Wire
- F. Canada Wire

## **2.02 ALL CONDUCTORS AND CABLES**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose indicated.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
  - 1. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
  - 2. Tinned Copper Conductors: Comply with ASTM B33.
- H. Conductor Color Coding:
  - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
  - 2. Color Coding Method: Integrally colored insulation.

## **2.03 SINGLE CONDUCTOR BUILDING WIRE**

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
  - 1. Feeders and Branch Circuits:
    - a. Size 10 AWG and Smaller: Solid.
    - b. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
  - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
- E. Conductor: Copper.
- F. Insulation Voltage Rating: 600 volts.
- G. Type THHN/THWN insulation for dry interior locations, in raceway.
- H. Type THWN for exterior or wet locations, in raceway.

## **2.04 WIRING CONNECTORS**

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.

- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that raceway installation is complete and supported.
- E. Verify that field measurements are as shown on the drawings.
- F. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

### 3.03 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conductors and cable in a neat and workmanlike manner in accordance with NECA 1.
- C. Installation in Raceway:
  1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
  2. Pull all conductors and cables together into raceway at same time.
  3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
  4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- D. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- E. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- F. Install conductors with a minimum of 12 inches of slack at each outlet.
- G. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- H. Make wiring connections using specified wiring connectors.
  1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
  2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
  3. Do not remove conductor strands to facilitate insertion into connector.
  4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
- I. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
- J. Insulate ends of spare conductors using vinyl insulating electrical tape.
- K. Color Code Legend: Provide identification label identifying color code for ungrounded conductors at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- L. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.
- M. Provide conductors continuous from outlet to outlet and splice only at outlet or junction boxes.

## SECTION 16131

### CONDUIT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Conduit fittings.
- B. Conduit, fittings and conduit bodies.

##### 1.02 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2005.
- B. ANSI C80.3 - American National Standard for Steel Electrical Metallic Tubing (EMT); 2005.
- C. ANSI C80.5 - American National Standard for Electrical Rigid Aluminum Conduit (ERAC); 2005.
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- E. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); National Electrical Contractors Association; 2006.
- F. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association; 2007.
- G. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit; National Electrical Manufacturers Association; 2005.
- H. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; National Electrical Manufacturers Association; 2003.
- I. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; National Electrical Manufacturers Association; 2004.
- J. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

##### 1.03 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. ENT: Electrical nonmetallic tubing.
- C. EPDM: Ethylene-propylene-diene terpolymer rubber.
- D. FMC: Flexible metal conduit.
- E. IMC: Intermediate metal conduit.
- F. LFMC: Liquidtight flexible metal conduit.
- G. LFNC: Liquidtight flexible nonmetallic conduit.
- H. NBR: Acrylonitrile-butadiene rubber.
- I. RNC: Rigid nonmetallic conduit.

##### 1.04 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

#### PART 2 PRODUCTS



## 2.01 CONDUIT REQUIREMENTS

- A. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
- C. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

## 2.02 METAL CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Alfex Inc.
  - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
  - 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 5. Electri-Flex Co.
  - 6. Manhattan/CDT/Cole-Flex.
  - 7. Maverick Tube Corporation.
  - 8. O-Z Gedney; a unit of General Signal.
  - 9. Wheatland Tube Company.
- C. Rigid Steel Conduit: ANSI C80.1.
- D. Aluminum Rigid Conduit: ANSI C80.5.
- E. IMC: ANSI C80.6.
- F. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
  - 1. Comply with NEMA RN 1.
  - 2. Coating Thickness: 0.040 inch (1 mm), minimum.
- G. EMT: ANSI C80.3.
- H. FMC: Zinc-coated steel.
- I. LFMC: Flexible steel conduit with PVC jacket.
- J. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
  - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
  - 2. Fittings for EMT: Steel, raintight compression with integral insulated throat.
  - 3. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.
- K. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

- D. Verify routing and termination locations of conduit prior to rough-in.
- E. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in a neat and workmanlike manner in accordance with NECA 1.
- C. Conduit Support:
  - 1. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Connections and Terminations:
  - 1. Use suitable adapters where required to transition from one type of conduit to another.
  - 2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
  - 3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- E. Penetrations:
  - 1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  - 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  - 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  - 4. Conceal bends for conduit risers emerging above ground.
  - 5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
  - 6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
  - 7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
- F. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
  - 1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
  - 2. Where conduits are subject to earth movement by settlement or frost.
- G. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
  - 1. Where conduits pass from outdoors into conditioned interior spaces.
  - 2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.

### **3.03 FIELD QUALITY CONTROL**

- A. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- B. Correct deficiencies and replace damaged or defective conduits.

### **3.04 CLEANING**

- A. Clean interior of conduits to remove moisture and foreign matter.

### **3.05 PROTECTION**

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.
- B. Only where approved, route exposed conduit parallel and perpendicular to walls.
- C. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic and expansion joints and between building and walkway covers.
- D. Where conduit penetrates fire-rated walls and floors, provide mechanical firestop fittings with UL listed fire rating equal to wall or floor rating.
- E. Do not install conduit in slabs above grade.
- F. PVC conduit shall not be used in any locations above grade.
- G. Seal conduit from exterior outlets at first interior junction to prevent moisture from entering the building through the conduit.
- H. Use insulating fittings on conduits where entering pullboxes, junction boxes, outlet boxes, cabinets and similar enclosures, and for signal and telephone conduits terminated in cabinets or backboards.
- I. Conduit risers and ell's through concrete shall be PVC Schedule 80.
- J. All conduit shall be concealed unless specifically noted otherwise.

### **3.06 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS**

- A. Coordinate sleeve selection and application with selection and application of firestopping.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Rectangular Sleeve Minimum Metal Thickness:
  - 1. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side greater than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
  - 2. For sleeve cross-section rectangle perimeter equal to, or greater than, 50 inches (1270 mm) and 1 or more sides equal to, or greater than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).
- E. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- F. Cut sleeves to length for mounting flush with both surfaces of walls.
- G. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.

- H. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway unless sleeve seal is to be installed or unless seismic criteria require different clearance.
- I. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.
- J. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway, using joint sealant appropriate for size, depth, and location of joint.
- K. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway penetrations. Install sleeves and seal with firestop materials.
- L. Roof-Penetration Sleeves: Seal penetration of individual raceways with flexible, boot-type flashing units applied in coordination with roofing work.
- M. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- N. Underground, Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway and sleeve for installing mechanical sleeve seals.

### **3.07 SLEEVE-SEAL INSTALLATION**

- A. Install to seal underground, exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway material and size. Position raceway in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### **3.08 FIRESTOPPING**

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.

### **3.09 INTERFACE WITH OTHER PRODUCTS**

- A. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified in plans and specifications.
- B. Route conduit through roof openings for piping and ductwork wherever possible; otherwise, route through roof jack with pitch pocket. Where separate roofing penetration is required, coordinate location and installation method with roofing installation.

**END OF SECTION**

## SECTION 16138

### BOXES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Wall and ceiling outlet boxes.
- B. Pull and junction boxes.

##### 1.02 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association; 2007.
- C. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; National Electrical Manufacturers Association; 2008.
- D. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports; National Electrical Manufacturers Association; 2008.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.
- F. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

##### 1.03 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Provide products listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
  - 2. EGS/Appleton Electric.
  - 3. Erickson Electrical Equipment Company.
  - 4. Hoffman.
  - 5. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
  - 6. O-Z/Gedney; a unit of General Signal.
  - 7. RACO; a Hubbell Company.
  - 8. Robroy Industries, Inc.; Enclosure Division.
  - 9. Scott Fetzer Co.; Adalet Division.
  - 10. Spring City Electrical Manufacturing Company.
  - 11. Thomas & Betts Corporation.
  - 12. Walker Systems, Inc.; Wiremold Company (The).
  - 13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary.

