PROJECT MANUAL
for;

Saddleback College Fine Arts Complex
Art Department Structural Repairs

Saddleback College Fine Arts Complex
New Exterior Finishes and Color Selections Project

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692-3635

Prepared By:

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Project Number 9014.00 Structural Repairs
Project Number 9006.00 New Exterior Finishes
04.29.10
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*If the following items are not returned at the time of the bid opening, the bidder will be declared nonresponsive
+Items which successful bidder must submit after the date of Notice to Proceed
NOTICE CALLING FOR BIDS

District: SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT

Project: BID NO. 1095: Fine Arts Repairs & New Exterior Finishes & Color Selection at Saddleback College

Bid Deadline: 2:00 P.M., May 26, 2010

Mailing Address & Place of Bid Receipt:
South Orange County Community College District
Health Sciences Building, 3rd Floor, Room HS-357
Purchasing & Facilities Planning Department
28000 Marguerite Parkway
Mission Viejo, CA  92692

NOTICE IS HEREBY GIVEN that the South Orange County Community College District, of Orange County, California, acting by and through its Governing Board, hereinafter referred to as "DISTRICT," will receive up to, but not later than, the above-stated time, sealed bids for the award of a contract for the above Project.

Project’s Preliminary Cost Estimate: Fine Arts Repairs & New Exterior Finishes & Color Selection at Saddleback College: $500,000

Complete description, specifications and general conditions may be viewed at the Office of the Director of Facilities Planning and Purchasing Department at the above address, telephone (949) 582-4678 or previewed on-line at socccd.edu Interested bidders may purchase complete bid documents from Repro X-press, 18207 McDurmott St., Suite I, Irvine, CA 92614, Phone: (866) 364-8569, Fax: (949) 336-7757. Payment will not be refunded, and the Project Documents are not required to be returned.

There will be a mandatory job walk and conference at 9:00 AM, May 10, 2010 starting in front of the McKinney Theater located in the vicinity of parking lot 12 at Saddleback College, 28000 Marguerite Parkway, CA 92692. Any bidder failing to attend the entire pre bid conference shall be deemed a non-responsive bidder and will have his bid returned unopened.

In accordance with the provisions of California Business and Professions Code Section 7028.15 and Public Contract Code Section 3300, the DISTRICT requires that the bidder possess the following classification of contractor’s license at the time the bid is submitted: Class B. Any bidder not so licensed at the time of the bid opening will be rejected as non-responsive.

Time is of the essence. Failure to complete the work within the time set forth in the bid documents will result in the imposition of liquidated damages for each day of delay in the amount set forth in the Information for Bidders.

Each bid shall be accompanied by a bid security in the form of cash, a certified or cashier's check or bid bond in an amount not less than ten percent (10%) of the total bid price, payable to the DISTRICT. In the event the successful bidder fails to enter into the contract and execute the required documents, the bid security shall be forfeited. The
successful bidder shall furnish a satisfactory Performance Bond and a Payment Bond in amounts not less than one hundred percent (100%) of the total bid price.

The DISTRICT reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process.

The California Department of Industrial Relations has determined the general prevailing rates of per diem wages for the locality in which the work is to be performed for the Project. Copies of these wage rate determinations, entitled Prevailing Wage Scale, are maintained at the DISTRICT office and are available at the following website: www.dir.ca.gov. It shall be mandatory upon the successful bidder to whom the contract is awarded, and upon any subcontractor listed, to pay not less than the said specified rates to all workers employed by them for the Project. These requirements will be enforced through our Labor Compliance consulting firm.

No bidder may withdraw any bid for a period of ninety (90) calendar days after the date set for the opening of bids.

The general prevailing rate of per diem wages is based upon a working day of eight (8) hours. The rate for holiday and overtime work shall be at least time and one-half.

Pursuant to Section 22300 of the Public Contract Code, the Agreement will contain provisions permitting the successful bidder to substitute securities for any monies withheld by the DISTRICT to ensure performance under the Agreement or permitting payment of retention earned directly into escrow.

Prequalification is a requirement for bidding this project. Prequalification documents will be distributed at the mandatory job walk and conference.

Brandy K. D’Lena
Director,
Facilities Planning & Purchasing

PUBLISH: THE REGISTER

May 1, 2010
&
May 8, 2010

ATTENTION: LEGAL AD DEPARTMENT

In order for our Department to process payment, you MUST send Proof of Advertisement (Affidavit) on the date of publication to:

South Orange County Community College District
ATTN: Facilities Planning & Purchasing
28000 Marguerite Parkway
Mission Viejo, CA 92692

NOTE: PLEASE CALL LINDA HALL AT (949) 348-6017 WHEN AD IS RECEIVED.
WARNING:
READ THIS DOCUMENT CAREFULLY. DO NOT ASSUME THAT IT IS THE SAME AS OTHER SIMILAR DOCUMENTS YOU MAY HAVE SEEN, EVEN IF FROM THE SAME DISTRICT.

1. Preparation of Bid Form. Bids shall be submitted on the prescribed Bid Form, completed in full. All bid items and statements shall be properly and legibly filled out. Numbers shall be stated both in words and in figures where so indicated, and where there is a conflict in the words and the figures, the words shall control over the numbers. The signatures of all persons shall be in longhand and in ink. Prices, wording and notations must be in ink or typewritten.

2. Form and Delivery of Bids. The bid must conform and be responsive to all Project Documents and shall be made on the Bid Form provided, and the complete bid, together with any and all additional materials as required, shall be enclosed in a sealed envelope, addressed and hand delivered or mailed to the DISTRICT at:

South Orange County Community College District
Health Science Building, 3rd Floor
28000 Marguerite Parkway
Mission Viejo, CA, 92692

and must be received on or before the bid deadline (Public Contract Code Section 20112). The envelope shall be plainly marked in the upper left hand corner with the bidder's name, the Project designation and the date and time for the opening of bids. **It is the bidder's sole responsibility to ensure that its bid is received prior to the bid deadline.** In accordance with Government Code Section 53068, any bid received after the scheduled closing time for receipt of bids shall be returned to the bidder unopened. At the time and place set forth for the opening of bids, the sealed bids will be opened and publicly read aloud. However, if prequalification of bidders is required pursuant to Public Contract Code Section 20111.5 only those sealed bids received from prequalified bidders shall be opened and publicly read aloud.

3. Bid Security. Each bid shall be accompanied by a bid security in the form of cash, a certified or cashier's check or bid bond in the amount of not less than ten percent (10%) of the total bid price payable to the DISTRICT and shall be given as a guarantee that the bidder, if awarded the contract, will execute the Agreement within ten (10) working days after Notice to Proceed, and will furnish, on the prescribed forms, a satisfactory Faithful Performance Bond in an amount not less than one hundred percent (100%) of the total bid price and separate Payment (labor and material) Bond in an amount not less than one hundred percent (100%) of the total bid price, furnish certificates and endorsements evidencing that the required insurance is in effect, the Workers’ Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, all within ten(10) working days of the Notice to Proceed or as otherwise requested in writing by the DISTRICT. It is understood and agreed that should bidder fail or refuse to return these documents as required by the DISTRICT, the bid security shall be forfeited to the DISTRICT. If the Bidder elects to furnish a bid bond as its Bid Security, the Bidder shall use the bid bond form included in the Project Documents.

4. Signature. Any signature required on Project Documents must be signed in the name of the bidder and must bear the signature of the person or persons duly authorized to sign these documents. Where indicated, if bidder is a corporation, the legal name of the corporation shall first be set forth, together with two signatures: one from among the chairman of the board, president or vice president and one from among the secretary, chief financial officer, or treasurer. Alternatively, the signature of other authorized officers or agents may be affixed, if duly authorized by the corporation. Such documents shall include the title of such signatories below the signature and shall bear the corporate seal. Where indicated, in the event that the bidder is a joint venture or partnership, there shall be submitted with the bid certifications signed by
authorized officers of each of the parties to the joint venture or partnership, naming the individual who shall sign all necessary documents for the joint venture or partnership and, should the joint venture or partnership be the successful bidder, who shall act in all matters relative to the Project for the joint venture or partnership. If bidder is an individual, his/her signature shall be placed on such documents.

5. Modifications. Changes in or additions to any of the bid documents, summary of the work bid upon, alternative proposals, or any other modifications which are not specifically called for by the DISTRICT may result in the DISTRICT'S rejection of the bid as being nonresponsive. No oral, telephonic, facsimile or electronic modification of any of the bid documents will be considered.

6. Erasures, Inconsistent or Illegible Bids. The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction is authenticated by affixing the initials of the person(s) signing the bid in the margin immediately adjacent to the correction. In the event of inconsistency between words and numbers in the bid, words shall control numbers. In the event that DISTRICT determines that any bid is unintelligible, illegible or ambiguous, the DISTRICT may reject such bid as being nonresponsive.

7. Examination of Site and Project Documents. At its own expense and prior to submitting its bid, each bidder shall examine all documents relating to the Project; visit the site and determine the local conditions which may in any way affect the performance of the work, including the general prevailing rates of per diem wages and other relevant cost factors; familiarize itself with all Federal, State and Local laws, ordinances, rules, regulations and codes affecting the performance of the work, including the cost of permits and licenses required for the work; make such surveys and investigations, including investigation of subsurface or latent physical conditions at the site or where work is to be performed, as it may deem necessary for performance of the work at its bid price; determine the character, quality, and quantities of the work to be performed and the materials and equipment to be provided; and correlate its observations, investigations, and determinations with all requirements of the Project. The Project Documents show and describe the existing conditions as they are believed to have been used in the design of the work and are only provided as information for the bidder. The DISTRICT is not making any warranties regarding said information. The DISTRICT shall not be liable for any loss sustained by the successful bidder resulting from any variance between the conditions and design data given in the Project Documents and the actual conditions revealed during the bidder's pre-bid examination or during the progress of the work. Bidder agrees that the submission of a bid shall be incontrovertible evidence that the bidder has complied with all the requirements of this provision of the Information for Bidders.

8. Withdrawal of Bids. Any bid may be withdrawn, either personally or by written request signed by the bidder, at any time prior to the scheduled closing time for receipt of bids. The bid security for a bid withdrawn prior to the scheduled closing time for receipt of bids, in accordance with this paragraph, shall be returned. No bidder may withdraw any bid for a period of ninety (90) calendar days after the date set for the opening of bids.

9. Agreement and Bonds. The Agreement which the successful bidder will be required to execute and the payment bond required in accordance with Civil Code Section 3247, are included in the Project Documents. The payment bond shall be in the amount not less than one hundred percent (100%) of the amount of the contract in accordance with Civil Code Section 3248. The successful bidder will also be required to furnish a separate faithful performance bond in the amount of one hundred percent (100%) of the contract and in the form included in the Project Documents, which shall remain in full force and effect through the guarantee period as specified in the General Conditions. All bond premiums shall be at bidder’s cost.

10. Interpretation of Project Documents. If any bidder is in doubt as to the true meaning of any part of the Project Documents, or finds discrepancies in, or omissions from the Project Documents, a written request for an interpretation or correction thereof must be submitted to the DISTRICT no later than four (4) days before bid deadline. No requests shall be considered after this time. The bidder submitting the written request shall be responsible for its prompt delivery. Any interpretation or correction of the Project Documents will be made solely at DISTRICT’S discretion and only by written addendum duly issued by the DISTRICT, and a copy of such addendum will be hand delivered or mailed or faxed to each bidder known to have received a set of the Project Documents. No person is authorized to make any oral
interpretation of any provision in the Project Documents, nor shall any oral interpretation of Project Documents be binding on the DISTRICT. If there are discrepancies of any kind in the Project Documents, the interpretation of the DISTRICT shall prevail. Submittal of a bid without a request for clarification shall be incontrovertible evidence that the bidder has determined that the project documents are acceptable and sufficient for bidding and completing the work; that bidder is capable of reading, following and completing the work in accordance with the project documents; and that bidder agrees that the project can and will be completed according to the DISTRICT’s timelines and according to the progress schedule to be submitted by the successful bidder incorporating the DISTRICT’s timelines for completion of the project.

11. **Bidders Interested in More Than One Bid.** No person, firm or corporation shall be allowed to make, or file, or be interested in more than one bid for the same work unless alternate bids are specifically called for by the DISTRICT. A person, firm, or corporation that has submitted a sub-proposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a proposal or quoting prices to other bidders or submitting a bid on the Project.

12. **Award of Contract.** The DISTRICT reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding process. The award of the contract, if made by the DISTRICT, will be by action of the Governing Board and to the lowest responsive and responsible bidder. If two identical low bids are received from responsive and responsible bidders, the DISTRICT will determine which bid will be accepted pursuant to Public Contract Code Section 20117. In the event an award of the contract is made to a bidder, and such bidder fails or refuses to execute the Agreement and provide the required documents within fifteen (15) working days after the Notice to Proceed to bidder, the DISTRICT may award the contract to the next lowest responsive and responsible bidder or reject all bidders.

13. **Alternate Bids.** If alternate bids are called for, the DISTRICT will award the contract to the lowest responsive and responsible bidder based on the lowest total of the bid prices on the base contract without consideration of the prices on the additive or deductive items.

14. **Competency of Bidders.** In selecting the lowest responsive and responsible bidder, consideration will be given not only to the financial standing but also to the general competency of the bidder for the performance of the Project. By submitting a bid, each bidder agrees that the DISTRICT, in determining the successful bidder and its eligibility for the award, may consider the bidder’s experience and facilities, conduct and performance under other contracts, financial condition, reputation in the industry, and other factors which could affect the bidder’s performance of the Project. To this end, each bid shall be supported by a statement of the bidder’s experience on the form entitled “INFORMATION REQUIRED OF BIDDER.”

The DISTRICT may also consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the work. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by the DISTRICT. In this regard, the DISTRICT may conduct such investigations as the DISTRICT deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications and financial ability of the bidder, proposed subcontractors, and other persons and organizations to do the work to the DISTRICT’s satisfaction within the prescribed time. The DISTRICT reserves the right to reject the bid of any bidder who does not pass any such evaluation to the satisfaction of the DISTRICT.

15. **Bidder's Prequalification.** Only Bid Proposals submitted by Prequalified Bidders will be considered. A Bid Proposal submitted by a Bidder who is not prequalified will be deemed a non-responsive Bid Proposal and will be rejected by the District. A Bidder who has not completed the Prequalification Application and has not been deemed a "Qualified Bidder" must complete the Prequalification Application and submit the Prequalification Application to the District (via the Construction Manager) by the date and in the manner set forth in the Prequalification Application. The failure to submit a completed Prequalification Application on or prior to such date will render the Bid Proposal of the Bidder untimely submitting a completed Prequalification Application to be non-responsive and rejected. If the District determines that any information provided by a Bidder in the Prequalification Application is false or misleading, or is incomplete so as to be false or misleading, the District may reject the Bid Proposal submitted by such Bidder as being non-responsive.
16. **Listing Subcontractors.** Each bidder shall submit, on the form furnished with the Project Documents, a list of the proposed subcontractors on this Project as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100, et seq.). If alternate bids are called for and the bidder intends to use different or additional subcontractors, a separate list of subcontractors must be submitted for each such alternate bid. If the bidder fails to specify a subcontractor for any portion of the work in excess of one half (1/2) of one percent (1%) of the bidder’s total bid, the bidder agrees that he/she is fully qualified to perform that work and agrees to perform that portion of the work. Violation of this requirement (including the procurement of a subcontractor for the Project if no subcontractor is specified) can result in the DISTRICT invoking the remedies of Public Contract Code Sections 4110 and 4111.

17. **Insurance and Workers' Compensation.** The successful bidder shall be required to furnish certificates and endorsements evidencing that the required insurance is in effect. DISTRICT may request that such certificates and endorsements are completed on DISTRICT provided forms. In accordance with the provisions of Section 3700 of the Labor Code, the successful bidder shall secure the payment of compensation to all employees. The successful bidder who has been awarded the contract shall sign and file with DISTRICT prior to performing the work, the Workers’ Compensation Certificate included as a part of the Project Documents. Labor Code Section 1861.

18. **Contractor's License.** If, at the time and date of the contract execution, bidder is not properly licensed to perform the Project in accordance with Division 3, Chapter 9, of the Business and Professions Code and the Project Documents, such bid will be rejected as nonresponsive. (Public Contract Code Section 3300) Pursuant to Business and Professions Code Section 7028.15, no payment shall be made for work or materials under the contract unless and until the Registrar of Contractors verifies to the DISTRICT that the bidder was properly licensed at the time the bid was submitted. Any bidder not so licensed is subject to penalties under the law and the contract will be considered void and DISTRICT shall have the right to bring an action against the unlicensed bidder awarded the contract for recovery of all compensation paid under the contract. (Business and Professions Code Section 7031(b)) If the license classification specified hereinafter is that of a "specialty contractor" as defined in Section 7058 of the Business and Professions Code, the specialty contractor awarded the contract for this work shall construct a majority of the work, in accordance with the provisions of Business and Professions Code Section 7059. The bidder may not use the contractor license of a third party for this bid.

19. **Anti-Discrimination.** In connection with all work performed under this Project, there shall be no unlawful discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, marital status, physical disability, mental disability, or medical condition. The successful bidder agrees to comply with applicable Federal and State laws including, but not limited to, the California Fair Employment and Housing Act, beginning with Government Code Section 12900 and Labor Code Section 1735. In addition, the successful bidder agrees to require like compliance by any subcontractors employed on the Project by such bidder.

20. **Hold Harmless and Indemnification.** The successful bidder awarded the contract will be required to indemnify and hold harmless the DISTRICT, its Governing Board, officers, agents, and employees as set forth in the Agreement.

21. **Substitutions.** Should the bidder wish to request any substitution for the materials, process, service, or equipment specified, the bidder shall be required to comply with Article 30 of the General Conditions.

22. **Surety Qualifications for Bonds.** Bidders shall ensure all surety companies have a minimum rating of "A-VIII," as rated by the current edition of Best's Key Rating Guide, published by A.M. Best Company, Oldwick, New Jersey 08858. Only California admitted surety insurers will be acceptable for the issuance of bonds. (Code of Civil Procedure Section 995.311) DISTRICT shall verify the status of the surety by one of the following ways: (1) printing out information from the website of the California Department of Insurance confirming the surety is an admitted surety insurer and attaching it to the bond, or (2) obtaining a certificate from the county clerk for the county in which the DISTRICT is located that confirms the surety is an admitted surety insurer and attaching it to the bond. Any admitted surety insurer who cannot satisfy the minimum rating specified above, but who satisfies the following requirements set forth in Code of Civil Procedure Section 995.660 shall be accepted and approved for the issuance of bonds:
(a) There must be on file in the office of the county clerk, for the county in which the DISTRICT is located, an unrevoked appointment, power of attorney, bylaws, or other instrument, duly certified by the proper authority and attested by the seal of the insurer authorizing the person who executed the bond to do so for and on behalf of the insurer within ten (10) calendar days of the insurer’s receipt of a request to submit such document from the DISTRICT, and an original or certified copy of the document must be submitted to the DISTRICT.

(b) A certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner must be submitted to the DISTRICT within ten (10) calendar days of the insurer’s receipt of a request to submit such document from the DISTRICT.

(c) A certificate from the clerk of the county that the certificate of authority of the insurer has not been surrendered, revoked, cancelled, annulled, or suspended, and in the event it has, whether renewed authority has been granted must be submitted to DISTRICT within ten (10) calendar days of the insurer’s receipt of a request to submit such document from the DISTRICT.

(d) Copies of the insurer’s most recent annual statement and quarterly statement filed with the California Department of Insurance must be submitted to the DISTRICT within ten (10) calendar days of the insurer’s receipt of a request to submit the statements.

23. **Liquidated Damages.** All work must be completed within the time limits set forth in the Project Documents. It is agreed that damages for the failure to complete the Project described herein within the time limits required are impossible to ascertain. Should the work not be completed within the specified time for completion, the successful bidder awarded the contract shall be liable for liquidated damages, payable to the DISTRICT, in an amount of One Thousand Dollars ($1,000.00) for each consecutive calendar day of delay in completion. Such damages shall be deducted from any payments due or to become due to the successful bidder. Government Code Section 53069.85, Civil Code Section 1671.

24. **Drug-Free Workplace Certification.** Pursuant to Government Code Sections 8350, et seq., the successful bidder will be required to execute a Drug-Free Workplace Certification upon execution of the Agreement. The bidder will be required to take positive measures outlined in the certification in order to ensure the presence of a drug-free workplace. Failure to abide with the conditions set forth in the Drug-Free Workplace Act could result in penalties including termination of the Agreement or suspension of payment thereunder.

25. **Noncollusion Affidavit.** In accordance with the provisions of Section 7106 of the Public Contract Code, each bid must be accompanied by a noncollusion affidavit properly notarized.

26. **Escrow Agreement.** Public Contract Code Section 22300 permits the substitution of securities for any monies withheld by a public agency to ensure performance under a contract. At the request and expense of the successful bidder awarded the contract, securities equivalent to the amount withheld as retention shall be deposited with the DISTRICT, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the successful bidder. The DISTRICT retains the sole discretion to approve the bank selected by the successful bidder to serve as escrow agent. Upon satisfactory completion of the contract, the securities shall be returned to the successful bidder. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The successful bidder shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the successful bidder may request DISTRICT to make payment of earned retentions directly to the escrow agent at the expense of the successful bidder. Also at the successful bidder's expense, the successful bidder may direct investment of the payments into securities, and the successful bidder shall receive interest earned on such investment upon the same conditions as provided for securities deposited by successful bidder. Upon satisfactory completion of the contract, successful bidder shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300.
The successful bidder who elects to receive interest on monies withheld in retention by the DISTRICT shall, at the request of any subcontractor performing more than five percent (5%) of the successful bidder’s total bid, make that option available to the subcontractor regarding any monies withheld in retention by the successful bidder from the subcontractor. If the successful bidder elects to receive interest on any monies withheld in retention by the DISTRICT, then the subcontractor shall receive the identical rate of interest received by the successful bidder on any retention monies withheld from the subcontractor by the successful bidder, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the successful bidder elects to substitute securities in lieu of retention, then, by mutual consent of the successful bidder and subcontractor, the subcontractor may substitute securities in exchange for the release of monies held in retention by the successful bidder. Public Contract Code Section 22300(d)(1).

The successful bidder wishing to utilize Public Contract Code Section 22300 and enter into an Escrow Agreement shall complete and execute the form Escrow Agreement included in the Project Documents and submit it to the DISTRICT.

27. **Change Orders.** All change order requests must be submitted in the form set forth in the Project Documents and pursuant to Article 60 of the General Conditions. The amount of allowable charges submitted pursuant to a change order shall be limited to the charges allowed under Article 60 of the General Conditions. Indirect, consequential and incidental costs, project management costs, extended home office and field office overhead, administrative costs and profit and other charges not specifically authorized under Article 60 of the General Conditions will not be allowed.

28. **Tobacco-Free Policy.** The successful bidder shall agree to enforce a tobacco-free work site.

29. **Lead.** Pursuant to the Lead-Safe Schools Protection Act (Education Code Sections 32240, et seq.) and other applicable law, the successful bidder shall not use lead-based paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or the modernization or renovation of any existing school facility.

30. The number of executed copies of the Agreement, the Faithful Performance Bond, and the Payment Bond required is THREE (3).
BID FORM

Name of Bidder: ____________________________

To: South Orange County Community College District, acting by and through its Governing Board, herein called the "DISTRICT."

1. The undersigned Bidder, having become familiarized with all the following documents including but not limited to the Notice Calling for Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractors Form, Information Required of Bidder, all prequalification forms pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Affidavit, Workers’ Compensation Certificate, Faithful Performance Bond, Payment Bond, Agreement, Escrow Agreement, Drug-Free Workplace Certification, Criminal Records Check Certification, Change Order Forms, Shop Drawing Transmittal Form, all insurance requirements, Guarantee forms, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, Disabled Veteran Business Enterprises Certification, if applicable, General Conditions and Supplemental Conditions, if any, Special Conditions, if any, drawings, specifications, and all modifications, addenda and amendments, if any (hereinafter Project Documents), the local conditions affecting the performance of the work and the cost of the work at the place where the work is to be done, hereby proposes and agrees to be bound by all the terms and conditions of the Project Documents and agrees to perform, within the time stipulated, the work, including all of its component parts, and everything required to be performed, and to provide and furnish and pay for any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the work and complete in a good workmanlike manner all of the work required in accordance with laws, codes, regulations, ordinances and any other legal requirements governing the work, in connection with the following:

Project: Fine Arts Repairs and New Exterior Finishes and Color Selection, Saddleback College
Project No.: Bid No. #1095

all in strict conformity with the Project Documents, including Addenda Nos. _____, _____, _____ and ______, on file at the office of the Director of Facilities Planning and Purchasing of said DISTRICT for the following sums:

<table>
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<th>Handwritten</th>
<th>Numeric</th>
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<tbody>
<tr>
<td>1) Fine Arts Complex New Exterior Finishes &amp; Color Selection</td>
<td>$_________ /100</td>
</tr>
<tr>
<td>2) Fine Arts Complex Art Department Structural Repair</td>
<td>$______________ /100</td>
</tr>
<tr>
<td>Base Bid equals the sum of items 1 &amp; 2</td>
<td>$_________ /100</td>
</tr>
<tr>
<td>ALLOWANCE:</td>
<td>$ Fifty Thousand and 00/100________________________</td>
</tr>
<tr>
<td>BID TOTAL (INCLUDING ALLOWANCE)</td>
<td>$________________________</td>
</tr>
</tbody>
</table>

Each individual bid term shall be determined from visiting the work site, reviewing the drawings and specifications and all portions of the Project Documents, and shall include all items necessary to complete the work, including the assumption of...
all obligations, duties, and responsibilities necessary to the successful completion of the Project, and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the work, and the furnishing of tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform and complete the work, all as per the requirements of the Project Documents, whether or not expressly listed or designated.

2. It is understood that the DISTRICT reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process. Bidder agrees that this bid shall remain open and not be withdrawn for the period specified in the Information for Bidders.

3. The required bid security is attached.

4. The required list(s) of proposed subcontractors is attached hereto, and the undersigned represents and warrants that such list(s) is complete and in compliance with the Subletting and Subcontracting Fair Practices Act. Public Contract Code Sections 4100, et seq.

5. It is understood and agreed that if written Notice to Proceed is mailed, faxed, or delivered to the bidder, the bidder will execute and deliver to the DISTRICT the Agreement and will also furnish and deliver to the DISTRICT the Faithful Performance Bond and a separate Payment Bond as specified, and certificates and endorsements of insurance, the Workers’ Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, within 10 working days of the Notice to Proceed, or as otherwise requested in writing by the DISTRICT. It is understood that should bidder fail or refuse to return these documents as required by the DISTRICT, the bid security shall be forfeited to the DISTRICT. The bidder further agrees that the work shall be commenced by the bidder, if awarded the contract, on or before the fifth day after receiving the DISTRICT’s Notice to Proceed, and shall be completed by the bidder in the time specified by the DISTRICT.

6. Communications conveying Notice to Proceed, requests for additional information or other correspondence should be addressed to the bidder at the address stated below.

7. The name(s) of all persons interested in the bid as principals are as follows:

8. In submitting this bid, the bidder offers and agrees that if the bid is accepted, it will assign to DISTRICT 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. Section 15) or under the Cartwright Act (Business & Professions Code Section 16700, et seq.) arising from purchases of goods, materials, or services by the bidder for sale to the DISTRICT pursuant to the bid. Such assignment shall be made and become effective at the time the DISTRICT tenders final payment under the contract. (Public Contract Code Section 7103.5; Government Code Section 4450, 4451 and 4552).

9. The undersigned hereby warrants that the bidder has an appropriate license, License No. __________________________, Class B, at the time of the bid opening, that such license entitles bidder to provide the work, that such license will be in full force and effect throughout the duration of performance of this Project. Bidder shall be nonresponsive if the Bidder is not licensed as required by the DISTRICT at the time of the bid opening. Any and all subcontractors to be employed by the undersigned shall have appropriate licenses at the time of the bid opening.

10. The bidder hereby certifies that it is, and at all times during the performance of work hereunder shall be, in full compliance with the provisions of the Immigration Reform and Control Act of 1986 ("IRCA") in the hiring of its employees, and the bidder shall indemnify, hold harmless and defend the DISTRICT against any and all actions, proceedings, penalties or claims arising out of the bidder's failure to comply strictly with the IRCA.
11. It is understood and agreed that if requested by the DISTRICT, the bidder shall furnish a notarized financial statement, references, and other information required by the DISTRICT sufficiently comprehensive to permit an appraisal of bidder's ability to perform the Project.

12. The undersigned hereby warrants that all work, except work of a maintenance period, shall be completed within 45 consecutive calendar days from the date specified on the Notice to Proceed issued by the District. Time is of the essence. The undersigned agrees that failure to complete the work within the time set forth herein will result in the imposition of liquidated damages for each consecutive calendar day of delay in the amount of One Thousand Dollars ($1,000.00). (Government Code Section 53069.85)

13. The required non-collusion affidavit properly notarized is attached as required by Public Contract Code Section 7106. Bidder understands and agrees that failure to submit a completed and signed affidavit will render the bidder automatically nonresponsive.

14. It is understood and agreed that all change order requests must be submitted in the form set forth in the Project Documents and pursuant to Article 60 of the General Conditions. The amount of allowable charges submitted pursuant to a change order shall be limited to the charges allowed under Article 60 of the General Conditions. Indirect, consequential and incidental costs, project management costs, extended home office and field office overhead, administrative costs and profit and other charges not specifically authorized under Article 60 of the General Conditions will not be allowed.

15. The Information Required of Bidder form has been fully completed and is attached hereto.
The undersigned hereby declares that all of the representations of this bid are made under penalty of perjury under the laws of the State of California.

**Individual**

Name: __________________________________________

Signed by: _______________________________________

Print Name: _______________________________________

Date: ___________________________________________

Business Address: ___________________________________

Telephone: _______________________________________

**Partnership**

Name: __________________________________________

Signed by: _______________________________________

Print Name: _______________________________________

Date: ___________________________________________

Business Address: ___________________________________

Telephone: _______________________________________

**Corporation**

Name: __________________________________________

(a ________ Corporation¹)

____________________________________

¹ A corporation awarded the contract shall furnish evidence of its corporate existence and evidence that the officer signing the Agreement and bonds is duly authorized to do so.
Business Address: __________________________________________

________________________________________________________

Telephone: ________________________________________________

Signed by: ________________________, President, Date: __________

Print Name: ________________________ President

Signed by: ________________________, Secretary, Date: __________

Print Name: ________________________, Secretary

[Seal]
Joint Venturer

Name: ____________________________

Signed by: ________________________, Joint Venture

Print Name: ________________________

Date: ______________________________

Business Address: __________________________

_____________________________________

Telephone: ____________________________

Other Parties to

If an individual: __________________________

Joint Venture: __________________________

Signed by: ____________________________

Print Name: ____________________________

Date: ________________________________

Doing Business as: ______________________

Business Address: __________________________

_____________________________________

Telephone: ____________________________
If a Partnership: ________________________________

(Name)

Signed by: ________________________________, Partner

Print Name: ________________________________

Date: ________________________________

Business Address: ________________________________

________________________________________________

Telephone: ________________________________

If a Corporation: ________________________________

(a ______________ Corporation)

Signed By: ________________________________ Date: __________________

Print Name: ________________________________

Title: ________________________________

Date: ________________________________

Business Address: ________________________________

________________________________________________

Telephone: ________________________________
Bid Bond No.: _____

KNOW ALL PERSONS BY THESE PRESENT, that we_____________________________ as Principal, and ____________________ as Surety, a California admitted surety insurer, are held and firmly bound unto the South Orange County Community College District, hereinafter called the DISTRICT, in the sum of __________ __________ PERCENT (____ %) OF THE TOTAL AMOUNT OF THE BID of the Principal submitted to the said DISTRICT for the work described below for the payment of which sum in lawful money of the United States, well and truly to be made, we jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is such that whereas the Principal has submitted the accompanying bid dated __________. __________, for

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after said opening; and if the Principal is awarded the contract, and shall within the period specified therefor, or, if no period be specified, within 10 working days after the Notice to Proceed, or as otherwise requested in writing by the DISTRICT, enter into a written contract with the DISTRICT, in accordance with the bid as accepted and give bonds with good and sufficient surety or sureties, as may be required for the faithful performance and proper fulfillment of such contract and for the payment for labor and materials used for the performance of the contract, furnish certificates and endorsements evidencing the required insurance is in effect and furnish and deliver to the DISTRICT the Workers’ Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, then the above obligation shall be void and of no effect, otherwise the bond amount shall be forfeited to the DISTRICT.

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

In the event suit is brought upon this bond by the DISTRICT and judgment is recovered, the Surety shall pay all costs incurred by the DISTRICT in such suit, including reasonable attorney's fees to be fixed by the court.
IN WITNESS HEREOF, the parties have executed this bond under their several seals this ______ day of ______, 20____, the name and corporate seal of each corporate party being hereto affixed and duly signed by its undersigned authorized representative.

(Corporate Seal of Principal, if Corporation) _____________________________

Principal (Proper Name of Bidder)

By: _____________________________

Signature

______________________________

Print Name

______________________________

Title

(Corporate Seal of Surety) _____________________________

Surety

By: _____________________________

Signature

______________________________

Print Name

______________________________

Title

______________________________

Address

______________________________

Telephone No.

______________________________

Facsimile No.
DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 et. seq.) and any amendments thereof, each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the bidder (prime contractor) in or about the construction of the work or improvement to be performed under this contract or a subcontractor licensed by the State of California who, under subcontract to the bidder (prime contractor), specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent of the bidder's (prime contractor's) total bid and (b) the portion of the work which will be done by each subcontractor. The bidder (prime contractor) shall list only one subcontractor for each such portion as is defined by the bidder (prime contractor) in this bid.

If a bidder (prime contractor) fails to specify a subcontractor or if a bidder (prime contractor) specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the bidder's (prime contractor's) total bid, bidder shall be deemed to have agreed that bidder is fully qualified to perform that portion, and that bidder alone shall perform that portion. Violation of this requirement (including the procurement of a subcontractor for the Project if no subcontractor is specified) can result in the DISTRICT invoking the remedies of Public Contract Code Sections 4110 and 4111.

No bidder (prime contractor) whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the bidder's (prime contractor's) total bid as to which the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act. Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the bidder's (prime contractor's) total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, only after a finding reduced to writing as a public record of the DISTRICT awarding this contract setting forth the facts constituting the emergency or necessity.
Bidder agrees that within twenty-four (24) hours of the bid opening, Bidder shall provide the DISTRICT with the license number (if applicable), expiration date of license, complete address and telephone numbers of each listed subcontractor if such information is not available at the time of the bid opening.

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<tr>
<th>Type of Trade, Labor or Service</th>
<th>Name &amp; License # of Subcontractor, License Expiration Date (Indicate if a Disabled Veteran Business Enterprise)</th>
<th>Complete Address (Name of City is not sufficient) and Telephone No.</th>
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</table>
Dated:________________________

Name of Bidder

By:________________________________

(Signature of Bidder)

Print Name: ____________________________

Address________________________________

_______________________________________

_______________________________________

Telephone: _____________________________

FAX: _________________________________
NONCOLLUSION AFFIDAVIT

(Public Contract Code Section 7106)

State of California

                                           )

                                           )    ss.

County of ___________________________

                                           )

                                           )

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

______________________________

Signature of Bidder

NOTARY FOR NONCOLLUSION AFFIDAVIT

Subscribed and sworn to (or affirmed) before me this ______ day of ________, 20__.

______________________________

Signature of Notary

[SEAL OF NOTARY]

______________________________

Typed Name of Notary
WORKERS' COMPENSATION CERTIFICATE

Labor Code Section 3700.

"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 in one or more insurers duly authorized to write compensation insurance in this state.

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

(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."

I am aware of the provisions of Labor Code Section 3700 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 the Contractor

By: ______________________________________
Signature

________________________________________
Print Name

________________________________________
Title

________________________________________
Date

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

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the South Orange County Community College District (sometimes referred to hereinafter as "DISTRICT") has awarded to ______________________ (hereinafter designated as the "CONTRACTOR" or "Principal"), an agreement for the work described as follows: ______________________ (hereinafter referred to as the "Public Work"); and

WHEREAS, said CONTRACTOR is required to furnish a bond in connection with said Contract, and pursuant to California Civil Code Section 3247;

NOW, THEREFORE, We, ______________________, the undersigned CONTRACTOR, as Principal; and ___ ______________________, a corporation organized and existing under the laws of the State of ______________, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the South Orange County Community College District and to any and all persons, companies, or corporations entitled by law to file stop notices under California Civil Code Section 3181, or any person, company, or corporation entitled to make a claim on this bond, in the sum of ______________________ ______________________ Dollars ($___________________), said sum being not less than one hundred percent (100%) of the total amount payable by said DISTRICT under the terms of said Contract, for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code Section 3181; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code Section 13020 with respect to work and labor thereon of any kind, then said Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys’ fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code Sections 3247 et seq.

This bond shall inure to the benefit of any person named in Civil Code Section 3181 giving such person or his/her assigns a right of action in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, or specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefore; nor by any change or modification of any terms of payment or extension of time for payment pertaining or relating to any scheme or work of improvement herein above described; nor by any rescission or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons

Schools Legal Service of O.C.  
May 2002  
Bid Forms  
Page 24
for whose benefit such bond is given; and under no circumstances shall the Surety be released from liability to
those for whose benefit such bond has been given, by reason of any breach of contract between the DISTRICT and
the CONTRACTOR or on the part of any DISTRICT named in such bond; that the sole condition of recovery shall be
that the claimant is a person described in California Civil Code Sections 3110 and 3112, and who has not been paid
the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of
time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this_________________ day of _________
_______, 20_____.

PRINCIPAL/CONTRACTOR:

________________________________________________________

By: ____________________________________________________

SURETY:

________________________________________________________

By: ____________________________________________________

Attorney-in-Fact
IMPORTANT: THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code Section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety’s name must also appear on the Treasury Department’s most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety) 
(Name and Address of agent or representative for service for service of process in California)

Telephone: ________________________  Telephone: ________________________

STATE OF CALIFORNIA

\)
\)
\)

COUNTY OF

\)
\)
\)

On this ______ day of ______________, in the year __________, before me, __________________, a Notary Public in and for said State, personally appeared __________________, known to me to be the person whose name is subscribed within the instrument as the Attorney-in-Fact of the __________________ (Surety) and acknowledged to me that he subscribed the name of the __________________ (Surety) thereto and his own name as Attorney-in-Fact.

__________________________
Notary Public in and for said State

Commission expires: ________________________

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.
CONTRACT PERFORMANCE BOND (CALIFORNIA PUBLIC WORK)

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the South Orange County Community College District (sometimes referred to hereinafter as “DISTRICT”) has awarded to ________________________________ (hereinafter designated as the “CONTRACTOR” or “Principal”), an agreement for the work described as follows: ____________________________ (hereinafter referred to as the “Public Work”); and

WHEREAS, the work to be performed by the CONTRACTOR is more particularly set forth in that certain contract for said Public Work dated ____________________________, (hereinafter referred to as the “Contract”), which Contract is incorporated herein by this reference; and

WHEREAS, the CONTRACTOR is required by said Contract to perform the terms thereof and to provide a bond both for the performance and guaranty thereof.

NOW, THEREFORE, we, ____________________________, the undersigned CONTRACTOR, as Principal, and ____________________________, a corporation organized and existing under the laws of the State of ____________________________, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the South Orange County Community College District in the sum of ____________________________ Dollars ($______________), said sum being not less than one hundred percent (100%) of the total amount payable by said DISTRICT under the terms of said Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the bounded CONTRACTOR, his or her heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in said Contract and any alteration thereof made as therein provided, on his or her part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill guarantees of all materials and workmanship; and indemnify, defend and save harmless the DISTRICT, its officers and agents, as stipulated in said Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any change, extension of time, alteration in or addition to the terms of the contract or to the work to be performed there under or the specifications accompanying the same, nor by any change or modification to any terms of payment or extension of time for any payment pertaining or relating to any scheme of work of improvement under the contract. Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any overpayment or underpayment by the DISTRICT that is based upon estimates approved by the Architect. The Surety stipulates and agrees that none of the aforementioned changes, modifications, alterations, additions, extension of time or actions shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, modifications, alterations, additions or extension of time to the terms of the contract, or to the work, or the specifications as well notice of any other actions that result in the foregoing.
As a condition precedent to the satisfactory completion of the contract, the above obligation shall hold good for a period of One (1) year(s) after the acceptance of the work by DISTRICT, during which time if Contractor/Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the DISTRICT from loss or damage made evident during the period of One (1) year(s) from the date of completion of the work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. The obligation of Surety hereunder shall continue so long as any obligation of Contractor remains.

Whenever Principal shall be, and is declared by the DISTRICT to be, in default under the Contract, the Surety shall promptly either remedy the default, or shall promptly complete the Contract through its agents or independent contractors, subject to acceptance and approval of such agents or independent contractors by DISTRICT 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 warranties, guarantees and the payment of liquidated damages; or, at DISTRICT’s sole discretion and election, Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by DISTRICT of the lowest responsible bidder, arrange for a contract between such bidder and the DISTRICT and make available as Work progresses (even though there should be a default or succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the “balance of the Contract price” (as hereinafter defined), and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term “balance of the Contract price,” as used in this paragraph, shall mean the total amount payable to Principal by the DISTRICT under the Contract and any modifications thereto, less the amount previously paid by the DISTRICT to the Principal, less any withholdings by the DISTRICT allowed under the Contract.

Surety expressly agrees that the DISTRICT may reject any agent or contractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal. Unless otherwise agreed by DISTRICT, in its sole discretion, Surety shall not utilize Principal in completing the Contract nor shall Surety accept a bid from Principal for completion of the work in the event of default by the Principal.