##### 2.02 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
- B. Nonmetallic Outlet Boxes: NEMA OS 2.
- C. Cast Boxes: NEMA FB 1, Type FD, aluminum. Provide gasketed cover by box manufacturer. Provide threaded hubs.

### **2.03 PULL AND JUNCTION BOXES**

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install boxes securely, in a neat and workmanlike manner, as specified in NECA 1.
- B. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.
- C. Electrical boxes are shown on Drawings in approximate locations unless dimensioned.
  - 1. Adjust box locations up to 10 feet if required to accommodate intended purpose.
- D. Maintain headroom and present neat mechanical appearance.
- E. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- F. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- H. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan.
- I. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.
- J. Use flush mounting outlet box in finished areas.
- K. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- L. Do not install flush mounting box back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separation in acoustic rated walls.
- M. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- N. Use stamped steel bridges to fasten flush mounting outlet box between studs.
- O. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- P. Use adjustable steel channel fasteners for hung ceiling outlet box.
- Q. Do not fasten boxes to ceiling support wires.
- R. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12 inches of box.
- S. Use gang box where more than one device is mounted together. Do not use sectional box.
- T. Use gang box with plaster ring for single device outlets.
- U. Use cast outlet box in exterior locations exposed to the weather and wet locations.
- V. Use cast floor boxes for installations in slab on grade; formed steel boxes are acceptable for other installations.

W. Set floor boxes level.

**3.02 ADJUSTING**

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused box openings.

**3.03 CLEANING**

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

**END OF SECTION**

## SECTION 16140

### WIRING DEVICES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Wall switches.
- B. Wall dimmers.
- C. Receptacles.
- D. Wall plates.

##### 1.02 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for; Federal Specification; Revision G, 2001.
- B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification); Federal Specification; Revision F, 1999.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- D. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2005).
- E. NEMA WD 6 - Wiring Device -- Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- F. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 20 - General-Use Snap Switches; Current Edition, Including All Revisions.
- H. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- I. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- J. UL 943 - Ground-Fault Circuit-Interruption; Current Edition, Including All Revisions.
- K. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

##### 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
  - 3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
  - 4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
  - 5. Coordinate the core drilling of holes for poke-through assemblies with the work covered under other sections.
  - 6. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.



- B. Sequencing:
  - 1. Do not install wiring devices until final surface finishes and painting are complete.

#### **1.04 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

#### **1.05 DELIVERY, STORAGE, AND PROTECTION**

- A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Hubbell Incorporated; : [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
- B. Leviton Manufacturing Company, Inc; : [www.leviton.com](http://www.leviton.com).
- C. Pass & Seymour, a brand of Legrand North America, Inc; : [www.legrand.us](http://www.legrand.us)
- D. Arrow
- E. Source Limitations: Where possible, for each type of wiring device furnish products produced by a single manufacturer and obtained from a single supplier.

#### **2.02 APPLICATIONS**

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
- C. Provide weather resistant GFI receptacles with specified weatherproof covers for all receptacles installed outdoors or in damp or wet locations.
- D. Provide GFI protection for all receptacles installed within 6 feet of sinks.
- E. Provide GFI protection for all receptacles installed in kitchens.
- F. Provide GFI protection for all receptacles serving electric drinking fountains.
- G. Provide isolated ground receptacles for all receptacles serving computers.
- H. Unless noted otherwise, do not use combination switch/receptacle devices.
- I. For flush floor service fittings, use tile rings for installations in tile floors.
- J. For flush floor service fittings, use carpet flanges for installations in carpeted floors.

#### **2.03 ALL WIRING DEVICES**

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- B. Coordinate color of finish, style and device face plate color with Architect prior to ordering devices.

#### **2.04 WALL SWITCHES**

- A. Manufacturers:
  - 1. Hubbell Incorporated: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
  - 2. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).
  - 3. Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us)
- B. All Wall Switches: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20

and where applicable, FS W-S-896; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- C. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with decorator style rocker type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

## 2.05 WALL DIMMERS

- A. Manufacturers:
1. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).
  2. Lutron Electronics Company, Inc: [www.lutron.com](http://www.lutron.com).
  3. Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us)
- B. All Wall Dimmers: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.
- C. Fluorescent Wall Dimmers: 120 V AC, slide control type with separate on/off switch, compatible with dimming ballast controlled; single pole or three way as indicated on the drawings.
1. Power Rating: 1000 VA unless otherwise indicated or required to control the load indicated on the drawings.

## 2.06 RECEPTACLES

- A. Manufacturers:
1. Hubbell Incorporated: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
  2. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).
  3. Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us)
- B. All Receptacles: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
  2. NEMA configurations specified are according to NEMA WD 6.
- C. Convenience Receptacles:
1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
  2. Isolated Ground Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, with ground contacts isolated from mounting strap; single or duplex as indicated on the drawings.
  3. Weather Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.
- D. GFI Receptacles:
1. All GFI Receptacles: Provide with feed-through protection, light to indicate ground fault tripped condition and loss of protection, and list as complying with UL 943, class A.
    - a. Provide test and reset buttons of same color as device.
  2. Standard GFI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
  3. Weather Resistant GFI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

## 2.07 WALL PLATES

- A. All Wall Plates: Comply with UL 514D.
  - 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
  - 2. Size: Standard.
  - 3. Screws: Metal with slotted heads finished to match wall plate finish.
- B. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.
- C. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- D. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that floor boxes are adjusted properly.
- F. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- G. Verify that core drilled holes for poke-through assemblies are in proper locations.
- H. Verify that openings in access floor are in proper locations.
- I. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### 3.03 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Perform work in a neat and workmanlike manner in accordance with NECA 1, including mounting heights specified in that standard unless otherwise indicated.
- C. Coordinate locations of outlet boxes provided under Section 16138 as required for installation of wiring devices provided under this section.
  - 1. Mounting Heights: Unless otherwise indicated, as follows:
    - a. Wall Switches: 48 inches above finished floor.
    - b. Wall Dimmers: 48 inches above finished floor.
    - c. Receptacles: 15 inches above finished floor or 6 inches above counter.
  - 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
  - 3. Provide minimum of 24 inches horizontal separation between flush mounted outlet boxes installed on opposite sides of fire rated walls.
  - 4. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.

5. Provide separate outlet boxes for wiring devices connected to emergency power and normal power systems.
  6. Unless otherwise indicated, provide separate outlet boxes for line voltage and low voltage devices.
  7. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
  8. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.
  9. Locate outlet boxes so that wall plate does not span different building finishes.
  10. Locate outlet boxes so that wall plate does not cross masonry joints.
- D. Install wiring devices in accordance with manufacturer's instructions.
  - E. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
  - F. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
  - G. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
  - H. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
  - I. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.
  - J. Provide GFI receptacles with integral GFI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.
  - K. Install wiring devices plumb and level with mounting yoke held rigidly in place.
  - L. Install wall switches with OFF position down.
  - M. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
  - N. Do not share neutral conductor on branch circuits utilizing wall dimmers.
  - O. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
  - P. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
  - Q. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

### **3.04 FIELD QUALITY CONTROL**

- A. Inspect each wiring device for damage and defects.
- B. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.
- C. Test each receptacle to verify operation and proper polarity.
- D. Test each GFCI receptacle for proper tripping operation according to manufacturer's

instructions.

- E. Correct wiring deficiencies and replace damaged or defective wiring devices.

### **3.05 ADJUSTING**

- A. Adjust devices and wall plates to be flush and level.

### **3.06 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

**END OF SECTION**

## SECTION 16145

### LIGHTING CONTROL DEVICES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Occupancy sensors.

##### 1.02 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.
- C. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Fluorescent Ballasts; National Electrical Manufacturers Association; 2004.
- D. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

##### 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
  - 3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
  - 4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

##### 1.04 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

##### 1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

##### 1.06 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

#### PART 2 PRODUCTS

##### 2.01 ALL LIGHTING CONTROL DEVICES

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.
- C. Products for Switching of Electronic Fluorescent Ballasts: Tested and rated to be suitable for peak inrush currents specified in NEMA 410.

##### 2.02 OCCUPANCY SENSORS

- A. All Occupancy Sensors:
  - 1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
  - 2. Sensor Technology:
    - a. Passive Infrared (PIR) Occupancy Sensors: Designed to detect occupancy by sensing movement of thermal energy between zones.
    - b. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
  - 3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
  - 4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
  - 5. Dual Technology Occupancy Sensors: Field configurable turn-on and hold-on activation with settings for activation by either or both sensing technologies.
  - 6. Passive Infrared Lens Field of View: Field customizable by addition of factory masking material, adjustment of integral blinders, or similar means to block motion detection in selected areas.
  - 7. Turn-Off Delay: Field adjustable, up to a maximum time delay setting of not less than 15 minutes and not more than 30 minutes.
  - 8. Compatibility: Suitable for controlling incandescent lighting, low-voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
- B. Wall Switch Occupancy Sensors:
  - 1. All Wall Switch Occupancy Sensors:
    - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
    - b. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
- C. Ceiling Mounted Occupancy Sensors:
  - 1. All Ceiling Mounted Occupancy Sensors:
    - a. Description: Low profile occupancy sensors designed for ceiling installation.
- D. Power Packs for Low Voltage Occupancy Sensors:
  - 1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
  - 2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on the drawings.
  - 3. Input Supply Voltage: Dual rated for 120/277 V ac.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.

- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### **3.03 INSTALLATION**

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 16138 as required for installation of lighting control devices provided under this section.
- C. Install lighting control devices in accordance with manufacturer's instructions.
- D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- E. Install lighting control devices plumb and level, and held securely in place.
- F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 16140.
- G. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01400 - Quality Requirements, for additional requirements.
- B. Inspect each lighting control device for damage and defects.
- C. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.
- D. Correct wiring deficiencies and replace damaged or defective lighting control devices.

### **3.05 ADJUSTING**

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.
- C. Where indicated or as directed by Architect, install factory masking material or adjust integral blinders on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.

### **3.06 CLEANING**



- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

**3.07 CLOSEOUT ACTIVITIES**

- A. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.

**END OF SECTION**

## SECTION 16155

### EQUIPMENT WIRING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Electrical connections to equipment.

##### 1.02 REFERENCE STANDARDS

- A. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2005).
- B. NEMA WD 6 - Wiring Devices - Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- C. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

##### 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
  - 2. Determine connection locations and requirements.
- B. Sequencing:
  - 1. Install rough-in of electrical connections before installation of equipment is required.
  - 2. Make electrical connections before required start-up of equipment.

##### 1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.

##### 1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
  - 1. Colors: Conform to NEMA WD 1.
  - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
  - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- B. Wiring Devices: As specified in Section 16140.
- C. Flexible Conduit: As specified in Section 16131.
- D. Wire and Cable: As specified in Section 16123.
- E. Boxes: As specified in Section 16138.

#### PART 3 EXECUTION

### **3.01 EXAMINATION**

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

### **3.02 ELECTRICAL CONNECTIONS**

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

**END OF SECTION**

**SECTION 16412**  
**ENCLOSED SWITCHES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Enclosed safety switches.

**1.02 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2008.
- C. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum); National Electrical Manufacturers Association; 2001 (R2006).
- D. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association; 2009.
- E. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 98 - Enclosed and Dead-Front Switches; Current Edition, Including All Revisions.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
  - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
  - 3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
  - 4. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed switch internal components, enclosure, and finish.

**PART 2 PRODUCTS**

**2.01 ENCLOSED SAFETY SWITCHES**

- A. Description: Quick-make, quick-break, enclosed safety switches complying with NEMA KS 1, type HD (heavy duty), and listed and labeled as complying with UL 98; ratings, configurations, and features as indicated on the drawings.

- B. Provide products listed and labeled by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- C. Horsepower Rating: Suitable for connected load.
- D. Voltage Rating: Suitable for circuit voltage.
- E. Short Circuit Current Rating:
  - 1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
- F. Provide with switch blade contact position that is visible when the cover is open.
- G. Conductor Terminations: Suitable for use with the conductors to be installed.
- H. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.
- I. Enclosures: Comply with NEMA KS 1 and NEMA 250, and list and label as complying with UL 50 and UL 50E.
  - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    - a. Indoor Clean, Dry Locations: Type 1.
    - b. Outdoor Locations: Type 3R.
- J. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.
- K. Heavy Duty Switches:
  - 1. Conductor Terminations:
    - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
  - 2. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that the ratings of the enclosed switches are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive enclosed safety switches.
- D. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 INSTALLATION**

- A. Install enclosed switches in accordance with manufacturer's instructions.
- B. Install enclosed switches securely, in a neat and workmanlike manner in accordance with NECA 1.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required supports in accordance with Section 16070.
- E. Install enclosed switches plumb.
- F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.

- G. Provide grounding and bonding in accordance with Section 16060.

### **3.03 FIELD QUALITY CONTROL**

- A. Inspect and test in accordance with NETA STD ATS, except Section 4.
- B. Perform inspections and tests listed in NETA STD ATS, Section 7.5.1.1.
- C. Correct deficiencies and replace damaged or defective enclosed safety switches or associated components.

### **3.04 ADJUSTING**

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

### **3.05 CLEANING**

- A. Clean dirt and debris from switch enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

**END OF SECTION**

## SECTION 16443

### PANELBOARDS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

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

##### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Distribution panelboards.
  - 2. Lighting and appliance branch-circuit panelboards.
  - 3. Transient voltage suppression panelboards.

##### 1.03 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GFCI: Ground-fault circuit interrupter.
- C. RFI: Radio-frequency interference.
- D. RMS: Root mean square.
- E. SPDT: Single pole, double throw.

##### 1.04 SUBMITTALS

- A. Product Data: For each type of panelboard, overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
  - 1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:
    - a. Enclosure types and details for types other than NEMA 250, Type 1.
    - b. Bus configuration, current, and voltage ratings.
    - c. Short-circuit current rating of panelboards and overcurrent protective devices.
    - d. UL listing for series rating of installed devices.
    - e. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
  - 2. Wiring Diagrams: Power, signal, and control wiring.
- C. Manufacturer Seismic Qualification Certification: Submit certification that panelboards, overcurrent protective devices, accessories, and components will withstand seismic forces. Include the following:
  - 1. Basis of Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
    - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
  - 2. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- D. Qualification Data: For testing agency.
- E. Field quality-control test reports including the following:
  - 1. Test procedures used.
  - 2. Test results that comply with requirements.