No final settlement between the DISTRICT and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

CONTRACTOR and Surety agree that if the DISTRICT is required to engage the services of an attorney in connection with enforcement of the bond, CONTRACTOR and Surety shall pay DISTRICT’s reasonable attorneys’ fees incurred, with or without suit, in addition to the above sum.

In the event suit is brought upon this bond by the DISTRICT and judgment is recovered, the Surety shall pay all costs incurred by the DISTRICT in such suit, including reasonable attorneys’ fees to be fixed by the Court.
IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of ____________, 20__.

PRINCIPAL/CONTRACTOR:

__________________________________________

By: _______________________________________

SURETY:

__________________________________________

By: _______________________________________

Attorney-in-Fact

The rate of premium on this bond is __________________________ per thousand.

The total amount of premium charged: $___________________________ (This must be filled in by a corporate surety).
IMPORTANT: THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code Section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety’s name must also appear on the Treasury Department’s most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)  (Name and Address of agent or representative for service for service of process in California)

______________________________  ________________________________

______________________________  ________________________________

Telephone: ________________________  Telephone: ________________________

STATE OF CALIFORNIA  )
COUNTY OF  )

On this __________ day of __________, in the year __________, before me, __________________________, a Notary Public in and for said State, personally appeared __________________________, known to me to be the person whose name is subscribed within the instrument as the Attorney-in-Fact of the (Surety) and acknowledged to me that he subscribed the name of the (Surety) thereto and his own name as Attorney-in-Fact.

______________________________

Notary Public in and for said State

Commission expires: ________________________

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.
AGREEMENT

THIS AGREEMENT, dated the ______ day of _____________, 20____, in the County of Orange, State of California, is by and between South Orange County Community College District, (hereinafter referred to as "DISTRICT"), and ____________________________________________, (hereinafter referred to as "CONTRACTOR").

The DISTRICT and the CONTRACTOR, for the consideration stated herein, agree as follows:

1. CONTRACTOR agrees to complete the Project known as __________________________ according to all the terms and conditions set forth in the Project Documents, including but not limited to the Notice Calling For Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractors, Information Required of Bidder, all prequalification forms submitted pursuant to Public Contract Code Section 20111.5, if any, Non-collusion Affidavit, Workers' Compensation Certificate, Faithful Performance Bond, Payment Bond, Escrow Agreement, if applicable, Drug-Free Workplace Certification, Change Orders, Shop Drawing Transmittals, Insurance Certificates and Endorsements, Guarantees, Contractor's Certificate Regarding Non-Asbestos Containing Materials, Disabled Veteran Business Enterprises Certification, if applicable, General Conditions, Supplemental Conditions, if any, Special Conditions, if any, Drawings, Specifications, and all modifications, addenda and amendments thereto by this reference incorporated herein. The Project Documents are complementary, and what is called for by any one shall be as binding as if called for by all.

2. CONTRACTOR shall perform within the time set forth in Paragraph 4 of this Agreement everything required to be performed, and shall provide, furnish and pay for all the labor, materials, necessary tools, expendable equipment, and all taxes, utility and transportation services required for construction of the Project. All of said work shall be performed and completed in a good workmanlike manner in strict accordance with the drawings, specifications and all provisions of this Agreement as hereinafter defined and in accordance with applicable laws, codes, regulations, ordinances and any other legal requirements governing the Project. The CONTRACTOR shall be liable to the DISTRICT for any damages arising as a result of a failure to fully comply with this obligation, and the CONTRACTOR shall not be excused with respect to any failure to so comply by any act or omission of the Architect, Engineer, Inspector, Division of State Architect, or representative of any of them, unless such act or omission actually prevents the CONTRACTOR from fully complying with the requirements of the Project Documents, and unless the CONTRACTOR protests at the time of such alleged prevention that the act or omission is preventing the CONTRACTOR from fully complying with the Project Documents. Such protest shall not be effective unless reduced to writing and filed with the DISTRICT within three (3) working days of the date of occurrence of the act or omission preventing the CONTRACTOR from fully complying with the Project Documents.

3. DISTRICT shall pay to the CONTRACTOR, as full consideration for the faithful performance of this Agreement, subject to any additions or deductions as provided in the Project Documents, the sum of ________________ Dollars ($__________) _______.

4. The work shall be commenced on or before the _____________ (_____) day after receiving the DISTRICT'S Notice to Proceed and shall be completed within _______________ (_____ ) consecutive calendar days from the date specified in the Notice to Proceed.

5. Time is of the essence. If the work is not completed in accordance with Paragraph 4 above, it is understood that the DISTRICT will suffer damage. It being impractical and infeasible to determine the amount of
actual damage, in accordance with Government Code Section 53069.85, it is agreed that CONTRACTOR shall pay to DISTRICT as fixed and liquidated damages, and not as a penalty, the sum of _______________ Dollars ($______________) for each calendar day of delay until work is completed and accepted. Time extensions may be granted by the DISTRICT as provided in Article 64 of the General Conditions. Liquidated damages shall be imposed as set forth in Article 64 of the General Conditions.

6. Termination for Cause or Non-appropriation. In the event CONTRACTOR defaults in the performance of the Agreement as set forth in General Conditions Article 13(a) or if there is a non-appropriation of funds or insufficient funds as set forth in General Conditions Article 13(d), then this Agreement shall terminate or be suspended as set forth in General Conditions Article 13.

Termination for Convenience. DISTRICT has discretion to terminate this Agreement at any time and require CONTRACTOR to cease all work on the Project by providing CONTRACTOR written notice of termination specifying the desired date of termination. Upon receipt of written notice from DISTRICT of such termination for DISTRICT’s convenience, CONTRACTOR shall:

(i) Cease operations as directed by DISTRICT in the notice;

(ii) Take any actions necessary, or that DISTRICT may direct, for the protection and preservation of the work; and

(iii) Not terminate any insurance provisions required by the Project Documents.

In case of such termination for DISTRICT’s convenience, CONTRACTOR shall be entitled to receive payment from DISTRICT for work satisfactorily executed and for proven loss with respect to materials, equipment, and tools, including overhead and profit for that portion of the work completed. In the case of Termination for Convenience, DISTRICT shall have the right to accept assignment of subcontractors. The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the DISTRICT.

7. Hold Harmless and Indemnification. To the fullest extent permitted by law, the CONTRACTOR, at the CONTRACTOR’s sole cost and expense, agrees to fully defend, indemnify and hold harmless, the DISTRICT, including but not limited to any of its governing board members, officers, employees, Construction Manager, Architect, and all other Agents and Representatives, from and against any and all claims, actions, demands, costs, judgments, liens, penalties, liabilities, damages, losses, anticipated losses of revenues, and expenses, including any fees of accountants, attorneys or other professionals, arising out of, in connection with, resulting from or related to, or claimed to be arising out of, in connection with, resulting from or related to any act or omission by the CONTRACTOR or any of its officers, agents, employees, subcontractors, sub-subcontractors, any person performing any of the work pursuant to a direct or indirect contract with the CONTRACTOR or individual entities comprising the CONTRACTOR, in connection with or relating to, or claimed to be in connection with or relating to the work, this Agreement, or the Project, including but not limited to any costs or liabilities arising out of or in connection with:

(a) failure to comply with any applicable law, statute, code, ordinance, regulation, permit or orders;

(b) any misrepresentation, misstatement or omission with respect to any statement made in the Project Documents or any document furnished by the CONTRACTOR in connection therewith;

(c) any breach of duty, obligation or requirement under the Project Documents;

(d) any failure to coordinate the work of other contractors;

(e) any failure to provide notice to any party as required under the Project Documents;
(f) any failure to act in such a manner as to protect the DISTRICT and the Project from loss, cost, expense or liability; or

(g) any failure to protect the property of any utility company or property owner.

This indemnity shall survive termination of the contract or final payment thereunder. This indemnity is in addition to any other rights or remedies which the DISTRICT may have under the law or under the Project Documents. In the event of any claim or demand made against any party which is entitled to be indemnified hereunder, the DISTRICT may in its sole discretion reserve, retain or apply any monies due to the CONTRACTOR under the Project Documents for the purpose of resolving such claims; provided, however, that the DISTRICT may release such funds if the CONTRACTOR provides the DISTRICT with reasonable assurance of protection of the DISTRICT’s interests. The DISTRICT shall in its sole discretion determine whether such assurances are reasonable.

8. CONTRACTOR shall take out, prior to commencing the work, and maintain, during the life of this Agreement, and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain the insurance coverages set forth below and in Articles 16, 17, 18 and 19 of the General Conditions. CONTRACTOR agrees to provide all evidences of coverage required by DISTRICT including certificates of insurance and endorsements.

Public Liability Insurance for injuries including accidental death, to any one person in an amount not less than $2,000,000

Subcontractors of every tier $1,000,000

and

Subject to the same limit for each person on account of one accident, in an amount not less than $2,000,000

Subcontractors of every tier $1,000,000

Property Damage Insurance in an amount not less than $2,000,000

Subcontractors of every tier $1,000,000

Course of Construction Insurance without exclusion or limitation in an amount not less than $2,000,000

Excess Liability Insurance (Contractor only) $2,000,000

Insurance Covering Special Hazards: The following special hazards shall be covered by rider or riders to above-mentioned public liability insurance or property damage insurance policy or policies of insurance, or by special policies of insurance in amounts as follows:

Automotive and truck where operated in amounts as above

Material hoist where used in amounts as above
Waiver of Subrogation

Contractor waives (to the extent permitted by law) any right to recover against the District, and its respective elected officials, officers, employees, agents, and representatives for damages to the Work, any part thereof, or any and all claims arising by reason of any of the foregoing, but only to the extent that such damages and/or claims are covered by property insurance and only to the extent of such coverage (which shall exclude deductible amounts) actually carried by the District.

The provisions of this section are intended to restrict each party to recovery against insurance carriers only to the extent of such coverage and waive fully and for the benefit of each, any rights and/or claims which might give rise to a right of subrogation in any insurance carrier. The District and the Contractor shall each obtain in all policies of insurance carried by either of them, a waiver by the insurance companies there under of all rights of recovery by way of subrogation for any damages or claims covered by the insurance.

Additional Insured Endorsement Requirements.

The Contractor shall name, on any policy of insurance required the District, their officers, employees, Construction Manager, Architect, and all other Agents and Representatives as additional insureds. Subcontractors shall name the Contractor, the District, their officers, employees, Construction Manager, Architect, and all other Agents and Representatives as additional insureds. The Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The insurance provided by the Contractor must be designated in the policy as primary to any insurance obtained by the District. The amount of the insurer’s liability shall not be reduced by the existence of such other insurance.

9. Public Contract Code Section 22300 permits the substitution of securities for any retention monies withheld by the DISTRICT to ensure performance under this Agreement. At the request and expense of the CONTRACTOR, securities equivalent to the monies withheld shall be deposited with the DISTRICT, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the CONTRACTOR. The DISTRICT retains the sole discretion to approve the bank selected by the CONTRACTOR to serve as escrow agent. Upon satisfactory completion of the Agreement, the securities shall be returned to the CONTRACTOR. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the CONTRACTOR may request DISTRICT to make payment of earned retention monies directly to the escrow agent at the expense of the CONTRACTOR. Also at the CONTRACTOR's expense, the CONTRACTOR may direct investment of the payments into securities, and the CONTRACTOR shall receive interest earned on such investment upon the same conditions as provided for securities deposited by CONTRACTOR. Upon satisfactory completion of the Agreement, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300.

10. If CONTRACTOR is a corporation, the undersigned hereby represents and warrants that the corporation is duly incorporated and in good standing in the State of________________________, and that________________________, whose title is________________________, is authorized to act for and bind the corporation.

11. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and
if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

12. This Agreement constitutes the entire agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties and pursuant to action of the Governing Board of the District. This Agreement shall be governed by the laws of the State of California.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

DISTRICT

By: ________________________________
   Signature

Print Name

Title

Contractor's License No.

Tax ID/Social Security No.

(Corporate Seal of Contractor, if corporation)

CONTRACTOR

By: ________________________________
   Signature

Print Name

Title

Contractor's License No.

Tax ID/Social Security No.

(Corporate Seal of Contractor, if corporation)
This Escrow Agreement is made and entered into, as of ______________________, 20____, by and between South Orange County Community College District, whose address is 28000 Marguerite Parkway, Mission Viejo, CA 92692 hereinafter called "DISTRICT;" ________________________________, whose address is ________________________________, hereinafter called "Contractor;" and, ________________________________, whose address is ________________________________, hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the DISTRICT, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by DISTRICT pursuant to the Agreement entered into between the DISTRICT and Contractor for __________ in the amount of __________________________, dated __________________________, referred to as the "Agreement"). Alternatively, on written request of the Contractor, the DISTRICT shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for retention earnings, the Escrow Agent shall notify the DISTRICT within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Agreement between the DISTRICT and Contractor. Securities shall be held in the name of DISTRICT, and shall designate the Contractor as the beneficial owner.

(2) The DISTRICT shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the DISTRICT makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the DISTRICT pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the DISTRICT. These expenses and payment terms shall be determined by the DISTRICT, Contractor and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the DISTRICT.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the DISTRICT to the Escrow Agent that DISTRICT consents to the withdrawal of the amount sought to be withdrawn by Contractor.
(7) The DISTRICT shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days' written notice to the Escrow Agent from the DISTRICT of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the DISTRICT.

(8) Upon receipt of written notification from the DISTRICT certifying that the Agreement is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Agreement, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the DISTRICT and the Contractor pursuant to Sections (5) to (8), inclusive, of this Escrow Agreement and the DISTRICT and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the DISTRICT and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of DISTRICT: On behalf of Contractor:

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On behalf of Escrow Agent:

Title

Name

Signature

Address

At the time the Escrow Account is opened, the DISTRICT and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Escrow Agreement.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

DISTRICT

Title

Name

Signature

CONTRACTOR

Title

Name

Signature

Escrow Agent

Title

Name

Signature
GUARANTEE

Guarantee for ___________________. We hereby guarantee that the ___________________, which we have installed in ____________________, has been done in accordance with the Project Documents and that the work as installed will fulfill the requirements included in the Project Documents. The undersigned agrees to repair or replace any or all of such work, together with any other adjacent work which may be displaced in connection with such repair or replacement, that may prove to be defective in workmanship or material within a period of one (1) year from the date of completion of the Project, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of the undersigned's or undersigned surety's failure to commence and pursue with diligence said repairs or replacements within ten (10) calendar days after being notified in writing by the DISTRICT, the undersigned authorizes the DISTRICT to proceed to have said defects repaired or replaced and made good at the expense of the undersigned and surety who hereby agree to pay the costs and charges therefore immediately upon demand. (General Conditions Article 47(d))

________________________________________
Name of Contractor

By: ______________________________________
Signature of Contractor

________________________________________
Print Name

________________________________________
Title

Contractor shall provide copy of this Guarantee to Contractor's surety.
Guarantee (continued)

Name of Subcontractor
(if work performed by subcontractor)

By: __________________________
Signature of Subcontractor

____________
Print Name

____________
Title

Representatives to be contacted for service:

Name: __________________________

Address: __________________________

______________________________

Telephone: ________________________
The procedure governing shop drawing submittals is contained in the General Conditions. In addition, all Supplemental Conditions, Special Conditions and Specifications must be followed by the CONTRACTOR.

Failure to comply with all requirements will constitute grounds for return of the shop drawing for proper resubmittal. CONTRACTOR shall sequentially number each submittal.

Date: ____________________________  Submittal No.: ____________________________

From: ____________________________  To: ____________________________

Project Name: ____________________________

This is a(n):  
Original  
Submittal  
2nd Submittal  
[ ] Submittal  

Subject of Submittal:  
Equipment Designation:  
Specification Section(s):  

Complete either (a) or (b)  

Check One:  

(a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions).

(b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (List deviations on an attached sheet).

(continued on next page)
The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings that does not conform to the Project Documents. This shop drawing has been coordinated with all other shop drawings received to date by CONTRACTOR and this duty of coordination has not been delegated to subcontractors, material suppliers, the ARCHITECT, or the engineers on this Project.

Signature of Contractor or Supplier
DRUG-FREE WORKPLACE CERTIFICATION

This Drug-Free Workplace Certification is required pursuant to Government Code Sections 8350, et seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract for the procurement of any property or services from any State agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract awarded by a State agency may be subject to suspension of payments or termination of the contract and the contractor may be subject to debarment from future contracting, if the state agency determines that specified acts have occurred.

Pursuant to Government Code Section 8355, every person or organization awarded a contract from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

   a) publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition;

   b) establishing a drug-free awareness program to inform employees about all of the following:

      1) the dangers of drug abuse in the workplace;

      2) the person's or organization's policy of maintaining a drug-free workplace;

      3) the availability of drug counseling, rehabilitation and employee-assistance programs;

      4) the penalties that may be imposed upon employees for drug abuse violations;

   c) requiring that each employee engaged in the performance of the contract be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code Section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the contract be given a copy of the statement required by Section 8355(a) and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the DISTRICT determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of Section 8355, that the contract awarded herein is subject to suspension of payments, termination, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of Section 8350, et seq.
I acknowledge that I am aware of the provisions of Government Code Section 8350, et seq. and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

NAME OF CONTRACTOR

____________________________________

Signature

____________________________________

Print Name

____________________________________

Title

____________________________________

Date
CHANGE ORDER NO. ___________ (ADDITIVE)

PROJECT: ________________________________________________________________

TO: ___________________________________________________________________

You are hereby directed to provide the extra work necessary to comply with this Change Order.

DESCRIPTION OF CHANGE: _______________________________________________

_________________________________________________________

COST (This cost shall not be exceeded.):

Original contract price:  $ __________________________
Change Order amount:  $ __________________________
New contract price:  $ __________________________

TIME FOR COMPLETION:

Original completion date:  __________________________
Time for completion of
Change Order:  __________________________
New completion date:  __________________________

Contractor agrees to perform the above-described work in accordance with the above terms and in compliance with applicable sections of the Project Documents. The amount of the charges under this Change Order is limited to the charges allowed under Article 60 of the General Conditions. The adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order shall constitute the entire compensation and/or adjustment in the contract time due Contractor arising out of the change in the work covered by this Change Order, unless otherwise provided in this Change Order.

No additions or deletions to this Change Order shall be allowed, except with written permission of District. Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising from this Change Order.

(continued on next page)
This Change Order is hereby agreed to, accepted and approved.

CONTRACTOR

By: ________________________________
    Signature

Print Name

Title

Date

ARCHITECT

By: ________________________________
    Signature

Print Name

Title

Date

DISTRICT

By: ________________________________
    Signature

Print Name

Title

Date
CHANGE ORDER NO. __________________ (DEDUCTIVE)

PROJECT: ____________________________

TO: __________________________________

You are hereby directed to comply with this Change Order.

DESCRIPTION OF CHANGE: ____________________________

____________________________________________________________________

____________________________________________________________________

COST (This cost shall be deleted.):

   Original contract price: $ __________

   Change Order amount: $ __________

   New contract price: $ __________

TIME FOR COMPLETION:

   Original completion date: __________

   Time for completion of Change Order: __________

   New completion date: __________

Contractor agrees to deduct the above-described work in accordance with the above terms and in compliance with applicable sections of the Project Documents. Contractor agrees to the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order.

No additions or deletions to this Change Order shall be allowed, except with written permission of District. Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising from this Change Order.

(continued on next page)
This Change Order is hereby agreed to, accepted and approved.

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CONTRACTOR’S CERTIFICATE REGARDING NON-ASBESTOS CONTAINING MATERIALS

Per Article 70 of the General Conditions.

Certification for ___________________. We hereby certify that no Asbestos, or Asbestos Containing Materials shall be used in this Project or in any tools, devices, clothing, or equipment used to affect the ____________ which we have installed in the South Orange County Community College District under Project/Bid No. ____________.

(a) The Contractor further certifies that he/she has instructed his/her employees with respect to the above mentioned standards, hazards, risks and liabilities.
(b) Asbestos and/or asbestos containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite and actinolite.
(c) Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos containing material.
(d) Any disputes involving the question of whether or not material contains asbestos shall be settled by electron microscopy. The costs of any such tests shall be paid by the Contractor if the material is found to contain asbestos.
(e) All work or materials found to contain asbestos or work or material installed with asbestos containing equipment will be immediately rejected and this work will be removed at no additional cost to the District.

__________________________________________
Date

__________________________________________
Name of Contractor

By: _______________________________________

Signature

__________________________________________
Print Name

__________________________________________
Title
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*Schools Legal Service of O.C.*

May 2002
ARTICLE 1. DEFINITIONS

(a) Action of the Governing Board is a vote of a majority of the members in a lawful meeting.

(b) Addenda are the changes in plans, specifications, drawings, and/or Project Documents which have been authorized in writing by the DISTRICT or ARCHITECT, and which alter, explain, or clarify the Project Documents prior to the bid deadline.

(c) Approval means written authorization by ARCHITECT or DISTRICT.

(d) Agreement includes collectively all Project Documents.