3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.
- F. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.
- G. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. Include the following:
  1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
  2. Time-current curves, including selectable ranges for each type of overcurrent protective device.

#### **1.05 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
  1. Testing Agency's Field Supervisor: Person currently certified by the International Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7.
- C. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories through one source from a single manufacturer.
- D. Product Options: Drawings indicate size, profiles, and dimensional requirements of panelboards and are based on the specific system indicated.
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in CEC, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- F. Comply with NEMA PB 1.
- G. Comply with CEC.

#### **1.06 PROJECT CONDITIONS**

- A. Environmental Limitations: Rate equipment for continuous operation under the following conditions, unless otherwise indicated:
  1. Ambient Temperature: Not exceeding 118 deg F
  2. Altitude: Not exceeding 6600 feet (2000 m).
- B. Service Conditions: NEMA PB 1, usual service conditions, as follows:
  1. Ambient temperatures within limits specified.
  2. Altitude not exceeding 6600 feet (2000 m).
- C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
  1. Notify Architect and Owner no fewer than 14 days in advance of proposed interruption of electrical service.
  2. Do not proceed with interruption of electrical service without Architects and Owners written permission.

#### **1.07 COORDINATION**

- A. Coordinate layout and installation of panelboards and components with other construction that



penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to workspace clearance requirements.

### 1.08 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Keys: Six spares for each type of panelboard cabinet lock.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Panelboards, Overcurrent Protective Devices, Controllers, Contactors, and Accessories:
    - a. Eaton Corporation; Cutler-Hammer Products.
    - b. General Electric Co.; Electrical Distribution & Protection Div.
    - c. Square D.
  - 2. Transient Voltage Suppression Panelboards:
    - a. Current Technology.
    - b. Liebert Corporation.

### 2.02 MANUFACTURED UNITS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces
- B. Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1.
  - 1. Rated for environmental conditions at installed location.
    - a. Outdoor Locations: NEMA 250, Type 3R unless noted otherwise.
    - b. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
    - c. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
    - d. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.
  - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
  - 3. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
  - 4. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
  - 5. Column-Type Panelboards: Narrow gutter extension, with cover, to overhead junction box equipped with ground and neutral terminal buses.
  - 6. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.
  - 7. Directory Card: With transparent protective cover, mounted in metal frame, inside panelboard door.
- C. Phase and Ground Buses:
  - 1. Material: Hard-drawn copper, 98 percent conductivity.
  - 2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.
  - 3. Isolated Equipment Ground Bus: Adequate for branch-circuit equipment ground conductors; insulated from box.
  - 4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.
  - 5. Split Bus: Vertical buses divided into individual vertical sections.
- D. Conductor Connectors: Suitable for use with conductor material.

1. Main and Neutral Lugs: Compression type.
  2. Ground Lugs and Bus Configured Terminators: Compression type.
  3. Feed-Through Lugs: Compression type suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
  4. Extra-Capacity Neutral Lugs: Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.
- E. Service Equipment Label: UL labeled for use as service equipment for panelboards with main service disconnect switches.
- F. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

### **2.03 PANELBOARD SHORT-CIRCUIT RATING**

- A. UL label indicating connected rating with integral or remote upstream overcurrent protective devices. Include size and type of upstream device allowable, branch devices allowable, and UL connected short-circuit rating.
- B. Fully rated to interrupt symmetrical short-circuit current available at terminals.

### **2.04 DISTRIBUTION PANELBOARDS**

- A. Doors: Secured with vault-type latch with tumbler lock; keyed alike. Omit for fused-switch panelboards.
- B. Main Overcurrent Protective Devices: Circuit Breaker.
- C. Branch Overcurrent Protective Devices:
  1. For Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on type circuit breakers.
  2. For Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers.

### **2.05 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS**

- A. Branch Overcurrent Protective Devices: Bolt-on type circuit breakers, replaceable without disturbing adjacent units.
- B. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

### **2.06 OVERCURRENT PROTECTIVE DEVICES**

- A. Molded-Case Circuit Breaker: UL 489, with interrupting capacity to meet available fault currents.
  1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
  2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
  3. Electronic trip-unit circuit breakers shall have RMS sensing; field-replaceable rating plug; and with the following field-adjustable settings:
    - a. Instantaneous trip.
    - b. Long- and short-time pickup levels.
    - c. Long- and short-time time adjustments.
    - d. Ground-fault pickup level, time delay, and I<sub>2t</sub> response.
  4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.
  5. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker; trip activation on fuse opening or on opening of fuse compartment door.
  6. GFCI Circuit Breakers: Single- and two-pole configurations with 5-mA trip sensitivity.
- B. Molded-Case Circuit-Breaker Features and Accessories: Standard frame sizes, trip ratings,

and number of poles.

1. Lugs: Compression style, suitable for number, size, trip ratings, and conductor materials.
2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
3. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
4. Communication Capability: Universal-mounted communication module with functions and features compatible with power monitoring and control system.
5. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 55 percent of rated voltage.
6. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage with field-adjustable 0.1- to 0.6-second time delay.
7. Auxiliary Contacts: Two SPDT switches with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.
8. Key Interlock Kit: Externally mounted to prohibit circuit-breaker operation; key shall be removable only when circuit breaker is in off position.
9. Zone-Selective Interlocking: Integral with electronic trip unit; for interlocking ground-fault protection function.
10. Multipole units enclosed in a single housing or factory-assembled to operate as a single unit.

C. Fused Switch: NEMA KS 1, Type HD; clips to accommodate specified fuses; lockable handle.

## **2.07 CONTROLLERS**

- A. Motor Controllers: NEMA ICS 2, Class A, combination controller equipped for panelboard mounting and including the following accessories:
1. Individual control-power transformers.
  2. Fuses for control-power transformers.
  3. Bimetallic-element overload relay.
  4. Indicating lights.
  5. Seal-in contact.
  6. 2 convertible auxiliary contacts.
  7. Push buttons.
  8. Selector switches.
- B. Contactors: NEMA ICS 2, Class A, combination controller equipped for panelboard mounting and including the following accessories:
1. Individual control-power transformers.
  2. Fuses for control-power transformers.
  3. Indicating lights.
  4. Seal-in contact.
  5. 2 convertible auxiliary contacts or as otherwise indicated on drawings.
  6. Push buttons.
  7. Selector switches.
- C. Controller Disconnect Switches: Adjustable instantaneous-trip circuit breaker integrally mounted and interlocked with controller.
1. Auxiliary Contacts: Integral with disconnect switches to de-energize external control-power source.
- D. Contactors in Main Bus: NEMA ICS 2, Class A, mechanically held general-purpose controller.
1. Control-Power Source: Control-power transformer, with fused primary and secondary terminals, connected to main bus ahead of contactor connection.
  2. Control-Power Source: 120-V branch circuit.

## **2.08 ACCESSORY COMPONENTS AND FEATURES**

- A. Furnish accessory set including tools and miscellaneous items required for overcurrent

protective device test, inspection, maintenance, and operation.

- B. Furnish portable test set to test functions of solid-state trip devices without removal from panelboard.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. Install panelboards and accessories according to NEMA PB 1.1.
- B. Mount top of trim 74 inches (1880 mm) above finished floor, unless otherwise indicated.
- C. Mount plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish. Where panelboards are recessed into fire rated walls, notify Architect immediately of condition and provide additional furring of wall (and related drywall) to bring panelboard front flush with finished surface.
- D. Install overcurrent protective devices and controllers.
  - 1. Set field-adjustable switches and circuit-breaker trip ranges.
- E. Install filler plates in unused spaces.
- F. Stub five 1-inch (27-GRC) empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch (27-GRC) empty conduits into raised floor space or below slab not on grade.
- G. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing in a neat and professional manor.