(e) Project Documents includes collectively, to wit: Notice Calling for Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractor form, Information Required of Bidder, all prequalification forms submitted pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Affidavit, Workers’ Compensation Certificate, Faithful Performance Bond, Payment Bond, Agreement, Escrow Agreement, Drug-Free Workplace Certification, Change Order forms, Shop Drawing Transmittals form, Insurance Certificates and Endorsements, Guarantee form, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, General Conditions, Supplemental Conditions, if any, Special Conditions, if any, Drawings, Specifications, and all modifications, addenda and amendments thereto. The Project Documents are complementary, and what is called for by any one shall be as binding as if called for by all.

(f) CONTRACTOR or DISTRICT are those mentioned as such in the Agreement. They are treated throughout the Project Documents as if they are of singular number and neuter gender.

(g) DISTRICT is the Governing Board or its duly authorized representative.

(h) Locality in which the work is performed means the county and city in which the work is done.

(i) Project is the planned undertaking as provided for in the Project Documents by DISTRICT and CONTRACTOR.

(j) Provide shall include "provide complete in place," that is, "furnish and install."

(k) Safety Orders are those issued by the Division of Industrial Safety and OSHA safety and health standards for construction.

(l) Standards, Rules, and Regulations referred to are recognized printed standards and shall be considered as one and a part of these specifications within limits specified.
(m) **Subcontractor**, as used herein, includes those having a direct contractual relationship with CONTRACTOR and one who furnishes material worked to a special design according to plans, drawings, and specifications, but does not include one who merely furnishes material not so worked.

(n) **Surety** is the person, firm, or corporation that executes as a California admitted surety insurer, the CONTRACTOR's Bid Security, faithful performance bond and payment bond.

(o) **Work** of the CONTRACTOR or subcontractor includes labor or materials (including, without limitation, equipment and appliances) or both, incorporated in, or to be incorporated in the Project.

(p) **Workers** includes laborer, worker, or mechanic.

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**ARTICLE 2. STATUS OF CONTRACTOR**

(a) CONTRACTOR is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it performs the services required of it by the terms of the Project Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the DISTRICT and CONTRACTOR or any of CONTRACTOR's agents or employees. CONTRACTOR assumes exclusively the responsibility for the acts of its employees as they relate to the services to be provided during the course and scope of their employment. CONTRACTOR, its agents and employees shall not be entitled to any rights or privileges of DISTRICT employees and shall not be considered in any manner to be DISTRICT employees. DISTRICT shall be permitted to monitor the activities of the CONTRACTOR to determine compliance with the terms of the Project Documents.

(b) Contractors are required by law to be licensed and regulated by the Contractors' State License Board. Any CONTRACTOR not so licensed is subject to penalties under the law, and the contract will be considered void pursuant to Section 7028.7 of the Business and Professions Code. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, 9821 Business Park Drive, P. O. Box 26000, Sacramento, CA 95826.

(c) Contractor shall possess and maintain all state Contractor’s license and local business licenses as required for the full duration of the project construction period.

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**ARTICLE 3. CHANGE IN NAME AND NATURE OF CONTRACTOR’S LEGAL ENTITY**

Before CONTRACTOR makes any change in the name or legal nature of the CONTRACTOR's entity, CONTRACTOR shall first notify the DISTRICT in writing and cooperate with DISTRICT in making such changes as the DISTRICT may request in the Project Documents.

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**ARTICLE 4. CONTRACTOR’S SUPERVISION, PROSECUTION AND PROGRESS**

(a) During progress of the work, CONTRACTOR shall keep on the work site a competent superintendent satisfactory to DISTRICT. Before commencing the work herein, CONTRACTOR shall give written notice to
DISTRICT and ARCHITECT of the name, contact information for access during works hours and after hours in the event of an emergency, qualifications and experience of such superintendent. If Superintendent is found unsatisfactory by DISTRICT, CONTRACTOR shall replace the Superintendent with one acceptable to the DISTRICT. Superintendent shall not be changed except with written consent of DISTRICT, unless a superintendent proves to be unsatisfactory to CONTRACTOR and ceases to be in its employ, in which case, CONTRACTOR shall notify DISTRICT and ARCHITECT in writing and replace said Superintendent with one acceptable to the DISTRICT. Superintendent shall represent CONTRACTOR and all directions given to Superintendent shall be as binding as if given to CONTRACTOR.

(b) CONTRACTOR shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the work in accordance with the Project Documents. CONTRACTOR shall carefully study and compare all plans, drawings, specifications, and other instructions and shall at once report to ARCHITECT any error, inconsistency or omission which CONTRACTOR or its employees may discover. The CONTRACTOR represents itself to DISTRICT as a skilled, knowledgeable, and experienced CONTRACTOR. The CONTRACTOR shall carefully study and compare the Project Documents with each other, and shall at once report to the ARCHITECT any errors, inconsistencies, or omissions discovered. The CONTRACTOR shall be liable to the DISTRICT for damage resulting from errors, inconsistencies, or omissions in the Project Documents that the CONTRACTOR recognized and which CONTRACTOR knowingly failed to report and which a similarly skilled, knowledgeable, and experienced contractor would have discovered.

(c) The CONTRACTOR shall verify all indicated dimensions before ordering materials or equipment, or before performing work. The CONTRACTOR shall take field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the CONTRACTOR with the Project Documents before commencing work. Errors, inconsistencies or omissions discovered shall be reported to the DISTRICT at once. Upon commencement of any item of work, the CONTRACTOR shall be responsible for dimensions related to such item of work and shall make any corrections necessary to make work properly fit at no additional cost to DISTRICT. This responsibility for verification of dimensions is a non-delegable duty and may not be delegated to subcontractors or agents.

(d) Omissions from the plans, drawings or specifications, or the misdescription of details of work which are manifestly necessary to carry out the intent of the plans, drawings and specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or misdescribed work, but they shall be performed as if fully and correctly set forth and described in the plans, drawings and specifications.

(e) The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The CONTRACTOR shall be responsible to see that the finished work complies accurately with the Project Documents.

ARTICLE 5. SUBCONTRACTORS

(a) CONTRACTOR agrees to bind every subcontractor by terms of the Project Documents as far as such terms are applicable to subcontractor's work. If CONTRACTOR shall subcontract any part of the work, CONTRACTOR shall be as fully responsible to DISTRICT for acts and omissions of any subcontractor and of persons either directly or indirectly employed by any subcontractor, as it is for acts and omissions of persons
directly employed by CONTRACTOR. Nothing contained in Project Documents shall create any contractual relation between any subcontractor and DISTRICT, nor shall the contract documents be construed to be for the benefit of any subcontractor.

(b) DISTRICT’s consent to any subcontractor shall not in any way relieve CONTRACTOR of any obligations under the Project Documents and no such consent shall be deemed to waive any provision of any Project Document.

(c) CONTRACTOR must submit with its bid, a Designation of Subcontractors pursuant to the Subletting and Subcontracting Fair Practices Act. If CONTRACTOR specifies more than one subcontractor for the same portion of work or fails to specify a subcontractor, and such portion of the work exceeds one-half of one percent of the total bid, CONTRACTOR agrees that it is fully qualified to perform and shall perform such work itself, unless CONTRACTOR provides for substitution or addition of subcontractors. Substitution or addition of subcontractors shall be permitted only as authorized under the Subletting and Subcontracting Fair Practices Act, Public Contract Code Section 4100, et seq.

(d) In accordance with Business and Professions Code Section 7059, if CONTRACTOR is designated as a "specialty contractor" (as defined in Section 7058 of the Public Contract Code), all of the work to be performed outside of the CONTRACTOR’s license specialty shall be performed by a licensed subcontractor in compliance with the Subletting and Subcontracting Fair Practices Act, Public Contract Code Section 4100, et seq.

(e) A copy of each subcontract, if in writing, or, if not in writing, then a written statement signed by the CONTRACTOR giving the name of the subcontractor and the terms and conditions of such subcontract, shall be filed with the DISTRICT before the subcontractor begins work. Each subcontract shall contain a reference to the Agreement between the DISTRICT and the CONTRACTOR and the terms of that Agreement and all parts of the Project Documents shall be made a part of such subcontract insofar as applicable to the work covered thereby. Each subcontract will provide for termination in accordance with Article 13 of these General Conditions. Each subcontract shall provide for its annulment by the CONTRACTOR at the order of the ARCHITECT if in the ARCHITECT’s opinion the subcontractor fails to comply with the requirements of the Project Documents insofar as the same may be applicable to this work. Nothing herein contained shall relieve the CONTRACTOR of any liability or obligation hereunder.

ARTICLE 6. PROHIBITED INTERESTS

No official of DISTRICT who is authorized in such capacity and on behalf of DISTRICT 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 interested financially in this Project or in any part thereof. No officer, employee, architect, attorney, engineer or inspector of or for DISTRICT who is authorized in such capacity and on behalf of DISTRICT to exercise any executive, supervisory or other similar functions in connection with construction of Project shall become directly or indirectly interested financially in this Project or in any part thereof. CONTRACTOR shall receive no compensation and shall repay DISTRICT for any compensation received by CONTRACTOR hereunder, should CONTRACTOR aid, abet or knowingly participate in violation of this Article 6.
ARTICLE 7. DISTRICT'S INSPECTOR

(a) One or more Inspector(s), including special inspectors, as required, will be employed by DISTRICT and will be assigned to the Project.

(b) No work shall be performed by the CONTRACTOR solely upon the instructions or comments by the Inspector. The Inspector has no authority to interpret the Project Documents or order extra work and any extra work performed without the written instruction of the DISTRICT shall be at CONTRACTOR’s sole cost and expense and there will be no delay damages incurred by DISTRICT for such work.

(c) No work shall be carried on except with the knowledge and under the inspection of said Inspector(s). He/she shall have free access to any or all parts of work at any time. CONTRACTOR shall furnish Inspector reasonable opportunities for obtaining such information as may be necessary to keep Inspector fully informed respecting progress and manner of work and character of materials. Inspection of work shall not relieve CONTRACTOR from any obligation to fulfill the Project Documents. Inspector or ARCHITECT shall have authority to stop work whenever provisions of Project Documents are not being complied with and such noncompliance is discovered. CONTRACTOR shall instruct its employees accordingly.

(d) CONTRACTOR understands and agrees that the Inspector for the Project may also serve concurrently as inspector for other DISTRICT projects and may not therefore be available on site during the entire work day. It shall be the responsibility of CONTRACTOR to notify the Inspector not less than twenty-four (24) hours in advance of materials and equipment deliveries and required inspections specific to the Project inspector.

ARTICLE 8. ARCHITECT'S STATUS

(a) The ARCHITECT shall be the DISTRICT’s representative during construction and shall observe the progress and quality of the work on behalf of the DISTRICT. ARCHITECT shall have the authority to act on behalf of DISTRICT only to the extent expressly provided in the Project Documents. ARCHITECT shall have authority to stop work whenever such stoppage may be necessary in ARCHITECT’S reasonable opinion to ensure the proper execution of the Project Documents.

(b) The ARCHITECT shall be, in the first instance, the judge of the performance of the work. ARCHITECT shall exercise authority under the Project Documents to enforce CONTRACTOR’s faithful performance.

(c) The ARCHITECT shall have all authority and responsibility established by law. The ARCHITECT has the authority to enforce compliance with the Project Documents and the CONTRACTOR shall promptly comply with instructions from the ARCHITECT or an authorized representative of the ARCHITECT.

(d) On all questions related to the quantities, the acceptability of material, equipment or workmanship, the execution, progress or sequence of work, the interpretation of plans, specifications or drawings, and the acceptable performance of the CONTRACTOR pursuant to the decision of the ARCHITECT shall govern and shall be precedent to any payment unless otherwise ordered by the Governing Board. The progress and
completion of the work shall not be impaired or delayed by virtue of any question or dispute arising out of or related to the foregoing matters and the instructions of the ARCHITECT relating thereto.

(e) General supervision and direction of the work by the ARCHITECT shall in no way imply that the ARCHITECT or his or her representatives are in any way responsible for the safety of the CONTRACTOR or its employees or that the ARCHITECT or his or her representatives will maintain supervision over the CONTRACTOR's construction methods or personnel other than to ensure that the quality of the finished work is in accordance with the Project Documents.

ARTICLE 9. NOTICE OF TAXABLE POSSESSORY INTEREST

The terms of the Agreement may result in the creation of a possessory interest. If such a possessory interest is vested in a private party to the Agreement, the private party may be subjected to the payment of property taxes levied on such interest.

ARTICLE 10. ASSIGNMENT OF ANTITRUST ACTIONS

Public Contract Code Section 7103.5 provides:

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body (DISTRICT) 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. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

CONTRACTOR, for itself and all subcontractors, agrees to assign to DISTRICT all rights, title, and interest in and to all such causes of action CONTRACTOR and all subcontractors may have under the Agreement. This assignment shall become effective at the time DISTRICT tenders final payment to the CONTRACTOR and CONTRACTOR shall require assignments from all subcontractors to comply herewith.

ARTICLE 11. OTHER CONTRACTS

(a) DISTRICT reserves the right to let other contracts in connection with this work. CONTRACTOR shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly connect and coordinate its work with such other contractors.

(b) If any part of CONTRACTOR's work depends for proper execution or results upon work of any other contractor, the CONTRACTOR shall inspect and promptly report to ARCHITECT in writing any defects in such work that render it unsuitable for such proper execution and results. CONTRACTOR will be held
accountable for damages to DISTRICT for that work which it failed to inspect or should have inspected. CONTRACTOR's failure to inspect and report shall constitute its acceptance of other contractor's work as fit and proper for reception of its work, except as to defects which may develop in other contractors' work after execution of CONTRACTOR's work.

(c) To ensure proper execution of its subsequent work, CONTRACTOR shall measure and inspect work already in place and shall at once report to the ARCHITECT in writing any discrepancy between executed work and Project Documents.

(d) CONTRACTOR shall ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by DISTRICT in prosecution of the Project to the end that CONTRACTOR may perform this Agreement in the light of such other contracts, if any.

(e) Nothing herein contained shall be interpreted as granting to CONTRACTOR exclusive occupancy at site of Project. CONTRACTOR shall not cause any unnecessary hindrance or delay to any other contractor working on Project. If simultaneous execution of any contract for Project is likely to cause interference with performance of some other contract or contracts, DISTRICT shall decide which contractor shall cease work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously.

(f) DISTRICT shall not be responsible for any damages suffered or extra costs incurred by CONTRACTOR resulting directly or indirectly from award or performance or attempted performance of any other contract or contracts on Project, or caused by any decision or omission of DISTRICT respecting the order of precedence in performance of contracts.

ARTICLE 12. OCCUPANCY

(a) DISTRICT reserves the right to occupy buildings and/or portions of the site at any time before completion, and such occupancy shall not constitute final acceptance of any part of work covered by this Agreement, nor shall such occupancy extend the date specified for completion of the work. Beneficial occupancy of building(s) does not commence any warranty period nor shall it entitle CONTRACTOR to any additional compensation due to such occupancy.

ARTICLE 13. DISTRICT'S RIGHT TO TERMINATE AGREEMENT

(a) **Termination for Cause.** If the CONTRACTOR refuses or fails to complete the work or any separable part thereof with such diligence as will insure its completion within the time specified or any extension thereof, or fails to complete said work within such time, or if the CONTRACTOR should file a petition for relief as a debtor, or should relief be ordered against CONTRACTOR as a debtor under Title 11 of the United States Code, or if CONTRACTOR should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it should refuse or should fail to supply enough properly skilled workers or proper equipment, tools, and materials in the necessary quantity and quality to complete the work in the time specified, or if CONTRACTOR should fail to make prompt payment to subcontractors for materials or labor, or disregard laws or ordinances or instructions of DISTRICT, or if CONTRACTOR or its subcontractors should otherwise be guilty of a violation of any provision of this Agreement, then
CONTRACTOR shall be deemed to be in default of the Agreement and DISTRICT may, without prejudice to any other right or remedy, serve written notice upon CONTRACTOR and its surety of DISTRICT’s intention to terminate this Agreement, such notice to contain the reasons for such intention to terminate, and unless within ten (10) calendar days after the service of such notice such condition shall cease or such violation shall cease, or arrangements satisfactory to DISTRICT for the correction thereof be made and corrective action commenced in a diligent and workmanlike manner and pursued to satisfactory completion, this Agreement shall upon the expiration of said ten (10) calendar days, cease and terminate. In such case, CONTRACTOR shall be excluded from the worksite and not be entitled to receive any further payment until work is finished to DISTRICT’s satisfaction.

(b) In the event of any such termination, surety shall have the right to take over and perform this Agreement, provided, however, that if surety within five (5) calendar days after service upon it of said notice of termination does not give DISTRICT written notice of its intention to take over and perform this Agreement or does not commence performance thereof within ten (10) calendar days after date of serving such notice of termination by DISTRICT on surety, DISTRICT may take over the work and prosecute same to completion by any means determined by DISTRICT including hiring another contractor for the account and at the expense of CONTRACTOR, and CONTRACTOR and its surety shall be liable to DISTRICT for any excess cost or other damages occasioned by the DISTRICT thereby. Time is of the essence in this Agreement. If the DISTRICT takes over the work as hereinafore provided, the DISTRICT may, without liability for so doing, take possession of and utilize in completing the work such materials, supplies, equipment and other property belonging to the CONTRACTOR as may be on the site of the work and necessary therefore.

(c) The expense of finishing the work, including compensation for additional architectural, managerial, and administrative services, shall be a charge against CONTRACTOR and CONTRACTOR agrees that the charge may be deducted from any money due or becoming due to CONTRACTOR from DISTRICT or CONTRACTOR shall pay the charge to the DISTRICT. Expense incurred by DISTRICT as herein provided, and damage incurred through CONTRACTOR’s default, shall be certified to DISTRICT by ARCHITECT. The surety shall become liable for payment should CONTRACTOR fail to pay in full any cost incurred by the DISTRICT.

(d) Nonappropriation of Funds/Insufficient Funds. In the event that sufficient funds are not appropriated to complete the Project or the DISTRICT determines that sufficient funds are not available to complete the Project, DISTRICT may terminate or suspend the completion of the Project at any time by giving written notice to the CONTRACTOR. In the event that the DISTRICT exercises this option, the DISTRICT shall pay for any and all work and materials completed or delivered onto the site, and the value of any and all work then in progress and orders actually placed which cannot be canceled up to the date of notice of termination. The value of work and materials paid for shall include a factor of fifteen percent (15%) for the CONTRACTOR’s overhead and profit and there shall be no other costs or expenses paid to CONTRACTOR. All work, materials and orders paid for pursuant to this provision shall become the property of the DISTRICT. DISTRICT may, without cause, order CONTRACTOR in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as DISTRICT may determine. Adjustment shall be made for increases in the cost of performance of the Agreement caused by suspense, delay or interruption.

(e) The foregoing provisions are in addition to and not a limitation of any other rights or remedies available to the DISTRICT.
ARTICLE 14. BONDS

Unless otherwise specified in Special Conditions, CONTRACTOR shall furnish a surety bond in an amount equal to one hundred percent (100%) of contract price as security for faithful performance of this Agreement and shall furnish a separate bond in an amount of one hundred percent (100%) of the contract price as security for payment to persons performing labor and furnishing materials in connection with this Project. Bonds shall be in the form set forth in these Project Documents.

ARTICLE 15. SUBSTITUTION OF SECURITIES

(a) Pursuant to the requirements of Public Contract Code Section 22300, upon CONTRACTOR’s request, DISTRICT will make payment to CONTRACTOR of any earned retention funds withheld from payments under this Agreement if CONTRACTOR deposits with the DISTRICT or in escrow with a California or federally chartered bank acceptable to DISTRICT, securities eligible for the investment pursuant to Government Code Section 16430 or bank or savings and loan certificates of deposit, upon the following conditions:

(1) CONTRACTOR shall be the beneficial owner of any securities substituted for retention funds withheld and shall receive any interest thereon.

(2) All expenses relating to the substitution of securities under said Section 22300 and under this Article 15, including, but not limited to DISTRICT’s overhead and administrative expenses, and expenses of escrow agent shall be the responsibility of the CONTRACTOR.

(3) If CONTRACTOR shall choose to enter into an escrow agreement, such agreement shall be in the form as set forth in Public Contract Code section 22300(f) attached hereto as part of the Project Documents and which shall allow for the conversion to cash to provide funds to meet defaults by the CONTRACTOR including, but not limited to, termination of the CONTRACTOR’s control over the work, stop notices filed pursuant to law, assessment of liquidated damages or amount to be kept or retained under the provisions of the Project Documents.

(4) Securities, if any, shall be returned to CONTRACTOR only upon satisfactory completion of the Agreement.

(b) To minimize the expense caused by such substitution of securities, CONTRACTOR shall, prior to or at the time CONTRACTOR requests to substitute security, deposit sufficient security to cover the entire amount to be then withheld and to be withheld under the General Conditions of this Agreement. Should the value of such substituted security at any time fall below the amount for which it was substituted, or any other amount which the DISTRICT determines to withhold, CONTRACTOR shall immediately, and at CONTRACTOR's expense, deposit additional security qualifying under said Section 22300 until the total security deposited is no less than equivalent to the amount subject to withholding under the Agreement.