#### **3.02 IDENTIFICATION**

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
- B. Create a directory to indicate installed circuit loads (after balancing panelboard loads). The Contractor shall be responsible for updating directories to indicate actual area served which is not necessarily the description indicated on the bid documents. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws or rivets.

#### **3.03 CONNECTIONS**

- A. Ground equipment according to Section "Grounding and Bonding for Electrical Systems."
- B. Connect wiring according to Section "Low-Voltage Electrical Power Conductors and Cables."

#### **3.04 FIELD QUALITY CONTROL**

- A. Prepare for acceptance tests as follows:
  - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
  - 2. Test continuity of each circuit.

#### **3.05 CLEANING**

- A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris prior to pulling any conductors; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

**END OF SECTION**

## SECTION 16510

### INTERIOR LIGHTING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Interior luminaires.
- B. Emergency lighting units.
- C. Exit signs.
- D. Ballasts.
- E. Fluorescent dimming ballasts and controls.
- F. Fluorescent emergency power supply units.
- G. Lamps.
- H. Luminaire accessories.

##### 1.02 REFERENCE STANDARDS

- A. ANSI C78.379 - American National Standard for Electric Lamps -- Reflector Lamps -- Classification of Beam Patterns; 2006.
- B. ANSI C82.1 - American National Standard for Lamp Ballast - Line Frequency Fluorescent Lamp Ballast; 2004.
- C. ANSI C82.4 - American National Standard for Ballasts for High-Intensity-Discharge and Low Pressure Sodium Lamps (Multiple-Supply Type); 2002.
- D. IESNA LM-63 - ANSI Approved Standard File Format for Electronic Transfer of Photometric Data and Related Information; 2002.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- F. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems; National Electrical Contractors Association; 2006.
- G. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems; National Electrical Contractors Association; 2006.
- H. NEMA WD 6 - Wiring Devices - Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- I. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association; 2009.
- K. UL 924 - Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.
- L. UL 1598 - Luminaires; Current Edition, Including All Revisions.

##### 1.03 SUBMITTALS

- A. Shop Drawings: Indicate dimensions and components for each fixture that is not a standard product of the manufacturer.

- B. **Product Data:** Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
- C. **Operation and Maintenance Data:** Instructions for each product including information on replacement parts.
- D. **Maintenance Materials:** Furnish the following for County of Riverside EDA's use in maintenance of project.

## **PART 2 PRODUCTS**

### **2.01 LUMINAIRES**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

### **2.02 EMERGENCY LIGHTING UNITS**

- A. **Description:** Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.
- B. **Operation:** Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
- C. **Battery:**
  - 1. Size battery to supply all connected lamps, including emergency remote heads where indicated.
- D. **Diagnostics:** Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
- E. Provide low-voltage disconnect to prevent battery damage from deep discharge.

### **2.03 FIXTURE TYPES**

- A. Furnish products as indicated in Schedule included on the Drawings.

### **2.04 EXIT SIGNS**

- A. **All Exit Signs:** Internally illuminated with LEDs unless otherwise indicated; complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.
  - 1. **Number of Faces:** Single or double as indicated or as required for the installed location.
  - 2. **Directional Arrows:** As indicated or as required for the installed location.

- B. Exit Signs: Exit sign fixture suitable for use as emergency lighting unit.
  - 1. Provide fixtures complying with NFPA 101.
  - 2. Lamps: LED.
  - 3. Mounting: As indicated.

## 2.05 BALLASTS

- A. All Ballasts:
  - 1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
  - 2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.

## 2.06 FLUORESCENT EMERGENCY POWER SUPPLY UNITS

- A. Description: Self-contained fluorescent emergency power supply units suitable for use with indicated luminaires, complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.
- B. Compatibility:
  - 1. Ballasts: Compatible with electronic, standard magnetic, energy saving, and dimming AC ballasts, including those with end of lamp life shutdown circuits.
- C. Operation: Upon interruption of normal power source, solid-state control automatically switches connected lamp(s) to the fluorescent emergency power supply for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
- D. Diagnostics: Provide accessible and visible multi-chromatic combination test switch/indicator light to display charge, test, and diagnostic status and to manually activate emergency operation.

## 2.07 LAMPS

- A. Manufacturers:
  - 1. GE Lighting: [www.gelighting.com](http://www.gelighting.com).
  - 2. Philips Lighting Co of NA: [www.lighting.philips.com](http://www.lighting.philips.com).
  - 3. Sylvania.
- B. All Lamps:
  - 1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
  - 2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
  - 3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
  - 4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.
- C. Lamp Types: As specified for each fixture.

## 2.08 ACCESSORIES

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 16138 as required for installation of luminaires provided under this section.
- B. Install products according to manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general

workmanship), NECA 500 (commercial lighting), and NECA 502 (industrial lighting).

- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- E. Install fixtures securely, in a neat and workmanlike manner, as specified in NECA 500 and 502.
- F. Surface Mounted Fixtures: Install plumb and square and aligned with building lines and with each other; secure to prevent movement.
- G. Suspended Ceiling Mounted Fixtures:
  - 1. Install at locations indicated on reflected ceiling plan.
  - 2. Support fixtures larger than 2 by 4 feet in size independent of ceiling framing.
  - 3. Fixtures Recessed in Ceilings: Install to permit removal from below.
  - 4. Lay-In Ceiling Mounted Fixtures:
    - a. See section where lay-in ceiling is specified for additional requirements.
    - b. Support fixtures of all sizes independently of the grid, anchored directly to building structure.
    - c. Install clips to secure fixtures in place.
  - 5. Fixtures Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.
  - 6. Suspended Fixtures: Install using pendants supported from swivel hangers, with pendant length as required for indicated height.
- H. Wall Mounted Fixtures: Install at height as indicated on the drawings.
- I. Install accessories furnished with each luminaire.
- J. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within fixture.
- K. Bond products and metal accessories to branch circuit equipment grounding conductor.
- L. Emergency Lighting Units:
- M. Exit Signs:
- N. Fluorescent Emergency Power Supply Units:
- O. Install lamps in each luminaire.
- P. Install in accordance with manufacturers instructions.
- Q. Install specified lamps in each luminaire, emergency lighting unit and exit sign.
- R. Verify all ceiling types and provide lighting fixtures with suitable mounting hardware for mounting in or on subject ceiling.
- S. Surface Mounted Fluorescent Fixtures: Where fixtures are indicated for installation on low-density cellulose fiberboard (see room finish schedule on drawings), provide 1-1/2" insulation, unless UL approved for mounting directly to the ceiling material.
- T. Standard Plaster Frames: Provide plaster frames for all recessed lighting fixtures installed in plaster or drywall ceilings (see room finish schedule on drawings). Provide plaster frame designed and fabricated of such materials to preclude the possibility of staining the plaster.
- U. Properly support and align fixtures and provide all necessary steel shapes for support of the fixtures. Coordinate complete fixture installation with the building construction.
- V. Where special fixtures to be used in special ceiling are scheduled, verify all ceiling systems and coordinate fixture type and accessories prior to ordering fixtures. Coordinate and cooperate with ceiling supplier in the preparation of ceiling system Shop Drawings.
- W. Install fluorescent fixtures as recommended by the manufacturer or as necessary to provide



exact horizontal alignment, preventing horizontal or vertical deflection on angular jointing of fixtures suspended in continuous rows.

- X. Two-lamp ballasts shall be allowed to feed single lamps in tandem fixtures and shall be properly identified to show which lamps are fed from this ballast by markers on the fixture and the ballast. Provide the quantity and type of ballasts required to achieve switching configuration indicated on the drawings.

### **3.02 FIELD QUALITY CONTROL**

- A. See Section 01400 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Test self-powered exit signs, emergency lighting units, and fluorescent emergency power supply units to verify proper operation upon loss of normal power supply.
- E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.
- F. Each fluorescent fixture when initially energized shall be left on continuously for 100 consecutive hours to properly burn in fluorescent lamps.

### **3.03 ADJUSTING**

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.
- C. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.
- D. Aim and adjust fixtures as indicated.
- E. Position exit sign directional arrows as indicated.

### **3.04 CLEANING**

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosures.
- D. Clean photometric control surfaces as recommended by manufacturer.
- E. Clean finishes and touch up damage.

### **3.05 CLOSEOUT ACTIVITIES**

### **3.06 SCHEDULE - See Drawings**

**END OF SECTION**

## SECTION 16520

### AUTOMATIC LIGHTING CONTROL SYSTEM

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF WORK

- A. Provide and design an automatic lighting control system as described in this specification and as called for on the drawings.

##### 1.02 QUALITY ASSURANCE

- A. Manufacturer shall have a minimum of 10 years experience in manufacturing and installing this type of system.
- B. The Contractor shall provide a list of recent jobs completed during the last 5 years with the name and phone number of a contact person.
- C. All components and assemblies are to be pre-tested and assembled at the factory prior to installation.
- D. Provide a factory-trained technician on site. The technician shall functionally test each component in the system after installation to verify proper operation and confirm that the panel wiring and addressing conform to the wiring documentation.

##### 1.03 SUBMITTALS

- A. The following list includes the required shop drawings and product data information that shall be submitted.
  - 1. Underwriters Laboratories, Inc. (UL) listing and factory test reports.
  - 2. Internal and system wiring diagrams.
  - 3. Single line diagram of the system configuration. Typical riser diagrams are not acceptable.
  - 4. Dimensions of the equipment layout.
  - 5. Control wiring and conduits layout and connections.
  - 6. Floor plans to scale showing the location of each device and equipment.
  - 7. Product data of all the components including but not limited to programmable central controllers, transceivers panels, input relays, switches and other ancillary equipment.

##### 1.04 REFERENCES

- A. UL 916 Energy Management Equipment.
- B. FCC Emissions Standards specified in Part 15, subpart J for Class A, Applications.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

- A. Provide and microprocessor controlled relay panels for the Lighting Control System. The system shall include programmable standalone master panel, switch inputs, wiring, power supplies, relays and ancillary relays.
- B. Panels shall be capable of standing alone or operating as part of a network.
  - 1. The system shall provide intelligence to operate as follows:
    - a. Store all user operating data.
    - b. Initiate all relay output commands based on:
      - 1) Operator inputs
      - 2) Automatic operating schedule
      - 3) Binary type field sensors
      - 4) Universal override switch inputs
      - 5) Internal 56K Baud modem

- c. Provide automatic system diagnostics and alarming based on detected faults in the controller, transceiver panels, relays, and data line.
  - 2. System shall include a memory back up to be able to survive an indefinite length of power failure.
- C. Lighting Control Panel (LCP): Microprocessor based, complete prewired assemblies consisting of the following:
  - 1. Stand alone panel controller capable of receiving and acting upon programs downloaded from the central computer. Programs downloaded from the network shall be capable of continuing to operate even if the network should fail. Battery Back up provides 8 days of memory retention. Panel shall be part of a system that can control up to 750 relays and receive up to 500 switch inputs. Panel shall have an USB input for local programming and trouble shooting from a laptop computer.
  - 2. Internal digital clock with self control power.
  - 3. Output modules: Plug in type to receive coded digital commands from the panel controller and pulse output relays to the appropriate state. Actual status feedback of the relays are to be fed back to the panel controller and from there to the central computer. Actual status of each relay is to be indicated by a pilot LED on the control board. Each Module controls 8 or 16 relays.
  - 4. Switch input modules: Plug-in type, actuated by remote external contact closures. These contact closures may be either momentary or maintained. The action of the contact is noted by the panel controller and acted upon as programmed by software. The action of the contact can command any group of output relays to the desired state. Either 8 or 24-input channels as shown on the plans.
  - 5. Output Relays
    - a. Type: Momentary pulsed, mechanically latched with pilot light contact.
    - b. Rating: 20 Ampere, 277VAC
    - c. Number per panel: 16,32 or 48 as required to satisfy this project scope.
  - 6. The low voltage and high voltage sections of the lighting control cabinet shall be separated by a 14 gage steel barrier in which the relays are mounted. In areas where both 120 volt and 277 volt loads are present the high voltage compartment shall have a 14 gage steel barrier between the relays that carry 120 VAC and the relays that carry 277VAC. Each section shall be clearly labeled as to the voltage in that compartment.
  - 7. Panel power supply shall be dual primary 115/277 volts AC, 60 Hz.  $\pm$  10%. Low voltage side shall be protected from power line surges and spikes on the input power. The low voltage section shall be protected against short circuit faults and relay failures.
  - 8. Panels shall be UL approved and shall have a short circuit withstand current rating at 14,000 AIC.
  - 9. Manufacturer: Lighting Control and Design, or G.E. or equal.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. The Lighting Control System shall be installed and wired completely as required by the equipment manufacturer by the contractor, who shall make all necessary wiring connections to the lighting fixtures, override switches, photo cells and equipment.
- B. The Contractor shall provide on-site programming time with factory-trained personnel for the system set-up. The Contractor shall set up the software program and program the entire system in accordance with the Owner's instructions.
- C. Documentation
  - 1. Accurate "as-built" drawings shall be provided by the Contractor. These shall indicate the load controlled by each relay and the identification number for that switch connected to an input and the identification number of that input. Three sets of space plans or reflected ceiling plans shall be provided by the contractor indicating which fixtures are controlled by each relay.

2. A separate data grade private line with RJ45 jack shall be furnished for each modem.

### **3.02 SERVICE AND SUPPORT**

- A. **Startup:** After the system has been installed, the Contractor shall provide the services of a factory trained representative of the manufacturer to verify correct operation of all system components. The contractor shall guarantee all material and workmanship involving the system for three years after startup.
- B. **Training:** After system startup and after all the programming is completed, the Contractor shall arrange for a factory trained representative to train the Owner's personnel. The trainer shall instruct the Owner's personnel in how to program the system and demonstrate a typical operating program for an area. The Contractor shall allow for 24 hours' instruction time for the Owner's training.
- C. **Factory Support:** Factory support shall be available free of charge during the three-year warranty period to answer programming and application questions. The manufacturer, or his representative, shall have a remote terminal capable of programming the system to support the Owner's personnel during this period. The Contractor shall include a modem, necessary cabling and telephone extension to support this telecommunications operation. The Contractor shall provide a three-year maintenance service contract as part of the cost.
- D. The Contractor shall also provide a software site licensing so that the Owner will be able to transfer the software program from the main computer to the other computers. This transfer shall not be an extra cost to the Owner.