(c) In the alternative, under Section 22300, CONTRACTOR, at its own expense, may request DISTRICT to make payment of earned retention funds directly to the escrow agent. Also at the expense of CONTRACTOR, CONTRACTOR may direct investment of the payments into securities, and CONTRACTOR
shall receive the interest earned on the investment upon the same conditions as shown in paragraph (a) for securities deposited by CONTRACTOR. Upon satisfactory completion of the Agreement, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by the escrow agent from DISTRICT, pursuant to the terms of Section 22300.

(d) If any provision of this Article 15 shall be found to be illegal or unenforceable, then, notwithstanding, this Article 15 shall remain in full force and effect, and such provision shall be deemed stricken.

**ARTICLE 16. FIRE INSURANCE**

CONTRACTOR will procure at CONTRACTOR's own expense, and before commencement of any work under this Agreement, fire insurance on the Project. Amount of fire insurance shall be sufficient to protect against loss or damage in full until work is accepted by DISTRICT. CONTRACTOR shall submit proof of insurance and shall provide endorsements on forms provided by the DISTRICT or on forms approved by the DISTRICT.

**ARTICLE 17. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE**

(a) CONTRACTOR shall take out and maintain during the life of this Agreement such public liability and property damage insurance as shall protect CONTRACTOR and DISTRICT from all claims for personal injury, including accidental death, to any person (including, as to DISTRICT, injury or death to CONTRACTOR's or subcontractor's employees), as well as from all claims for property damage arising from operations under this Agreement, in amounts as set forth in the Agreement.

(b) CONTRACTOR shall require its subcontractors, if any, to take out and maintain similar public liability and property damage insurance in like amounts or insure the activities of its subcontractors in CONTRACTOR’s own policy.

(c) CONTRACTOR, during the progress of the work and until final acceptance of the work by DISTRICT upon completion of the entire Agreement, shall maintain Builder’s Risk/“All Risk,” course-of-construction insurance in an amount not less than as set forth in the Agreement. Coverage is to provide extended coverage and insurance against vandalism, malicious mischief, perils of fire, sprinkler leakage, civil authority, sonic boom, earthquake, collapse, flood, wind, lightning, smoke, riot, debris removal (including demolition), and reasonable compensation for ARCHITECT’s services and expenses required as a result of such insured loss upon the entire work which is the subject of the Project Documents, including completed work and work in progress to the full insurable amount thereof. The risk of damage to the work due to the perils covered by the Builder’s Risk/“All Risk” Insurance, as well as any other hazards which might result in damage to the work, is that of CONTRACTOR and the surety, and no claims for such loss or damage shall be recognized by DISTRICT nor will such loss or damage excuse the complete and satisfactory performance of the Agreement by CONTRACTOR.

(d) CONTRACTOR shall submit proof of insurance and shall provide endorsements on the forms provided by the DISTRICT or on forms approved by the DISTRICT. Such insurance shall be issued by admitted surety insurers under the same conditions as required for bonds on the Project.
ARTICLE 18. WORKERS' COMPENSATION INSURANCE

(a) In accordance with the provisions of Section 3700 of the Labor Code, the CONTRACTOR and every subcontractor shall be required to secure the payment of compensation to its employees.

(b) The CONTRACTOR shall provide, during the life of the Agreement, workers' compensation insurance for all of its employees engaged in work under this Agreement, on or at the site of the Project, and, in case any of its work is sublet, the CONTRACTOR shall require the subcontractor similarly to provide workers' compensation insurance for all the latter's employees. Any class of employee or employees not covered by a subcontractor's insurance shall be covered by the CONTRACTOR's insurance. In case any class of employees engaged in work under this Agreement, on or at the site of the Project, is not protected under the workers' compensation statute, the CONTRACTOR shall provide or shall cause a subcontractor to provide, adequate insurance coverage for the protection of such employees not otherwise protected before subcontractor commences work. The CONTRACTOR shall file with the DISTRICT certificates of its insurance protecting workers and a thirty (30) day notice shall be provided to DISTRICT before the cancellation or reduction of any policy of CONTRACTOR or subcontractor. CONTRACTOR shall submit proof of insurance and shall provide endorsements on the forms provided by the DISTRICT or on forms approved by the DISTRICT. Such endorsements shall be submitted concurrently with the Project Documents.

ARTICLE 19. PROOF OF CARRIAGE OF INSURANCE

(a) CONTRACTOR shall not commence work nor shall it allow any subcontractor to commence work under this Agreement until all required insurance certificates and endorsements from admitted surety insurers have been obtained and delivered in duplicate to and approved by DISTRICT. Such insurance shall be issued by admitted surety insurers under the same conditions as required for bonds on the Project. CONTRACTOR shall provide proof of insurance on DISTRICT approved forms without revisions.

(b) Certificates and insurance policies shall include the following:

(1) A clause stating:

"This policy shall not be canceled or reduced in required limits of liability or amount of insurance until notice has been mailed to DISTRICT stating date of cancellation or reduction. Date of cancellation or reduction may not be less than thirty (30) days after date of mailing notice."

(2) Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

(3) Statement that the DISTRICT is an additional insured under the policy described and that such insurance policy shall be primary to any insurance or self-insurance maintained by the DISTRICT.
(c) In case of CONTRACTOR's failure to provide insurance as required by the Agreement, the DISTRICT may, at DISTRICT's option, take out and maintain at the expense of the CONTRACTOR, such insurance in the name of CONTRACTOR, or subcontractor, as the DISTRICT may deem proper and may deduct the cost of taking out and maintaining such insurance from any sums which are due or to become due to the CONTRACTOR under this Agreement.

**ARTICLE 20. DRAWINGS AND SPECIFICATIONS**

(a) Drawings and Specifications are intended to delineate and describe the Project and its component parts to such a degree as will enable skilled and competent contractors to intelligently bid upon the work, and to carry said work to a successful conclusion.

(b) Drawings and Specifications are intended to comply with all laws, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Project Documents, said laws, ordinances, rules and regulations shall be considered as a part of the Agreement within the limits specified. The CONTRACTOR shall bear all expenses of correcting work done contrary to said laws, ordinances, rules and regulations and if the CONTRACTOR performed same (1) without first consulting the ARCHITECT for further instructions regarding said work, or (2) disregarded the ARCHITECT'S instructions regarding said work.

(c) Questions regarding interpretation of drawings and specifications shall be clarified by the ARCHITECT. Before commencing any portion of the work, CONTRACTOR shall carefully examine all drawings and specifications and other information given to CONTRACTOR. CONTRACTOR shall immediately notify ARCHITECT and DISTRICT in writing of any perceived or alleged error, inconsistency, ambiguity, or lack of detail or explanation in the drawings and specifications. If CONTRACTOR or its subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any work under the Project Documents, which it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, CONTRACTOR shall bear any and all costs arising there from including, without limitation, the cost of correction thereof. In the event ARCHITECT determines that CONTRACTOR's requests for clarification or interpretation are not justified or do not reflect adequate competent supervision or knowledge by the CONTRACTOR or his/her subcontractors, CONTRACTOR shall be required to pay ARCHITECT's reasonable and customary fees in processing and responding to such requests. Should the CONTRACTOR commence work or any part thereof without seeking clarification, CONTRACTOR waives any claim for extra work or damages as a result of any ambiguity, conflict or lack of information.

(d) Figured dimensions on drawings shall govern, but work not dimensioned shall be as directed. Work not particularly shown or specified shall be the same as similar parts that are shown or specified. Large-scale drawings shall take precedence over smaller scale drawings as to shape and details of construction. Specifications shall govern as to materials, workmanship, and installation procedures. Drawings and specifications are intended to be fully cooperative and to agree. If CONTRACTOR observes that drawings and specifications are in conflict, CONTRACTOR shall promptly notify the ARCHITECT in writing, and any necessary changes shall be adjusted as provided in the Article entitled "Changes and Extra Work;" provided, however, that the specification calling for the higher quality material or workmanship shall prevail without additional cost to DISTRICT.
Materials or work described in words which so applied has a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

It is not the intention of the Agreement to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of such "trade name" or "trade term" shall be considered a sufficient notice to CONTRACTOR that it will be required to complete the work so named with all its incidental and accessory items according to the best practices of the trade.

The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor necessary to achieve full and complete functioning of the material and/or equipment as per best practices of the trade(s) involved, unless specifically noted otherwise.

ARCHITECT will furnish to CONTRACTOR one (1) complete set of blue-line prints for posting of changes. Additional blue-line prints shall be provided by ARCHITECT upon payment by CONTRACTOR. During the construction period, CONTRACTOR shall maintain the set of blue-line prints in a satisfactory record condition, and shall thoroughly and neatly post, as they occur, all additions, deletions, corrections and/or revisions in the actual construction of the Project. The record drawings must be posted monthly and be current prior to each submission of each certificate of payment.

ARTICLE 21. OWNERSHIP OF DRAWINGS

All plans, drawings, designs, specifications, and other incidental architectural and engineering work or materials and other Project Documents and copies thereof furnished by DISTRICT are DISTRICT’s property. They are not to be used in other work and are to be returned to DISTRICT on request at completion of work, and may be used by DISTRICT as it may require, without any additional costs to DISTRICT.

ARTICLE 22. DETAIL DRAWINGS AND INSTRUCTIONS

In case of ambiguity, conflict, or lack of information, ARCHITECT shall furnish additional instructions by means of drawings or otherwise, necessary for proper execution of work. All such drawings and instructions shall be consistent with Project Documents, true developments thereof, and reasonably inferable therefrom. Such additional instructions shall be furnished with reasonable promptness, provided that CONTRACTOR informs the ARCHITECT of the relationship of the request to the critical path of construction.

Work shall be executed in conformity therewith and CONTRACTOR shall do no work without proper drawings and instructions.

The ARCHITECT will furnish necessary additional details to more fully explain the work, which details shall be considered as part of the Project Documents.

Should any details be more elaborate, in the opinion of the CONTRACTOR, than scale drawings and specifications warrant, CONTRACTOR shall give written notice thereof to the ARCHITECT within five (5) days of the receipt of same. In case no notice is given to the ARCHITECT within five (5) days, it will be
assumed the details are reasonable development of the scale drawings. In case notice is given, then it will be considered, and if found justified, the ARCHITECT will either modify the drawings or shall recommend to DISTRICT a change order for the extra work involved.

(e) All parts of the described and shown construction shall be of the best quality of their respective kinds and the CONTRACTOR is hereby advised to use all diligence to become fully involved as to the required construction and finish, and in no case to proceed with the different parts of the work without obtaining first from the ARCHITECT such directions and/or drawings as may be necessary for the proper performance of the work.

(f) If it is found at any time, before or after completion of the work, that the CONTRACTOR has varied from the drawings and/or specifications, in materials, quality, form or finish, or in the amount or value of the materials and labor used, the ARCHITECT shall make a recommendation: (1) that all such improper work should be removed, remade and replaced, and all work disturbed by these changes be made good at the CONTRACTOR's expense; or (2) that the DISTRICT deduct from any amount due CONTRACTOR, the sum of money equivalent to the difference in value between the work performed and that called for by the drawings and specifications. ARCHITECT shall determine such difference in value. The DISTRICT, at its option, may pursue either recommendation made by the ARCHITECT.

ARTICLE 23. SHOP DRAWINGS

(a) CONTRACTOR shall check and verify all field measurements and shall submit to ARCHITECT, with sufficient advance time, six (6) copies, checked and approved by CONTRACTOR, of all shop drawings, schedules, and materials list required for the work. All shop drawings, samples, product data, and other submittal data must be received within fifteen (15) calendar days of receiving the Notice to Proceed. ARCHITECT shall review such drawings, schedules and materials list only for conformance with design concept of Project and compliance with information given in Project Documents, and return with guidance as to required corrections. CONTRACTOR shall make any corrections required by ARCHITECT, file three (3) corrected copies with ARCHITECT, and furnish such other copies as may be needed for construction within five (5) calendar days. ARCHITECT'S approval of such drawings, schedules, or materials list shall not relieve CONTRACTOR from responsibility for deviations unless CONTRACTOR has in writing called ARCHITECT'S attention to such deviations at time of submission and secured ARCHITECT'S written approval, nor shall it relieve CONTRACTOR from responsibility for errors in shop drawings or schedules.

(b) All submittals of shop drawings, catalog cuts, data sheets, schedules and material lists shall be complete and shall conform to contract drawings and specifications. The CONTRACTOR shall prepare, pay for and print the necessary quantities of shop drawings and submittals as required. Submittal copies shall be neatly bound with sturdy labeled covers. For each item listed include manufacturer’s name and address, trade name, local supplier’s name and address, catalog number, catalog cuts and brochures, complete technical and performance data for machinery and equipment. Mark cuts, brochures, and data to indicate items proposed and the intended use.

(c) The term "shop drawing" as used herein shall be understood to include, but not be limited to, detail design calculations, fabrication and installation drawings, lists, graphs and operating instructions.
(d) Shop drawings shall be submitted at a time sufficiently early to allow review of same by the Division of State Architect (DSA) if required, and the ARCHITECT, and to accommodate the rate of construction progress required under the Project Documents. CONTRACTOR will be required to pay ARCHITECT's reasonable and customary fees in order to expedite review of shop drawings which are not submitted in a timely fashion.

(e) All shop drawing submittals shall be accompanied by an accurately completed transmittal form using the format bound herein. Any shop drawing submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for re-submittal. The CONTRACTOR may authorize a material or equipment supplier to deal directly with the ARCHITECT with regard to shop drawings, however, ultimate responsibility for the accuracy and completeness of the information contained in the submittal shall remain with the CONTRACTOR.

(f) Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of shop drawings on 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 indicates review of the group or package as a whole. At its option, the CONTRACTOR or Supplier may obtain from the ARCHITECT quantities of the shop drawing transmittal form at reproduction cost.

(g) CONTRACTOR's review and approval of shop drawings shall include the following stamp:

"The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings that does not conform to the Project Documents. This shop drawing has been coordinated with all other shop drawings received to date by CONTRACTOR and this duty of coordination has not been delegated to subcontractors, material suppliers, the ARCHITECT, or the engineers on this project.

____________________________________________
Signature of CONTRACTOR"

(h) Within twenty-five (25) calendar days after receipt of the shop drawings, the ARCHITECT will return one or more prints of each drawing to CONTRACTOR with his or her comments noted thereon. The CONTRACTOR shall make a complete and acceptable submittal to the ARCHITECT by the second submission of drawings. The DISTRICT shall withhold funds due the CONTRACTOR to cover additional costs of the ARCHITECT'S review beyond the second submission and any other costs incurred by DISTRICT.

(i) If prints of the shop drawing are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision of said drawing will not be required. If prints of the drawing are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal resubmittal of said drawings will not be required. If prints of the drawing are returned to the CONTRACTOR marked "REVISE AND RESUBMIT,"
the CONTRACTOR shall revise said drawing and shall resubmit six (6) copies of the revised drawing to the ARCHITECT. If prints of the drawing are returned to the CONTRACTOR marked "REJECTED RESUBMIT," the CONTRACTOR shall resubmit six (6) new copies of the drawing to the ARCHITECT.

(j) Fabrication of an item shall not be commenced before the ARCHITECT has reviewed the pertinent shop drawings and returned copies to the CONTRACTOR marked with "NO EXCEPTIONS TAKEN," or "MAKE CORRECTIONS NOTED." Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the Project Documents and shall not be taken as the basis of claims for extra work. The review of such drawings by the ARCHITECT will be limited to checking for general agreement with the Project Documents, and shall in no way relieve the CONTRACTOR of responsibility for errors or omissions contained therein, nor shall such review operate to waive or modify any provision contained in the Project Documents. Fabricating dimensions, quantities of material, applicable code requirements, and other contract requirements shall be the CONTRACTOR's responsibility.

(k) No work represented by required shop drawings shall be purchased or commenced until the applicable submittal has been approved. The work shall conform to the approved shop drawings and all other requirements of the Project Documents. The CONTRACTOR shall not proceed with any related work which may be affected by the work covered under shop drawings until the applicable shop drawings have been approved, particularly where piping, machinery, and equipment and the required arrangements and clearances are involved.

(l) Except where the preparation of a shop drawing is dependent upon the approval of a prior shop drawing, all shop drawings pertaining to the same class or portion of the work shall be submitted simultaneously.

(m) Calculations of a structural nature must be approved by the Division of State Architect.

(n) The CONTRACTOR shall have no claim for damages or extension of time due to any delay resulting from the CONTRACTOR having to make the required revisions to shop drawings unless review by the Architect of said drawings is delayed beyond the time provided hereinbefore and the contractor can establish that the Architect’s delay in review actually resulted in a delay in the contractor construction schedule. Contractor shall not be entitled to any claim for damages resulting from DSA review extending beyond fifteen (15) calendar days after submittal. However, DISTRICT may consider an extension of time due to any delay caused by DSA review.

**ARTICLE 24. LAYOUT AND FIELD ENGINEERING**

All field engineering if required for laying out of work and establishing grades for earthwork operations shall be furnished by CONTRACTOR at its expense. Such work shall be done by a qualified civil engineer approved by the DISTRICT.

**ARTICLE 25. SOILS INVESTIGATION REPORT – NOT APPLICABLE**
(a) When a soils investigation report has been obtained from test holes at the site, such report is available for the CONTRACTOR’S use for work under this Agreement. Such report shall not be part of the Agreement. Any information obtained from such report or any information given on the project documents as to surface and subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed and does not form a part of the Agreement. CONTRACTOR is required to make a visual examination of site and must make whatever test CONTRACTOR deems appropriate to determine surface and subsurface soil conditions. If, during the course of work under this Agreement, CONTRACTOR encounters subsurface or latent conditions which differ materially from those indicated in the soils investigation report, then CONTRACTOR shall notify the DISTRICT within five (5) working days of discovery of the condition.

**WARNING:** DISTRICT does not warrant the soils at the project site nor any information contained in any soils report. Soils investigation report is provided for CONTRACTOR’S information only. CONTRACTOR must conduct an independent investigation of the project site and the soils conditions of the site. DISTRICT does not warrant the soils conditions of the site and CONTRACTOR is fully responsible to ascertain site conditions for the purposes of determining construction means and methods prior to commencing construction.

(b) CONTRACTOR agrees that no claim against DISTRICT will be made by CONTRACTOR for damages and hereby waives any rights to damages in the event that during progress of work CONTRACTOR encounters subsurface of latent conditions at the worksite materially different from those shown on project documents.

**ARTICLE 26. TESTS AND INSPECTIONS**

(a) Tests and inspections will comply with California Code of Regulations and with all other laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction over the Project.

(b) If the Agreement, DISTRICT’s instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, CONTRACTOR shall give notice in accordance with such authority of its readiness for observation or inspection at least two (2) working days prior to being tested or covered up. If inspection is by authority other than DISTRICT, CONTRACTOR shall inform the DISTRICT’s Inspector of the date fixed for such inspection. Required certificates of inspection shall be secured by CONTRACTOR. Observations by DISTRICT’s Inspector shall be promptly made, and where practicable, at source of supply. If any work should be covered up without approval or consent of DISTRICT’s Inspector, it must be uncovered for examination and satisfactorily reconstructed at CONTRACTOR’s expense in compliance with the Agreement. Costs of tests, inspections and any materials found to be not in compliance with the Agreement shall be paid for by CONTRACTOR.

(c) Unless otherwise noted by the contract document, the DISTRICT will pay for testing and inspection costs except for the following conditions listed: Contractor shall pay for resulting costs from:

1. Testing/inspection beyond a normal 8 hour day, weekends or holidays: or uncoordinated requests for inspection; or insufficient notice of work to be performed.
(2) Additional/premium testing and inspection costs due to our of sequence fabrication and erection

(3) Testing/inspection costs due to faulty work and the subsequent rework

(4) Testing/inspection costs which are a result of this CONTRACTOR’S method of installation or use of alternate/non-specific materials that cause additional testing/inspection over normal accepted installation methods and materials testing.

(5) Testing/inspection costs which are incurred due to work that is not ready for complete inspection.

ARTICLE 27. TRENCHES – NOT APPLICABLE

(a) CONTRACTOR shall provide, maintain and remove adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life and limb in trenches and open excavation, which conform to applicable safety standards.

(b) If this Agreement involves the excavation of any trench or trenches five (5) feet or more in depth, and the Project cost is in excess of $25,000, the CONTRACTOR shall, in advance of excavation, submit to the DISTRICT for acceptance or to whomever DISTRICT designates which may include a registered civil or structural engineer employed by the DISTRICT to whom authority to accept has been delegated, 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 System Standards established by the Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer employed by the CONTRACTOR, and all costs therefore shall be included in the price named in the Agreement for completion of the work as set forth in the Project Documents. In no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by CAL-OSHA and a CAL-OSHA permit for such plan delivered to the DISTRICT. Labor Code Section 6500 and 6705; Health and Safety Code Section 17922.5)

(c) If this Agreement involves the digging of trenches or excavations that extend deeper than four feet below the surface, the following shall apply pursuant to Public Contract Code section 7104:

(1) The CONTRACTOR shall promptly, and before the following conditions are disturbed, notify the DISTRICT, in writing, of any:

   (i) Material that the CONTRACTOR believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

   (ii) Subsurface or latent physical conditions at the site different from those indicated.
(iii) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

(2) The DISTRICT shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR’s cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the Project Documents.

(3) In the event a dispute arises between the DISTRICT and the CONTRACTOR, whether the conditions materially differ or involve hazardous waste, or cause a decrease or increase in the CONTRACTOR’s cost of, or time required for, performance of any part of the work, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the Project Documents, but shall proceed with all the work to be performed under the Project Documents. The CONTRACTOR shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

ARTICLE 28. DOCUMENTS ON WORK

CONTRACTOR shall keep on the job site at all times one legible copy of all Project Documents, including addenda and change orders, and all approved drawings, plans, schedules and specifications. Said Documents shall be kept in good order and available to ARCHITECT, ARCHITECT’s representatives, and all authorities having jurisdiction. CONTRACTOR shall be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project.

ARTICLE 29. STATE AUDIT

Pursuant to and in accordance with the provisions of Government Code Section 8546.7, or any amendments thereto, all books, records and files of the DISTRICT, the CONTRACTOR, or any subcontractor connected with the performance of this Agreement involving the expenditure of public funds in excess of Ten Thousand Dollars ($10,000.00), including, but not limited to, the costs of administration of the Agreement, shall be subject to the examination and audit of the State Auditor at the request of the DISTRICT or as part of any audit of the DISTRICT for a period of three (3) years after final payment is made under this Agreement.

ARTICLE 30. SUBSTITUTIONS

(a) Prior to Bid Opening. Should the bidder wish to request prior to bid opening, any substitution for the materials, process, service or equipment specified, the bidder shall submit a written request at least ten (10) working days before the bid opening date and hour. If the substituted item is acceptable, the DISTRICT will approve it in an Addendum issued to all bidders of record. Requests received less than ten (10) working days prior to bid opening will not be considered. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the project.
(b) After Bid Opening and Prior to Notice to Proceed. If the bidder clearly indicates in its bid that it is proposing to use an “equal” product, the brand name or trade name, if any, of a proposed substitute item shall be inserted in the space provided in the bid or shall be otherwise clearly identified in the bid. Any submittal provided after the aforementioned deadline will not be considered. If the bidder fails to indicate an “equal” product, its bid shall be considered as offering the material, process, service or equipment referred to by the brand name or trade name specified. It is expressly understood and agreed to by the bidder that the DISTRICT reserves the right to reject any such proposed substituted item. It is further expressly understood and agreed by bidder that in the event the DISTRICT rejects a proposed “equal” item, the bidder will then supply the material; process, service or equipment designated by brand name or trade name or a substitute therefore which meets with the approval of the DISTRICT.

DISTRICT shall only consider substitution requests from the bidder submitting the bid for the Project. The DISTRICT is not responsible for locating or securing any information which is not included in such substantiating data. The burden of proof as to the quality or suitability of proposed substituted items shall be borne by the bidder. The DISTRICT shall be the sole judge as to the quality and suitability of proposed substituted items, and decisions of the DISTRICT shall be final and conclusive. Unless extended by the mutual agreement of the parties, the DISTRICT shall notify the successful bidder of the decision concerning the proposed substitution of “equal” items prior to the Notice to Proceed. Also such decisions by the DISTRICT shall be in writing, and no proposed substituted item shall be deemed approved unless the DISTRICT has so indicated in writing. These time limitations shall be complied with strictly, and in no case will an extension of time for completion be granted because of the bidder’s failure to request the substitution of an item at the times and in the manner set forth herein.

(c) Whenever in specifications any materials, process, service or equipment is indicated or specified by brand name, trade name, proprietary name or by name of manufacturer, such specification shall be deemed to be used for the purpose of facilitating description of material, process, service or equipment desired and shall be deemed to be followed by the words "or equal," and CONTRACTOR may, unless otherwise stated, offer any material, process, service, or equipment which shall be substantially equal or better in every respect to that so indicated or specified subject to DISTRICT or ARCHITECT approval.

(d) If material, process, service, or equipment offered by CONTRACTOR is not, in opinion of ARCHITECT, or DISTRICT, substantially equal or better in every respect to that specified, then CONTRACTOR shall furnish the material, process, service, or equipment specified. Burden of proof as to equality of any material, process, service, or equipment shall rest with CONTRACTOR. Provision authorizing submission of "or equal" substantiating data shall not in any way authorize an extension of time for performance of this Agreement nor shall DISTRICT or ARCHITECT authorize the submission of “or equal” substantiating data within twenty five (25) days of the filing of the Notice of Completion on the Project.

(e) In the event CONTRACTOR furnishes material, process, service or equipment other than what was specified by the DISTRICT and which has been accepted by the DISTRICT and which later is defective, then CONTRACTOR at its sole cost and expense shall furnish the DISTRICT specified material, process, service or equipment or fully replace with new the defective material process, service or equipment at DISTRICT’s discretion.

(f) In the event CONTRACTOR furnishes material, process service, or equipment more expensive than that specified, difference in cost of such material, process, service, or equipment so furnished shall be borne by
CONTRACTOR. Any engineering, design fees, or approval agencies' fees required to make adjustments in material or work of all trades directly or indirectly affected by the approved substituted items shall be borne entirely by CONTRACTOR. Any difference in cost between an approved substitution which is lower in cost than the originally specified item shall be refunded or credited by CONTRACTOR to DISTRICT.

(g) Price, fitness and quality being equal with regard to supplies, the District may prefer supplies grown, manufactured, or produced in California and next prefer supplies partially manufactured grown, or produced in California provided the bids of said suppliers or the prices quoted by them do not exceed by more than 5% of the lowest bids/prices quoted by out of state suppliers, the major portion of the manufacture of the supplies is not done outside of California and the public good will be served thereby. (Government Code section 4330-4334)

(h) Six (6) copies of pertinent information, technical data and a letter identifying the changes shall be issued by the CONTRACTOR when requesting use of alternate materials

ARTICLE 31. SAMPLES

(a) CONTRACTOR shall furnish for approval, within fifteen (15) calendar days following Notice to Proceed, all samples as required in specifications together with catalogs and supporting data required by ARCHITECT. This provision shall not authorize any extension of time for performance of the work. ARCHITECT shall review such samples, as to conformance with design concept of work and for compliance with information given in Project Documents and approve or disapprove same within fifteen (15) calendar days from receipt of same.

(b) Unless specified otherwise, sampling, preparation of samples and tests shall be in accordance with the latest standards of the American Society for Testing and Materials.

(c) Samples shall, upon demand of ARCHITECT or DISTRICT, be submitted for tests or examinations and considered before incorporation of same into the work. CONTRACTOR shall be solely responsible for delays due to samples not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect. Samples which are of value after testing will remain the property of the CONTRACTOR.

ARTICLE 32. PROGRESS SCHEDULE

(a) Within five (5) calendar days after the date of Notice to Proceed, CONTRACTOR shall submit a progress schedule for DISTRICT’s acceptance. The schedule shall indicate the beginning and completion dates of all phases of construction and shall use the "critical path method" (commonly called CPM) or equivalent scheduling methodology for the value reporting, planning and scheduling, of all work required under the Project Documents. The schedule will separately identify those milestones or events that must be completed before other portions of the work can be accomplished with no activity exceeding a14 day duration.

(b) The scheduling is necessary for the DISTRICT’s adequate monitoring of the progress of the work and shall be prepared in accordance with the time frame described in Article 4 of the Agreement. The DISTRICT
may reject such a schedule and require modification to it if, in the opinion of the ARCHITECT or DISTRICT, adherence to the progress schedule will cause the work not to be completed in accordance with the Agreement. CONTRACTOR shall adhere to any such modifications required by the DISTRICT.

(c) CONTRACTOR will exchange scheduling information with subcontractors and suppliers. CONTRACTOR will order work, equipment and materials with sufficient lead time to avoid interruption of the work.

(d) The CONTRACTOR shall submit to DISTRICT a monthly schedule to reflect the actual sequence of the work which shall be totally separate and apart from the original progress schedule.

(e) The CONTRACTOR shall also, if requested by the ARCHITECT or DISTRICT, provide revised schedules within ten (10) calendar days if, at any time, the ARCHITECT or DISTRICT, consider the completion date to be in jeopardy. The revised schedule shall be designed to show how the CONTRACTOR intends to accomplish the work to meet the original completion date. The form and method employed by the CONTRACTOR shall be the same as for the original progress schedule. The CONTRACTOR shall modify any portions of the schedule that become infeasible because of "activities behind schedule" or for any other valid reason. CONTRACTOR will provide documents and justification for any schedule changes. An activity that cannot be completed by its original completion date shall be deemed to be behind schedule.

(f) CONTRACTOR shall submit a revised schedule within ten (10) consecutive calendar days of CONTRACTOR’s request for any extension of time. Failure to submit such schedule will result in CONTRACTOR waiving his/her right to obtain any extension of time.

(g) It is agreed that the DISTRICT owns the “float” on this project. If CONTRACTOR submits a revised schedule showing an earlier completion date for the project, DISTRICT’s acceptance of this revised schedule shall not entitle contractor to any delay claim or disruption damages or any other damages due to any such revised schedule. Nothing provided herein shall be construed as a direct, indirect or implicit acceleration order to the contractor.

(h) CONTRACTOR agrees that failure to timely submit the progress schedule, the monthly schedule or any revised progress schedule requested by the ARCHITECT or the DISTRICT may result in delay in payment to CONTRACTOR.

(i) In addition to the requirement to update the baseline schedule, CONTRACTOR is responsible to provide a three week look-ahead schedule at each progress meeting. Schedule will include activities that are being completed during the week of the meeting and projected work for two weeks out. Schedule shall include information for all trades on-site. Schedule will identify any work that is proposed outside the regular working hours.

ARTICLE 33. TIME ALLOWANCES

(a) DISTRICT will serve a Notice to Proceed upon Contractor by hand delivery, facsimile, email or delivery to Contractor at legal address.
(b) Start date for Contract Times shall be on the date indicated in the Notice to Proceed. If no date is indicated, then the start date for contract time shall be the 5th calendar day from date that Contractor receives DISTRICT’s written Notice to Proceed, unless the Notice to Proceed is served by mail only, then the Start Date under the Contract shall be the tenth (10th) calendar day following the date of mailing. The Contractor shall commence work on such day, and shall prosecute the Work diligently to completion thereafter. No work shall commence before contract bonds and insurance certificates have been filed with the DISTRICT and the contract has been signed by the DISTRICT.

(c) CHANGE OF CONTRACT TIMES

(1) The contract times may only be changed by change order or written amendment and time is of this essence in this Agreement.

(2) The Contract Times will be adjusted in an amount equal to the time lost as shown on a critical path schedule due to the following:

(i) Changes in the Work ordered by DISTRICT;

(ii) Acts or neglect by DISTRICT’s consultants, acts or neglect of utility districts, acts or neglect of other Contractors performing other Work, provided Contractor has fully and completely performed its responsibilities under the Contract Documents, including but not limited to, its cooperation and coordination responsibilities required by the Contract Documents;

Fires, floods, abnormal weather conditions, earthquakes, civil disturbances, or acts of God, provided damage resulting from same is not the result of Contractor's failure to properly protect the Work as required by the Contract Documents. Notwithstanding the foregoing, the contract times shall not be extended unless Contractor has actually been prevented from completing any part of the Work within the contract time due to delay which is (i) beyond the control of Contractor and (ii) due to reasons for which Contractor is not responsible and (iii) a claim for delay is made as provided for herein. Delays attributable to and within the control of a Subcontractor, or its subcontractors, or supplier shall be deemed to be delays within the control of Contractor.

Contractor shall have no right to an adjustment in the time of completion due to weather conditions which are normal for the locality of the site. The time period for completion of the project has been determined with consideration given to the average climatic range prevailing in the locality of the site.

(3) Where Contractor is prevented from completing any part of the Work within the contract due to delay beyond the control of both DISTRICT and Contractor, an extension of contract times in an amount equal to the time loss due to such delay shall be the Contractor's sole and exclusive remedy for such delay. DISTRICT shall not be liable to Contractor, any Subcontractor, any supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of Contractor, or (ii) delays beyond
the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by utility districts.

(4) Delays due to adverse weather conditions will not be allowed for weather conditions which do not directly impact the performance of the critical path. Whenever the Contractor has undertaken an exterior critical path activity which is directly impacted by adverse weather conditions, the Contractor shall immediately notify the DISTRICT of the potential delay to such activity. The DISTRICT shall inspect the site, meet with the Contractor and confirm that the exterior critical path activity is impacted and grant an extension of the Contract Times sufficient to allow the Contractor to perform the impacted activity.

(5) If delays acceptable for evaluation 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.

(6) Delay in completion of the Work beyond the expiration of the contract time resulting from causes other than those listed as acceptable for evaluation are considered inexcusable delays and shall not entitle the Contractor to an extension of the contract time or an adjustment of the Contract amount.

If an inexcusable delay occurs concurrently with acceptable delays for evaluation, the maximum extension of the Contract Time shall be the number of days, if any, by which the duration of a delay exceeds the inexcusable delay. The duration of concurrence is non-compensable.

(d) NOTICE OF DELAY

(1) Notice shall constitute application for extension of time only if notice requests extension and sets forth the impact of the delay on the critical path and Contractor's estimate of additional time required together with full recital of causes of unavoidable delays relied upon.

(2) After receipt of a request for a time extension, with verifiable documents and justifications included, DISTRICT will make decision thereon, and will advise Contractor in writing.

(3) No time extensions shall be considered without related documents and justifications necessary for DISTRICT to make determination.

(4) No time extensions shall be granted for delays for which Contractor fails to give timely notice and Contractor hereby waives any and all damages for delay for which timely notice is not given.

(5) Any request for extension of time shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant is entitled as a result of the occurrence of said event. All claims and adjustments in the contract times shall be determined by DISTRICT. No claim for an adjustment in the contract times will be valid and such claim will be waived if not submitted in accordance with the requirements of this paragraph.
(6) The Contractor's failure to perform in accordance with the construction schedule shall not be excused because the Contractor has submitted time extension requests, unless and until such requests are approved by DISTRICT.

(e) NO DAMAGE FOR CONTRACTOR CAUSED DELAY

Contractor shall not be entitled to any compensation, including but not limited to extended field or home office overhead, field supervision, costs of capital, interest, escalation charges, acceleration costs or other impacts for any delays caused in whole or in part by Contractor's failure to perform its obligations under this Contract, or during periods of delay concurrently caused by Contractor and either DISTRICT or others. Contractor may be compensated for delays caused directly and solely by DISTRICT except that Contractor shall not be entitled to damages for delay to the Work caused by the following reasons:

(1) DISTRICT's right to sequence Work in manner which would avoid disruption to the DISTRICT's tenants and their contractors or other prime contractors and their respective subcontractors, exercised as a result of Contractor's failure to perform its cooperation and coordination responsibilities required by this Contract;

(2) DISTRICT's enforcement of government act or regulation, or the provisions of the Contract Documents; and

(3) Extensive requests for clarifications to construction documents or modifications to contract, provided such clarifications or modifications are processed by DISTRICT or its consultants in a reasonable time commensurate with provisions of Contract requirements.

(f) Granting of time extension for any reason shall in no way operate as waiver on part of DISTRICT, of right to collect liquidated damages for other delays or of right to collect other damages or other rights to which DISTRICT is entitled.

**ARTICLE 34. MATERIALS AND WORK**

(a) Except as otherwise specifically stated in this Agreement, CONTRACTOR shall provide and pay for all materials, supplies, tools, equipment, labor transportation, superintendence, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete the Project within specified time.

(b) Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted or specified, and workmanship shall be of good quality.

(c) Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of work and shall be stored properly and protected as required. DISTRICT has no obligation to pay for any prefabricated material stored offsite until delivered and installed to the jobsite and inspected and approved by the inspector of record. DISTRICT may however consider payment on materials that are stored at the jobsite or in a bonded warehouse upon presentation of invoices and any required certifications.
(d) CONTRACTOR shall, after issuance of the Notice to Proceed by DISTRICT, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the work. CONTRACTOR shall, upon demand from the ARCHITECT, furnish to the ARCHITECT documentary evidence showing that orders have been placed.

(e) DISTRICT reserves the right, for any neglect in not complying with the above instructions, to place orders for such materials and/or equipment as it may deem advisable in order that the work may be completed at the date specified in the Agreement, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by the CONTRACTOR.

(f) No materials, supplies, or equipment for work under this Agreement 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 work and agrees upon completion of all work to deliver premises, together with all improvements and appurtenances constructed or placed thereon by it, to DISTRICT 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 work covered by this Agreement shall have any right to lien upon premises or any improvement or appurtenance thereon, except that CONTRACTOR may install metering devices or other equipment of utility companies or of political subdivisions, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, CONTRACTOR shall advise DISTRICT as to owner thereof.

(g) Nothing contained in this Article 33, however, shall defeat or impair the rights of persons furnishing material or labor under any bond given by CONTRACTOR for their protection or any rights under any law permitting such persons to look to funds due CONTRACTOR in hand of DISTRICT, and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials or labor when no formal contract is entered into for such materials or labor.

(h) The title to new materials and/or equipment and attendant liability for its protection and safety, shall remain in the CONTRACTOR until incorporated in the work and accepted by the DISTRICT; no part of said materials and/or equipment shall be removed from its place of onsite/offsite storage except for immediate installation in the work; and CONTRACTOR shall keep an accurate inventory of all said materials and/or equipment in a manner satisfactory to the DISTRICT or its authorized representative.

**ARTICLE 35. INTEGRATION OF WORK**

(a) CONTRACTOR shall do all cutting, fitting, patching, and preparation of work as required to make its several parts come together properly, and fit it to receive or be received by work of other contractors or existing conditions showing upon, or reasonably implied by, the drawings and specifications, and shall follow all directions given by the Architect.

(b) All costs caused by defective or ill-timed work shall be borne by CONTRACTOR.

(c) CONTRACTOR shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor without the written consent of the ARCHITECT.
CONTRACTOR shall be solely responsible for protecting existing work on adjacent properties and shall obtain all required permits for shoring and excavations near property lines.

(d) When modifying existing work or installing new work adjacent to existing work, CONTRACTOR shall match, as closely as conditions of site and materials will allow, the finishes, textures, and colors of the original work, refinishing existing work as required, at no additional cost to DISTRICT.

(e) CONTRACTOR is aware that this Project may be split into several phases. If the Project is split into phases then CONTRACTOR has made allowances for any delays or damages which may arise from coordination with contractors for other phases. If any delays should arise from a contractor working on a different phase, CONTRACTOR’s sole remedy for damages, including delay damages, shall be against the contractor who caused such damage and not the DISTRICT. CONTRACTOR shall provide access to contractors for other phases as necessary to prevent delays and damages to contractors working on other phases of construction.

ARTICLE 36. OBTAINING OF PERMITS, LICENSES AND EASEMENTS

(a) Permits, licenses, and certificates necessary for prosecution of work, shall be secured and paid for by CONTRACTOR, unless otherwise specified. All such permits, licenses, and certificates shall be delivered to the ARCHITECT before demand is made for the certificate of final payment. CONTRACTOR shall, and shall require subcontractors to, maintain contractors’ licenses in effect as required by law.

(b) Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by DISTRICT, unless otherwise specified.

(c) Permits and charges for installation, and inspection thereof, of utility services by serving utilities shall be secured and paid for by DISTRICT.

ARTICLE 37. SURVEYS

Surveys to determine location of property lines and corners will be supplied by DISTRICT. Surveys to determine locations of construction, grading, and site work, shall be provided by CONTRACTOR.

ARTICLE 38. EXISTING UTILITY LINES; REMOVAL, RESTORATION

(a) Pursuant to Government Code Section 4215, the DISTRICT assumes the responsibility for removal, relocation, and protection of utilities located on the construction site at the time of commencement of construction under this Agreement with respect to any such utility facilities which are not identified in the plans and specifications. The CONTRACTOR shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of the DISTRICT to provide for removal or relocation of such utility facilities. If the CONTRACTOR, while performing work under this Agreement, discovers utility facilities not identified by the DISTRICT in the plans or specifications, CONTRACTOR shall immediately notify the DISTRICT and the utility in writing. CONTRACTOR shall be compensated according to the provisions governing changes in the work.
(b) This Article 37 shall not be construed to preclude assessment against the CONTRACTOR for any other delays in completion of the work. Nothing in this Article shall be deemed to require the DISTRICT to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the construction site can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the site of the construction.

(c) As part of the work to be performed, CONTRACTOR shall provide the notices and proceed in accordance with Government Code Sections 4216.2, 4216.3 and 4216.4, and pay all fees charged pursuant to Government Code Section 4216, et seq.

ARTICLE 39. WORK TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS

(a) CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to the work as indicated and specified.

(b) If CONTRACTOR observes that drawings or specifications are at variance therewith, CONTRACTOR shall promptly notify ARCHITECT in writing and any changes deemed necessary by the ARCHITECT shall be adjusted as provided for changes in work. If CONTRACTOR performs any work which it knew, or through exercise of reasonable care should have known, to be contrary to such laws, ordinances, rules or regulations, and without such notice to ARCHITECT, CONTRACTOR shall bear all costs arising therefrom. Where plans, drawings or specifications state that materials, processes, or procedures must be approved by the Division of State Architect, State Fire Marshall, or other body or agency, CONTRACTOR shall be responsible for satisfying requirements of such bodies or agencies.