**END OF SECTION**



OFFICE OF  
CLERK OF THE BOARD OF SUPERVISORS  
1st FLOOR, COUNTY ADMINISTRATIVE CENTER  
P.O. BOX 1147, 4080 LEMON STREET  
RIVERSIDE, CA 92502-1147  
PHONE: (951) 955-1060  
FAX: (951) 955-1071

KECIA HARPER-IHEM  
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR  
Assistant Clerk of the Board

May 14, 2012

THE PRESS ENTERPRISE  
ATTN: LEGALS  
PO BOX 792  
RIVERSIDE, CA 92501

FAX (951) 368-9018  
E-MAIL: [legals@pe.com](mailto:legals@pe.com)

**RE: NOTICE INVITING BIDS: DEPARTMENT OF MENTAL HEALTH, 14<sup>TH</sup> STREET OFFICE  
TENANT IMPROVEMENTS**

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) CONSECUTIVE THURSDAYS: May 17 and 24, 2012.**

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

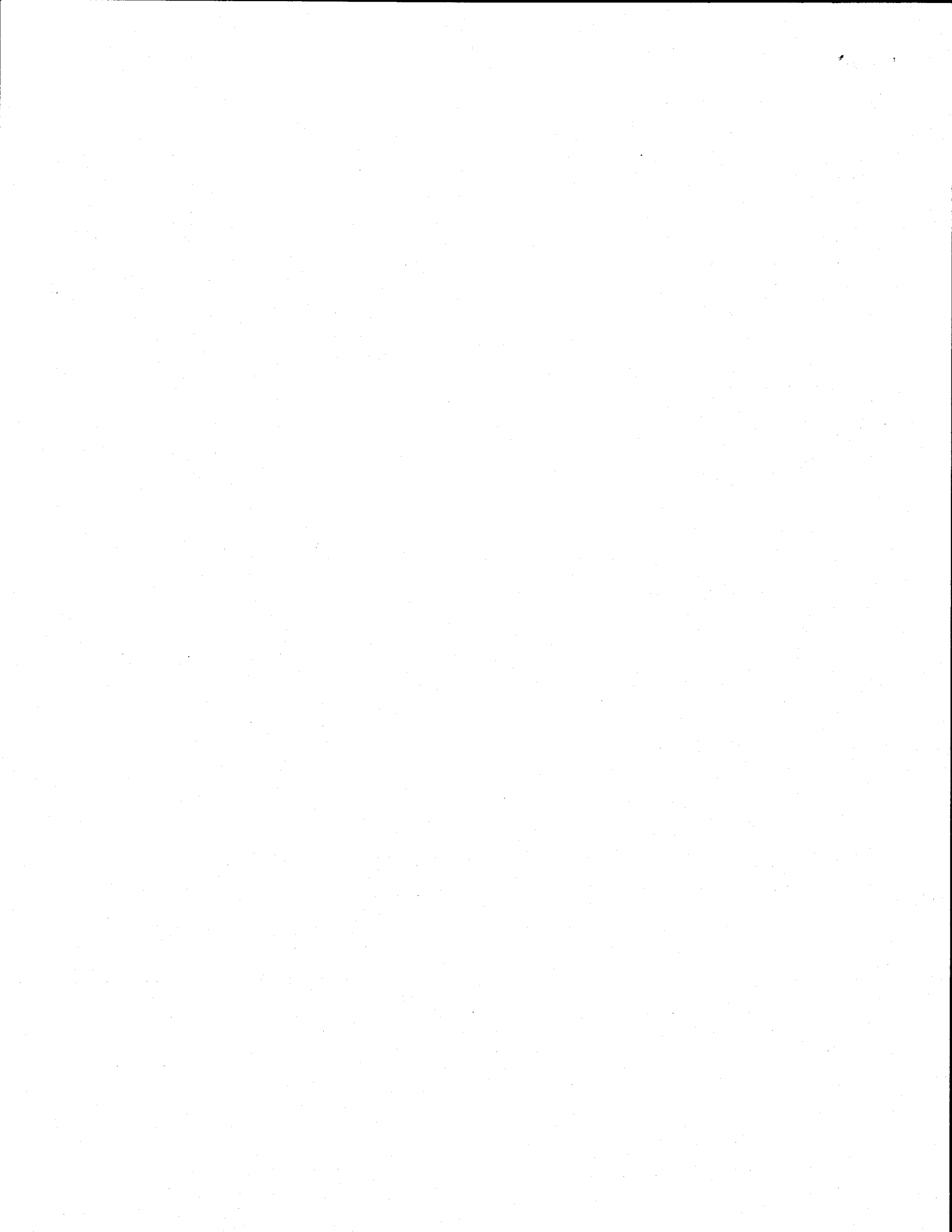
**NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.**

Thank you in advance for your assistance and expertise.

Sincerely,

*McGil*

Cecilia Gil, Board Assistant to  
KECIA HARPER-IHEM, CLERK OF THE BOARD



**Gil, Cecilia**

---

**From:** mtinajero@pe.com on behalf of Master, PEC Legals <legalsmaster@pe.com>  
**Sent:** Monday, May 14, 2012 9:20 AM  
**To:** Gil, Cecilia  
**Subject:** Re: [Legals] FOR PUBLICATION: Bids for Mental Health 14th St. Tenant Improvements

Received for publication on May 17 and 24. Proof with cost to follow.

On Mon, May 14, 2012 at 9:02 AM, Gil, Cecilia <[CCGIL@rcbos.org](mailto:CCGIL@rcbos.org)> wrote:

Hello...Notice Inviting Bids, for publication on 2 Thursdays: May 17 and 24, 2012. Please confirm. THANK YOU!

*Cecilia Gil*

Board Assistant to the  
Clerk of the Board of Supervisors  
[951-955-8464](tel:951-955-8464)