ARTICLE 40. ACCESS TO WORK

DISTRICT and its representatives shall at all times have access to work wherever it is in preparation or progress. CONTRACTOR shall provide safe and proper facilities for such access so that DISTRICT’s representatives may perform their functions.

ARTICLE 41. PAYMENTS BY CONTRACTOR

CONTRACTOR shall pay:

(1) For all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered;

(2) For all materials, tools, and other expendable equipment to the extent of ninety percent (90%) of cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at site of Project and balance of cost thereof not later than the 30th day following completion of that part of work in or on which such materials, tools, and equipment are incorporated or used; and
(3) To each of its subcontractors, not later than the 5th day following each payment to CONTRACTOR the respective amounts allowed CONTRACTOR on account of work performed by respective subcontractor to the extent of such subcontractor's interest therein.

(4) Within seven (7) days from the time that all or any portion of the retentions are received by CONTRACTOR from DISTRICT, to each of its subcontractors from whom retention has been withheld, each subcontractor’s share of the retention received. However, if a retention payment received by CONTRACTOR is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor, if the payment is consistent with the terms of the subcontract. CONTRACTOR may withhold from a subcontractor its portion of the retentions if a bona fide dispute exists between the subcontractor and the CONTRACTOR. The amount withheld from the retention shall not exceed one hundred fifty percent (150%) of the estimated value of the disputed amount.

**ARTICLE 42. INSPECTOR’S FIELD OFFICE**

CONTRACTOR shall provide for the exclusive use of Inspector a temporary field office to be located as directed by Inspector and to be maintained until removal is authorized by DISTRICT. Office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. Door shall have a key-type lock or padlock hasp. A table satisfactory for study of plans and two chairs shall be provided by CONTRACTOR. CONTRACTOR shall provide and pay for adequate electric lights, telephone service (not a pay phone), and adequate heat for the field office until authorized removal.

**ARTICLE 43. UTILITIES**

(a) All utilities, including but not limited to electricity, water, gas, and telephone used on work shall be furnished and paid for by CONTRACTOR. CONTRACTOR shall furnish and install necessary temporary distribution systems, including meters, if necessary, from distribution points to points on site where utility is necessary to carry on the work. When it is necessary to interrupt any existing utility service to make connections, a minimum of forty-eight (48) hours advance notice shall be given to the DISTRICT and ARCHITECT. Interruptions in utility services shall be of the shortest possible duration for the work at hand and shall be approved by the DISTRICT and the ARCHITECT. In the event any utility service is interrupted without the required forty-eight (48) hours notice, then CONTRACTOR shall be liable for all damage suffered by DISTRICT due to the interruption. Upon completion of work, CONTRACTOR shall remove all temporary distribution systems.

(b) CONTRACTOR may, with written permission of DISTRICT, use DISTRICT’s existing utilities by making prearranged payments to DISTRICT for utilities used by CONTRACTOR for the Project.

**ARTICLE 44. SANITARY FACILITIES**

The CONTRACTOR shall provide sanitary temporary toilet facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The toilet facilities shall be maintained in a sanitary condition at all times and shall be left at the site until removal is directed by the Inspector. Use of toilet facilities in the work under construction shall not be permitted.
ARTICLE 45. CLEANING UP

(a) CONTRACTOR at all times shall keep work site free from debris such as waste, rubbish, and excess materials and equipment caused by this work. CONTRACTOR shall not leave debris under, in, or about the work site, but shall promptly remove same. In no event shall any trash or rubble be burned or buried on the project site. Daily clean up will be performed both continuously and simultaneously by CONTRACTOR to the satisfaction of the DISTRICT. If trash removal is not removed as required, the DISTRICT may, at its sole discretion and after proper notification to CONTRACTOR, elect to hire necessary labor to remove same. A notice of backcharge is not required for collecting costs associated with the trash removal.

(b) The Owner requires the Contractor to efficiently use resources to the fullest extent possible in the completion of this project. Resource efficient aspects to be considered in completing this Project include use of techniques that minimize waste generation and recycling of waste generated during the demolition and construction processes. Evaluation of efficient use of resources in the Project will be based on the specific Project goal to divert 25% of the construction waste generated by this project from municipal landfills.

(c) Upon completion of work, CONTRACTOR shall clean interior and exterior of building, including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected. Only non-hazardous cleaning materials shall be used. CONTRACTOR shall clean and polish all glass, plumbing fixtures, and finish hardware and similar finish surfaces and equipment and remove temporary fencing, barricades, planking, sanitary facilities and similar temporary facilities from site. If CONTRACTOR fails to clean up, the DISTRICT shall do so and the cost thereof shall be charged to the CONTRACTOR and deducted from any progress payment due.

ARTICLE 46. PATENTS, ROYALTIES, AND INDEMNITIES

The CONTRACTOR shall hold and save the DISTRICT and its governing board, officers, agents, and employees harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of this Agreement, including its use by the DISTRICT, unless otherwise specifically provided in the Project Documents, and unless such liability arises from the sole negligence, or active negligence, or willful misconduct of the DISTRICT.

ARTICLE 47. GUARANTEE

(a) CONTRACTOR warrants that the work (which includes any equipment furnished by CONTRACTOR as part of the materials) shall: (a) be free from defects in workmanship and material; (b) be free from defects in any design performed by CONTRACTOR; (c) be new, and conform and perform to the requirements stated in the specifications and where detail requirements are not so stated, shall conform to applicable industry standards; and (d) be suitable for the use stated in the specifications.

(b) The warranty period for discovery of defective work shall commence on the date stamped on the Notice of Completion verifying County recordation and continue for the period set forth in the specifications or for one year if not so specified. If, during the warranty period, the work is not available for use due to defective
work, such time of unavailability shall not be counted as part of the warranty period. The warranty period for corrected defective work shall continue for a duration equivalent to the original warranty period.

(c) District shall give CONTRACTOR prompt written notice after discovery of any defective work. CONTRACTOR shall correct any such defective work, as well as any damage to any other part of the work resulting from such defective work, and provide repair, replacement, or reimbursement, at its sole expense, in a manner approved by the DISTRICT and with due diligence and dispatch as required to make the work ready for use by DISTRICT, ordinary wear and tear, unusual abuse or neglect excepted. Such corrections shall include, but not be limited to, any necessary adjustments, modifications, changes of design (unless of DISTRICT’s design), removal, repair, replacement or reinstallation, and shall include all necessary parts, materials, tools, equipment, transportation charges and labor as may be necessary, and cost of removal and replacement of work shall be performed at a time and in such a manner so as to minimize the disruption to DISTRICT’s use of the work.

(d) In the event of failure of CONTRACTOR or Surety to commence and pursue with diligence said repairs or replacements within ten (10) calendar days after being notified in writing, DISTRICT is hereby authorized to proceed to have defects repaired or replaced and made good at expense of CONTRACTOR and Surety who hereby agree to pay costs and charges therefore immediately on demand.

(e) If, in the opinion of the DISTRICT, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the DISTRICT or to prevent interruption of operations of the DISTRICT, the DISTRICT will attempt to give the written notice required by this Article. If the CONTRACTOR or Surety cannot be contacted or neither complies with the DISTRICT’s requirements for correction within a reasonable time as determined by the DISTRICT, the DISTRICT may, notwithstanding the provisions of this Article, proceed to make such correction or provide such attention and the costs of such correction or attention shall be charged against the CONTRACTOR and Surety. Such action by the DISTRICT will not relieve the CONTRACTOR and Surety of the guarantees provided in this Article or elsewhere in the Project Documents.

(f) This Article does not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. CONTRACTOR shall furnish to DISTRICT all appropriate guarantee or warranty certificates upon completion of the Project or upon request by DISTRICT.

(g) All guarantees required under this Article shall be in writing on the Guarantee form included in the Project Documents.

(h) CONTRACTOR shall provide to DISTRICT instruction manuals for all items which require same.

(i) Nothing herein shall limit any other rights or remedies available to DISTRICT.

(j) The DISTRICT may collect its reasonable costs and attorneys' fees in any action to enforce this Article.
ARTICLE 48.  DUTY TO PROVIDE FIT WORKERS

(a) CONTRACTOR and subcontractors shall at all times enforce strict discipline and good order among their employees and shall not employ on work any unfit person or anyone not skilled in work assigned to such person. It shall be the responsibility of CONTRACTOR to ensure compliance with this Article.

(b) Any person in the employ of the CONTRACTOR or subcontractors whom DISTRICT or ARCHITECT may deem incompetent, unfit, troublesome or otherwise undesirable shall be excluded from the work site and shall not again be employed on it except with written consent of DISTRICT.

ARTICLE 49.  WAGE RATES, TRAVEL AND SUBSISTENCE

(a) Pursuant to the provisions of Article 2 (commencing at Section 1770), Chapter 1, Part 7, Division 2 of the Labor Code, the governing board of DISTRICT 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 this public work is to be performed for each craft, classification or type of worker needed for this Project from the Director of the Department of Industrial Relations ("Director."). These rates are on file with the Clerk of the DISTRICT’s governing board and copies will be made available to any interested party on request. CONTRACTOR shall post a copy of such wage rates at the work site. Labor Code Section 1773.2. The rates are available on the Internet at www.dir.ca.gov “Statistics & Research.”

(b) Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half times the above specified 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.

(c) CONTRACTOR shall pay and shall cause to be paid each worker engaged in work on the Project not less than the general prevailing rate of per diem wages determined by the Director, regardless of any contractual relationship which may be alleged to exist between the CONTRACTOR or any subcontractor and such workers.

(d) CONTRACTOR shall pay and shall cause to be paid to each worker needed to execute the work on the Project travel and subsistence payments, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed with the Department of Industrial Relations in accordance with Labor Code Section 1773.8.

(e) If during the period this bid is required to remain open, the Director of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which this public work is to be performed, such change shall not alter the wage rates in the Notice Calling for Bids or the contract subsequently awarded.

(f) Pursuant to Labor Code Section 1775, CONTRACTOR shall as a penalty to the DISTRICT, forfeit fifty dollars ($50) for each calendar day, or portion thereof, for each worker paid less than the prevailing rate of per diem wages, determined by the Director, for such craft or classification in which such worker is employed for any public work done under the Agreement by CONTRACTOR or by any subcontractor under it. The
amount of the penalty shall be determined by the Labor Commission and shall be based on consideration of the CONTRACTOR's mistake, inadvertence or neglect in failing to pay the correct prevailing rate of per diem wage, or the previous record of the CONTRACTOR in meeting his or her prevailing rate of per diem wage obligations, or the CONTRACTOR's willful failure to pay the correct prevailing rate of per diem wages. A mistake, inadvertence or neglect in failing to pay the correct prevailing rate of per diem wage is not excusable if the CONTRACTOR had knowledge of his or her obligations under this part. The difference between such prevailing rate of per diem wage and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing rate of per diem wage shall be paid to each worker by the CONTRACTOR.

(g) Any worker employed to perform work on the Project, which work is not covered by any craft or classification listed in the general prevailing rate of per diem wages determined by the Director shall be paid not less than the minimum rate of wages specified therein for the craft or classification which most nearly corresponds to work to be performed by them, and such minimum wage rate shall be retroactive to time of initial employment of such person in such craft or classification.

(h) Pursuant to Labor Code Section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided for in Labor Code Section 1773.8.

(i) CONTRACTOR shall post at appropriate conspicuous points on the site of the Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned.

**ARTICLE 50. HOURS OF WORK**

(a) As provided in Article 3, (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by the CONTRACTOR or by any subcontractor on any subcontract under this Agreement upon the work or upon any part of the work contemplated by this Agreement shall be limited and restricted by the Agreement to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, work performed by employees of CONTRACTOR in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

(b) The CONTRACTOR shall keep and shall cause each subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by CONTRACTOR in connection with the work or any part of the work contemplated by this Agreement. The record shall be kept open at all reasonable hours to the inspection of the DISTRICT and to the Division of Labor Standards Enforcement, Department of Industrial Relations.

(c) Pursuant to Labor Code Section 1813, the CONTRACTOR shall pay to the DISTRICT a penalty of Twenty-Five Dollars ($25) for each worker employed in the execution of this Contract by the CONTRACTOR or by any subcontractor for each calendar day during which such worker is required or permitted to work more
than eight (8) hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Article 3 (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.

(d) Any work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to DISTRICT.

ARTICLE 51. PAYROLL RECORDS

(a) Pursuant to the provisions of Labor Code Section 1776, the CONTRACTOR shall keep and shall cause each subcontractor performing any portion of the work under this Agreement to keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by CONTRACTOR in connection with the work.

(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the CONTRACTOR on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the DISTRICT, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection upon request by the public or copies thereof made; provided, however, that a request by the public shall be made through either the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the CONTRACTOR, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the CONTRACTOR.

(4) The form of certification shall be as follows:

I, ______________ (Name-print), the undersigned, am ______________ (position in business) with the authority to act for and on behalf of

______________________________ (Name of business and/or CONTRACTOR),
certify under penalty of perjury that the records or copies thereof submitted and consisting of
(description, number of pages) are the originals or true, full and correct copies of the originals which depict the payroll record(s) of the actual disbursements by way of cash, check, or whatever form to the individual or individuals named.

Dated: _____ Signature: ____________________________________________________________

(c) Contractor shall file a certified copy of the payroll records enumerated in subdivision (a) with the entity that requested the records within ten (10) days after receipt of a written request. In the event that the CONTRACTOR fails to comply within the 10-day period, the CONTRACTOR shall, as a penalty to the DISTRICT, forfeit Twenty-Five Dollars ($25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. 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.

(d) Any copy of payroll records made available for inspection as copies and furnished upon request to the public by the DISTRICT, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the CONTRACTOR shall not be marked or obliterated.

(e) The CONTRACTOR shall inform the DISTRICT of the location of the payroll records enumerated under subdivision (a), including the street address, city and county, and shall, within five (5) working days, provide a written notice of a change of location and address.

(f) It shall be the responsibility of the CONTRACTOR to ensure compliance with the provisions of this Article 50 and the provisions of Labor Code Section 1776.

ARTICLE 52. APPRENTICES

(a) The CONTRACTOR acknowledges and agrees that, if this Agreement involves a dollar amount greater than or a number of working days greater than that specified in Labor Code Section 1777.5, this Agreement is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of the CONTRACTOR to ensure compliance with this Article 51 and with Labor Code Section 1777.5 for all apprenticesing occupations.

(b) Apprentices of any crafts or trades may be employed and, when required by Labor Code Section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

(c) Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered.
(d) Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4 (commencing at Section 3070), Division 3 of the Labor Code, are eligible to be employed on public works. The employment and training of each apprenticeship shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he or she is training.

(e) Pursuant to Labor Code Section 1777.5, the CONTRACTOR and any subcontractors employing workers in any apprenticeship craft or trade in performing any work under this Agreement shall employ apprentices in at least the ratio set forth in Section 1777.5 and apply to the applicable joint apprenticeship committee for a certificate approving the CONTRACTOR or subcontractor under the applicable apprenticeship standards for the employment and training of apprentices.

(f) Every contractor and subcontractor shall submit contract award information to the applicable joint apprenticeship committee which shall include an estimate of journeyman hours to be performed under the Agreement, the number of apprentices to be employed and the approximate dates the apprentices will be employed.

(g) If the CONTRACTOR or subcontractor willfully fails to comply with Labor Code Section 1777.5, then, upon a determination of noncompliance by the Chief of the Division of Apprenticeship Standards, the CONTRACTOR or subcontractor shall be subject to the penalties imposed under Labor Code Section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council.

(h) The CONTRACTOR and all subcontractors shall comply with Labor Code Section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

(i) CONTRACTOR shall become fully acquainted with the law regarding apprentices prior to commencement of the work. Special attention is directed to Sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and Title 8, California Code of Regulations, Section 200, et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 8th Floor, San Francisco, California 94102, (415) 703-4920.

**ARTICLE 53. LABOR - FIRST AID**

The CONTRACTOR shall maintain emergency first aid treatment for CONTRACTOR's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C.A., Sec. 651, et seq.).

**ARTICLE 54. PROTECTION OF PERSONS AND PROPERTY**

(a) The CONTRACTOR shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Agreement and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the DISTRICT. CONTRACTOR shall provide such heat, covering, and enclosures as are necessary to protect all work, materials, equipment, appliances, and tools against damage.
by weather conditions. All work shall be solely at the CONTRACTOR's risk with the exception of damage to the work caused by "acts of God" as defined in Public Contract Code Section 7105.

(b) CONTRACTOR shall take, and require subcontractors to take, all necessary precautions for safety of workers and shall comply with all applicable federal, state, local and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to the work site and to provide a safe and healthful place of employment. CONTRACTOR shall furnish, erect and properly maintain at all times, as directed by DISTRICT or ARCHITECT or required by conditions and progress of work, all necessary safety devices, safeguards, construction canopies, signs audible devices for protection of the blind, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction. CONTRACTOR shall designate a responsible employee, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety and health of workers. Name and position of person so designated shall be reported in writing to DISTRICT by CONTRACTOR. CONTRACTOR shall correct any violations of safety laws, standards, orders, rules, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, such violation shall be corrected immediately by the CONTRACTOR at CONTRACTOR's expense.

(c) In an emergency affecting safety of person or of work or of adjoining property, CONTRACTOR, without special instruction or authorization from ARCHITECT or DISTRICT, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury; and CONTRACTOR shall so act if so authorized or instructed by Architect or DISTRICT. Any compensation claimed by CONTRACTOR on account of emergency work shall be determined by written agreement with the DISTRICT.

(d) CONTRACTOR shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.

(e) CONTRACTOR shall (unless waived by the DISTRICT in writing):

(1) When performing construction on existing sites, become informed and take into specific account the maturity of the students on the site; perform work which may interfere with school routine before or after school hours; enclose working area with a substantial barricade; not allow any unauthorized individuals on the site; require all workers on the Project to be conspicuously identified either by a firm logo on their clothing or prominent identification badge and arrange work to cause a minimum amount of inconvenience and danger to students and faculty in their regular school activities.

(2) Provide substantial barricades around any shrubs or trees indicated to be preserved.

(3) Deliver materials to building area over route designated by ARCHITECT.
(4) When directed by DISTRICT, take preventive measures to eliminate objectionable dust.

(5) Enforce all instructions of DISTRICT and ARCHITECT regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on construction site.

(6) Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved civil engineer at no cost to the DISTRICT.

(7) CONTRACTOR must confine all construction activity within the identified project parameters. Any work that must take place outside construction parameters must be approved by the DISTRICT in writing 48 hours in advance of work proceeding.

(8) CONTRACTOR parking must be as approved by the DISTRICT only.

**ARTICLE 55. NON-DISCRIMINATION**

In the performance of the terms of this Agreement, CONTRACTOR agrees that it will not engage in nor permit such subcontractor as it may employ to engage in unlawful discrimination in employment of persons because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, age or sex of such persons.

**ARTICLE 56. SCHEDULE OF VALUES AND PERIODICAL ESTIMATES**

(a) CONTRACTOR shall furnish on form(s) approved by DISTRICT:

(1) Within ten (10) calendar days of Notice to Proceed a detailed schedule of values giving complete breakdown of contract price for each component of the Project or site which shall include all subcontractor/supplier agreements showing dollar amounts of these agreements to justify the schedule of values; and

(2) A periodical itemized estimate of work done for purpose of making partial payments thereon. Change order work shall be clearly identified on a separate schedule of values.

(3) Within ten (10) calendar days of request of DISTRICT, a schedule of estimated monthly payments which shall be due CONTRACTOR under the Agreement.

(b) Values employed in making up any of these schedules are subject to the ARCHITECT's written approval and will be used only for determining basis of partial payments and will not be considered as fixing a basis for additions to or deductions from contract price.
ARTICLE 57. CONTRACTOR CLAIMS

If the CONTRACTOR shall claim compensation for any damage sustained by reason of the acts of the DISTRICT or its agents, CONTRACTOR shall, within five (5) calendar days after sustaining of such damage, make to the ARCHITECT a written statement of the damage sustained. On or before the 15th day of the month succeeding that in which such damage shall have been sustained the CONTRACTOR shall file with the DISTRICT an itemized statement of the details and amount of such damage, and unless such statement shall be made as thus required, CONTRACTOR's claims for compensation shall be forfeited and invalidated and it shall not be entitled to consideration for payment on account of any such damage.

ARTICLE 58. DISPUTES - ARCHITECT'S DECISIONS

(a) The ARCHITECT shall, within a reasonable time, make decisions on all matters relating to the CONTRACTOR’s execution and progress of the work. The decisions of the ARCHITECT shall not be binding, but shall be advisory only on the CONTRACTOR for the purpose of CONTRACTOR’s obligation to proceed with the work.