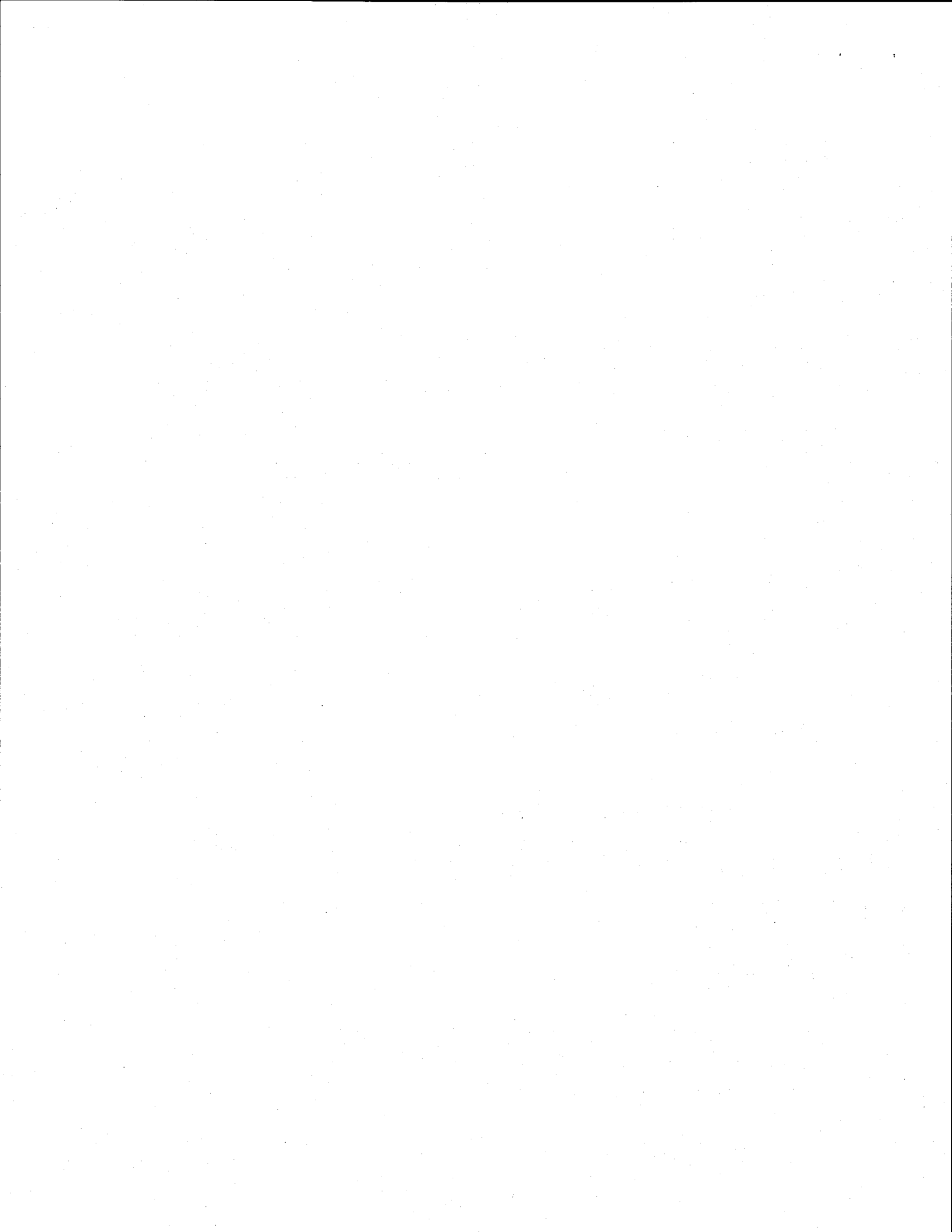
***THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.***

**PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.**

--  
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FAX: (951) 955-1071

KECIA HARPER-IHEM  
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR  
Assistant Clerk of the Board

May 14, 2012

RIVERSIDE COUNTY RECORD  
ATTN: LEGALS  
PO BOX 3187  
RIVERSIDE, CA 92519

FAX (951) 685-2961  
E-MAIL: recordmde@aol.com

**RE: NOTICE INVITING BIDS: DEPARTMENT OF MENTAL HEALTH, 14<sup>TH</sup> STREET OFFICE  
TENANT IMPROVEMENTS**

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) CONSECUTIVE THURSDAYS: May 17 and 24, 2012.**

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

**NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.**

Thank you in advance for your assistance and expertise.

Sincerely,

*Mcgil*

Cecilia Gil, Board Assistant to  
KECIA HARPER-IHEM, CLERK OF THE BOARD



**Gil, Cecilia**

---

**From:** Michael Evans <recordmde@aol.com>  
**Sent:** Monday, May 14, 2012 10:02 AM  
**To:** Gil, Cecilia  
**Subject:** Re: FOR PUBLICATION: Bids for Mental Health 14th St. Tenant Improvements

Good Morning and Happy Late Mother's Day if you are a mom,  
Anyway, I have received the notice for publication on May 17 and 24.  
Thanks, Mike

-----Original Message-----

**From:** Gil, Cecilia <CCGIL@rcbos.org>  
**To:** recordmde <recordmde@aol.com>  
**Sent:** Mon, May 14, 2012 9:50 am  
**Subject:** FOR PUBLICATION: Bids for Mental Health 14th St. Tenant Improvements

Hello...Notice Inviting Bids, for publication on 2 Thursdays: May 17 and 24, 2012. Please confirm. THANK YOU!

**Cecilia Gil**  
Board Assistant to the  
Clerk of the Board of Supervisors  
951-955-8464

*THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.  
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.*



## NOTICE INVITING BIDS

**NOTICE IS HEREBY GIVEN** that the County of Riverside ("County") invites sealed Bids for the construction of the following project ("Work"):

### Department of Mental Health, 14th Street Office Tenant Improvement

Bids shall be prepared in conformance with the Instructions to Bidders and other Bidding Documents. Bids must be received, by hand delivery or mail, by the Clerk of the Board located on the 1<sup>st</sup> floor of the County Administrative Center, 4080 Lemon Street, Riverside, CA 92501, no later than the Bid Closing Deadline of **11:00 a.m. on Thursday, June 21, 2012**, to be thereafter on said date and at said location publicly opened and read aloud. The Bidder assumes sole responsibility for timely receipt of its Bid.

On and after May 14, 2012 and up to forty-eight (48) hours prior to the Bid Closing Deadline, copies of Bidding Documents will be available to Bidders for pick-up by Bidder at, or for mailing to Bidder upon written request by Bidder submitted to, A&I Reprographics, 898 Via Lata, Ste. L, Colton, CA 92324, 909-514-0704 or <http://dfs.aandirepro.com>. At the time of such pick-up or request for mailing, a non-refundable fee of one hundred and twenty three dollars (\$123.00) for each set of Bidding Documents shall be paid by Bidder by cash or by check or money order made payable to A&I Reprographics. The Bidding Documents may also be viewed in person between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday (except Holidays) at A&I Reprographics, 898 Via Lata, Ste. L, Colton, CA 92324.

A mandatory Pre-Bid Conference will be conducted **on Thursday, May 31, 2012**, commencing promptly at **9:00 a.m.**, at **3625 14th St., Riverside, CA 92501**. **Attendance at the mandatory Pre-Bid Conference is required as a condition of bidding.** Sign language services are available for the Pre-Bid Conference upon written request received by **email** at **[rmedellin@rivcoeda.org](mailto:rmedellin@rivcoeda.org)** at least three (3) business days prior to the Pre-Bid Conference.

The Bidder receiving the Award by the County is required:

- (1) to furnish a Performance Bond and Payment Bond as provided in the Instructions to Bidders and other Bidding Documents;
- (2) both at the time Bidder submits its Bid and other Bid Submittals and at the time of Award, to: (a) hold a contracting license, active and in good standing, issued by the Contractors State License Board for the State of California for the following license classification(s): B - General Building; and (b) hold, or designate a Subcontractor that holds, the certification(s) required by Applicable Laws to perform the following work: Electrical, Mechanical, Plumbing, Fire Protection ; and
- (3) to comply with the provisions of the California Labor Code, including, without limitation, Sections 1773.1, 1774, 1775 and 1776 of the California Labor Code and including, without limitation, the obligations to pay the general prevailing rates of wages in the locality in which the Work is to be performed and comply with Section 1777.5 of the California Labor Code governing employment of apprentices. Copies of the prevailing rates of per diem wages are on file at the Economic Development Agency – Project Management Office, 3403 10th St., 4<sup>th</sup> Floor, Riverside, CA 92501, and are available to any interested party on request.

Substitution of securities for any moneys withheld by County shall be permitted as provided for by Section 22300 of the California Public Contract Code.

Capitalized terms used herein shall have the meanings assigned to them in the Bidding Documents.

For further information, contact:  
Economic Development Agency  
Riverside Centre  
3403 Tenth Street, 4th Floor  
Riverside, CA 92501

Dated: May 14, 2012

Kecia Harper-Ihem, Clerk of the Board  
By: Cecilia Gil, Board Assistant