(b) Except for tort claims, all claims by the CONTRACTOR for a time extension, payment of money or damages arising from work done by, or on behalf of, the CONTRACTOR pursuant to the Agreement and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or as to the amount of payment which is disputed by the DISTRICT of Three Hundred Seventy Five Thousand Dollars ($375,000) or less shall be subject to the settlement procedures set forth in Public Contract Code Section 20104, et seq. which provisions are incorporated herein by reference.

(c) In the event of a dispute between the parties as to performance of the work, the interpretation of this Agreement or payment or nonpayment for work performed or not performed, the parties shall attempt to resolve the dispute. Pending resolution of the dispute, CONTRACTOR agrees to continue the work diligently to completion. If the dispute is not resolved, CONTRACTOR agrees it will neither rescind the Agreement nor stop the progress of the work, but CONTRACTOR's sole remedy shall be to submit such controversy to determination by a court of the State of California, in Orange County, having competent jurisdiction of the dispute, after the Project has been completed, and not before.

ARTICLE 59. PAYMENTS

(a) Unless otherwise specified in writing, each month within thirty (30) days after receipt by the DISTRICT of the monthly progress schedule and an undisputed, properly submitted payment request from CONTRACTOR which has been certified for payment by the Architect, there shall be paid to CONTRACTOR a sum equal to ninety percent (90%) of value of work performed and of materials delivered to the jobsite and inspected and approved by the inspector of record and subject to or under the control of the DISTRICT and unused up to the last day of the previous month, less aggregate previous payments. Public Contract Code Section 20104.50

(b) Monthly payments shall be made only on the basis of monthly estimates which shall be prepared by CONTRACTOR on a form approved by DISTRICT and filed on the twentieth (20th) day of the month preceding that month within which payment is to be made. Work completed as estimated shall be an estimate only and no
inaccuracy or error in said estimate shall operate to release CONTRACTOR or Surety from any damages arising from such work or from enforcing each and every provision of this Agreement, and DISTRICT shall have the right subsequently to correct any error made in any estimate for payment. DISTRICT shall review draft pay applications and notify CONTRACTOR of status by the twenty-fifth (25th) of the month preceding that month within which payment is to be made. CONTRACTOR shall not be entitled to have any payment estimates processed or be entitled to have any payment of work performed so long as any lawful or proper direction concerning work, or any portion thereof, given by the DISTRICT shall remain un-complied with by the CONTRACTOR. CONTRACTOR agrees to ten percent (10%) retention on all progress payments. Public Contract Code Section 9203.

(c) DISTRICT has discretion to require from the CONTRACTOR any of the following information with the application for payment: (i) certified payroll covering the period of the prior application for payment; (ii) unconditional waivers and releases from all subcontractors/suppliers for which payment was requested under the prior application for payment; and/or (iii) receipts or bills of sale for any items. CONTRACTOR agrees that payment may be contingent upon District receiving any one or more of these documents.

(d) Before payment is made hereunder, a certificate in writing shall be obtained from the ARCHITECT stating that the work for which the payment is demanded has been performed in accordance with the terms of the Project Documents and that the amount stated in the certificate is due under the terms of the Project Documents, which certificate shall be attached to and made a part of the claim made and filed with the DISTRICT, provided that if the ARCHITECT shall, within three (3) days after written demand therefore, fail to deliver such certificate to the DISTRICT, the CONTRACTOR may file its claim with the DISTRICT without said certificate, but together with such claim shall be filed a statement that demand was made for such certificate and that the same was refused. Thereupon, the DISTRICT will either allow said claim as presented or shall, by an order entered on the minutes of said DISTRICT state the reasons for refusing to allow said claim. It is understood, moreover, that the certificate of the ARCHITECT shall not be conclusive upon the DISTRICT, but advisory only.

(e) Four original signed, notarized copies of pay application shall be submitted to the DISTRICT by the last day of the month. Upon receipt of CONTRACTOR’s payment request, DISTRICT shall review the payment request as soon as practicable after receipt for the purpose of determining that the payment request is proper. Any payment request determined not to be proper shall be returned to the CONTRACTOR as soon as practicable but not later than seven (7) days after receipt and shall be accompanied by a document setting forth in writing the reasons(s) why the payment request was not proper. Public Contract Code Section 20104.50

(f) No payment by DISTRICT hereunder shall be interpreted so as to imply that DISTRICT has inspected, approved or accepted any part of the work.

(g) Unless otherwise provided, on or before making request for final payment of the undisputed amount due under the Agreement, CONTRACTOR shall submit to DISTRICT, in writing a summary of all claims for compensation under or arising out of this Agreement which were timely filed. The acceptance by CONTRACTOR of the payment of the final amount shall constitute a waiver of all claims against DISTRICT under or arising out of this Agreement, except those previously made, in a timely manner and in writing, and identified by CONTRACTOR as unsettled at the time of CONTRACTOR’s final request for payment.
(h) CONTRACTOR shall pay each of its subcontractors from whom retention has been withheld each subcontractor’s share of the retention received within seven (7) days from the time that all or any portion of the retention are received by the CONTRACTOR subject to any limitations set forth in Public Contract Code Section 7107(e).

(i) The final payment of the ten percent (10%) retention of the value of the work done under this Agreement, if unencumbered, shall be made thirty-five (35) days after recording by the DISTRICT of the Notice of Completion at the County Recorder’s Office. Approval of completion of the project will be made only by action of the governing board of the DISTRICT. Public Contract Code Section 7107.

ARTICLE 60. CHANGES AND EXTRA WORK

(a) DISTRICT may, as provided by law and without affecting the validity of this Agreement, order changes, modifications, deletions and extra work by issuance of written change orders from time to time during the progress of the Project, contract sum being adjusted accordingly. All such work shall be executed under conditions of the original Agreement except that any extension of time caused thereby shall be adjusted at time of ordering such change. DISTRICT has discretion to order changes on a “time and material” basis with adjustments to time made after CONTRACTOR has justified through documentation the impact on the critical path of the Project.

(b) Notwithstanding any other provision in the Project Documents, the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in a change order shall constitute the entire compensation and/or adjustment in the contract time due CONTRACTOR arising out of the change in the work covered by the change order unless otherwise provided in the change order. The amount of the compensation due CONTRACTOR shall be calculated pursuant to subparagraph (e) of this Article 59. The entire compensation shall not include any additional charges not set forth in subparagraph (e) and shall not include delay damages (due to processing of a change order, refusal to sign a change order) indirect, consequential, and incidental costs including any project management costs, extended home office and field office overhead, administrative costs and profit other than those amounts authorized under subparagraph (e) of this Article 59.

(c) In giving instructions, ARCHITECT shall have authority to make minor changes in work, not involving change in cost, and not inconsistent with purposes of the Project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from DISTRICT, authorized by action of the governing board, and no claim for addition to contract sum shall be valid unless so ordered.

(d) If the ARCHITECT determines that work required to be done constitutes extra work outside the scope of the Agreement, the ARCHITECT shall send a request for a detailed proposal to the CONTRACTOR. CONTRACTOR will respond with a detailed proposal within five (5) calendar days of receipt of the Request for Proposal which shall include a complete itemized cost breakdown of all labor and materials showing actual quantities, hours, unit prices, and the wage rates required for the change. If the change order involves a change in construction time, a request for the time change shall accompany the change order cost breakdown. All such requests for time shall be specified by CONTRACTOR as either “work days” or “calendar days.” Any request for time received with only the designation of “days” shall be considered calendar days. The term “work days” as used in this paragraph shall mean Monday through Friday, excluding Saturdays, Sundays and federal/State of California observed holidays. If the work is to be performed by a subcontractor, CONTRACTOR must include
a bid from the subcontractor containing the same detailed information as required for CONTRACTOR. No extensions of time will be granted for change orders that, in the opinion of the ARCHITECT, do not affect the critical path of the Project.

(e) Value of any such extra work, change, or deduction shall be determined at the discretion of DISTRICT in one or more of the following ways:

(1) By mutual written acceptance of a lump sum proposal from CONTRACTOR properly itemized and supported by sufficient substantiating data to permit evaluation by DISTRICT and ARCHITECT.

(2) By unit prices contained in CONTRACTOR's original bid and incorporated in the Project Documents or fixed by subsequent agreement between DISTRICT and CONTRACTOR.

(3) By cost of material and labor and percentage for overhead and profit ("time and material"). If the value is determined by this method the following requirements shall apply:

(A) Daily Reports by Contractor.

(i) General. At the close of each working day, the CONTRACTOR shall submit a daily report to the ARCHITECT and the Inspector, on forms approved by the DISTRICT, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, and for other services and expenditures when authorized concerning extra work items. An attempt shall be made to reconcile the report daily, and it shall be signed by the ARCHITECT and the CONTRACTOR. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the CONTRACTOR.

(ii) Labor. The report shall show names of workers, classifications, and hours worked and hourly rate. Project Superintendent expenses are not allowed.

(iii) Materials. The report shall describe and list quantities of materials used and unit cost.

(iv) Equipment. The report shall show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable, and hourly/daily cost.

(v) Other Services and Expenditures. Other services and expenditures shall be described in such detail as the DISTRICT may require.

(B) Basis for Establishing Costs
(i) Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft classification or type of workers at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from federal, state or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. The use of labor classification which would increase the extra work cost will not be permitted unless the CONTRACTOR establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.

(ii) Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the work site in the quantities involved, plus sales tax, freight and delivery. The DISTRICT reserves the right to approve materials and sources of supply, or to supply materials to the CONTRACTOR if necessary for the progress of the work. No markup shall be applied to any material provided by the DISTRICT.

(iii) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of $100 or less or where an invoice is not provided.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental source, or distributors, at the time the work is performed. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included.

If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the DISTRICT than holding it at the work site, it shall be returned, unless the CONTRACTOR elects to keep it at the work site at no expense to the DISTRICT.

All equipment shall be acceptable to the ARCHITECT, 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.

(iv) Other Items. The DISTRICT may authorize other items which may be required on the extra work. Such items include labor, services, material and equipment which are different in their nature from those required by the work and which are of a type not ordinarily available from the CONTRACTOR or any of the subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.

(v) Invoices. Vendors' invoices for material, equipment rental, and other expenditures, shall be submitted with the request for payment. If the request for payment is not
substantiated by invoices or other documentation, the DISTRICT may establish the cost of the item involved at the lowest price which was current at the time of the report.

(C) The following form shall be used as applicable by the DISTRICT and CONTRACTOR to communicate proposed additions and deductions to the Agreement.

EXTRA CREDIT

i. Material/Equipment (attach itemized quantity and unit cost plus sales tax)  
ii. Labor (attach itemized hours and rates)  
iii. Subtotal  
iv. If subcontractor performed work, add Subcontractor's overhead and profit to portions performed by it, not to exceed 15% of Item iii. above  
v. Subtotal  
vi. General Contractor's Overhead and Profit, not to exceed 15% of Item v if Contractor performed the work. If subcontractor performed the work, not to exceed 5% of Item v. Of portions performed by Contractor and subcontractors, portions performed by Contractor shall not exceed 15% of Item v, and portions performed by Subcontractor shall not exceed 5% of Item v.  
vii. Subtotal  
ix. Total  

(4) It is expressly understood that the value of such extra work or changes, as determined by any of the aforementioned methods, expressly includes any and all of the CONTRACTOR's costs and expenses, both direct and indirect, resulting from additional time required on the project, or resulting
from delays to the Project. Any costs or expenses not included are deemed waived. For purposes of determining the cost, if any, of any extra work, change, addition or omission hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to CONTRACTOR, and CONTRACTOR shall ensure that such discounts, rebates, refunds and returns may be secured, and the amount thereof shall be allowed as a reduction of CONTRACTOR’S cost in determining the actual cost of construction for purposes of any extra work, change addition or omission in the work as provided herein.

(f) If the CONTRACTOR should claim that any instruction, request, drawing, specification, action, condition, omission, default, or other situation obligates the DISTRICT to pay additional compensation to CONTRACTOR or to grant an extension of time, or constitutes a waiver of any provision in the Agreement, CONTRACTOR shall notify the DISTRICT, in writing, of such claim within five (5) calendar days from the date CONTRACTOR has actual or constructive notice of the factual basis supporting the claim. The notice shall state the factual bases for the claim and cite in detail the Project Documents (including plans and specifications) upon which the claim is based. The CONTRACTOR’s failure to notify the DISTRICT within such five (5) day period shall be deemed a waiver and relinquishment of such a claim. If such notice be given within the specified time, the procedure for its consideration shall be as stated above in these General Conditions.

(g) “PROHIBITED USAGE OF CONTRACTOR QUALIFYING LANGUAGE STAMPS ON DISTRICT DRAWINGS OR CONTRACT FORMS.” Contractor shall not countersign or endorse any form, drawing, change order, contract or other documents with any conditions not mutually agreed to in advance by the DISTRICT and the CONTRACTOR. Endorsement of a contract, change order, specification, drawing or form with the following: “This change order is being executed without waiver of the right to seek additional compensation for such services,” shall be of no legal force or effect.

ARTICLE 61. COMPLETION

(a) The DISTRICT shall accept completion of the Project and have the Notice of Completion recorded within ten (10) days of acceptance of completion of the Project when the entire work including punch list items shall have been completed to the satisfaction of the DISTRICT. Civil Code Section 3093. The work may only be accepted as complete by action of the DISTRICT’s Governing Board.

(b) However, the DISTRICT, at its sole option, may accept completion of the Project and have the Notice of Completion recorded when the entire work including individual portions of the work shall have been completed to the satisfaction of the DISTRICT, except for minor corrective items, as distinguished from incomplete items.

(c) A final walk through of the Project to determine completion and to record the Notice of Completion shall occur only upon a valid claim by CONTRACTOR that the Project is complete except for minor corrective items. Any erroneous claims of completion by CONTRACTOR resulting in a premature walk through shall be at CONTRACTOR’s sole cost and expense and DISTRICT shall make adjustments to the contract price by reducing the amount thereof to pay for any costs incurred by the DISTRICT due to the erroneous claims by the CONTRACTOR that the Project is complete. Minor corrective items shall be identified in the final walk through of the Project.
(d) If the CONTRACTOR fails to complete the minor corrective items prior to the expiration of the thirty-five (35) day period immediately following recording of the Notice of Completion, the DISTRICT shall withhold from the final payment an amount equal to one hundred fifty percent (150%), as determined by the DISTRICT, of the amount of each item until such time as the item is completed. Public Contract Code Section 7107. At the end of such 35-day period, if there are items remaining to be corrected, the DISTRICT may elect to proceed as provided in Article 61(b) entitled "Adjustments to Contract Price."

**ARTICLE 62. ADJUSTMENTS TO CONTRACT PRICE**

(a) If CONTRACTOR defaults or neglects to carry out the work in accordance with the Project Documents or fails to perform any provision thereof, DISTRICT may, after ten (10) days written notice to the CONTRACTOR and without prejudice to any other remedy it may have, make good such deficiencies.

(b) The DISTRICT shall adjust the total contract price by reducing the amount thereof by the cost of making good such deficiencies. If DISTRICT deems it inexpedient to correct work not done in accordance with the Project Documents, an equitable reduction in the contract price shall be made therefore.

**ARTICLE 63. CORRECTION OF WORK**

(a) CONTRACTOR shall promptly remove all work identified by DISTRICT as failing to conform to the Project Documents, whether incorporated or not. CONTRACTOR shall promptly replace and re-execute its own work to comply with Project Documents without additional expense to DISTRICT and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

(b) If CONTRACTOR does not remove such work within a reasonable time, fixed by written notice, DISTRICT may remove it and may store the material at CONTRACTOR's expense. If CONTRACTOR does not pay expenses of such removal within ten (10) days' time thereafter, DISTRICT may, upon ten (10) days written notice, sell such materials at auction or at private sale and shall account for net proceeds thereof, after deducting all costs and expenses that should have been borne by CONTRACTOR.

**ARTICLE 64. EXTENSION OF TIME - LIQUIDATED DAMAGES**

(a) The CONTRACTOR and DISTRICT hereby agree that the exact amount of damages for failure to complete the work within the time specified is extremely difficult or impossible to determine. CONTRACTOR shall be assessed liquidated damages for each and every day the work required under the Project Documents remains unfinished past the time for completion, as set forth in the Agreement, and any extensions of time granted by the DISTRICT to the CONTRACTOR under the terms of the Project Documents. The CONTRACTOR will pay to the DISTRICT or DISTRICT may retain from amounts otherwise payable to the CONTRACTOR, said amount for each day after failure to meet the requirements of the contract completion as scheduled in the Agreement. Government Code Section 53069.85 For purposes of this article, the work shall be considered "complete" in accordance with the provisions of Article 60, "COMPLETION", except that the work may be considered complete without formal acceptance by the DISTRICT Governing Board so long as the Governing Board, at its next regularly scheduled meeting, accepts the work.
(b) CONTRACTOR shall not be charged for liquidated damages, as set forth above, because of any delays in completion of work which are not the fault or negligence of CONTRACTOR, including but not restricted to acts of God. CONTRACTOR shall within ten (10) days of beginning of any such delay, notify DISTRICT in writing of causes of delay. CONTRACTOR shall provide documentation and justification to substantiate the delay and its relation to the Project's critical path. DISTRICT shall ascertain the facts and extent of delay and grant extension of time for completing work when, in its judgment, the findings of fact justify such an extension. The DISTRICT's finding of fact thereon shall be final and conclusive on the parties hereto. Extension of time shall apply only to that portion of work affected by the delay, and shall not apply to other portions of work not so affected.

ARTICLE 65. PAYMENTS WITHHELD

(a) In addition to amount which DISTRICT may retain under Article entitled "COMPLETION" and Article entitled "PAYMENTS," DISTRICT may withhold a sufficient amount or amounts of any payment or payments otherwise due to CONTRACTOR, as in its judgment may be necessary to cover:

(1) Payments which may be past due and payable for just claims against CONTRACTOR or any subcontractors, or against and about the performance of work on the Project, including, without limitation, payments made pursuant to the Article entitled "PAYMENTS BY CONTRACTOR."

(2) The cost of defective work which CONTRACTOR has not remedied.

(3) Liquidated damages assessed against CONTRACTOR.

(4) Penalties for violation of labor laws.

(5) The cost of materials ordered by the DISTRICT pursuant to Article 33 entitled "MATERIALS AND WORK."

(6) The cost of completion of this Agreement if there exists a reasonable doubt that this Agreement can be completed for the balance then unpaid to CONTRACTOR.

(7) Damage to DISTRICT, another contractor, or subcontractor.

(8) Site clean-up as provided in Article 44 entitled "CLEANING UP."

(9) Payments to indemnify, defend, or hold harmless the DISTRICT.

(10) Any payments due to the District including but not limited to payments for failed tests, utilities or imperfections.

(11) Extra services for ARCHITECT.
(12) Extra services for the INSPECTOR including but not limited to reinspection required due to CONTRACTOR’s failed tests or installation of unapproved or defective materials and CONTRACTOR’s requests for inspection and CONTRACTOR’s failure to attend the inspection.

(13) Failure of CONTRACTOR to submit on a timely basis, proper and sufficient documentation required by the Project Documents, including without limitation, monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed change orders and verified reports.

(14) Any other obligation(s) of the DISTRICT which the DISTRICT is authorized and/or compelled by law to perform.

(b) If the above grounds are in the opinion of the DISTRICT removed by or at the expense of CONTRACTOR, payment shall be made for amounts withheld because of them.

(c) DISTRICT may apply such withheld amount or amounts to payment of such claims or obligations at its discretion. In so doing, DISTRICT shall make such payments on behalf of CONTRACTOR. If any payment is so made by DISTRICT, then such amount shall be considered as a payment made under contract by DISTRICT to CONTRACTOR and DISTRICT shall not be liable to CONTRACTOR for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligations. DISTRICT will render CONTRACTOR an accounting of such funds disbursed on behalf of CONTRACTOR.

(d) As an alternative to payment of such claims or obligations, DISTRICT, in its sole discretion, may reduce the total contract price as provided in Article 61 entitled "ADJUSTMENTS TO CONTRACT PRICE."

ARTICLE 66. TAXES

(a) CONTRACTOR will pay all applicable federal, state and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Project Documents.

(b) 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 for its exclusive use, the DISTRICT, upon request, will execute documents necessary to show (1) that the DISTRICT is a political subdivision of the State for the purposes of such exemption and (2) that the sale is for the exclusive use of the DISTRICT. No excise tax for such materials shall be included in any bid price.

ARTICLE 67. NO ASSIGNMENT

The CONTRACTOR shall not assign, transfer, convey, sublet or otherwise dispose of this Agreement or of its rights, title or interest in or to the same or any part thereof. If the CONTRACTOR shall assign, transfer, convey, sublet or otherwise dispose of the Agreement or its right, title or interest therein, or any part thereof, such attempted or purported assignment, transfer, conveyance, sublease or other disposition shall be null, void and of no legal effect whatsoever; and the Agreement may, at the option of the DISTRICT, be terminated,
revoked and annulled, and the DISTRICT shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the CONTRACTOR, and to its purported assignee or transferee.

**ARTICLE 68. NOTICE**

Any notice from one party to the other or otherwise under the Agreement shall be in writing and shall be dated and signed by party giving such notice or by a duly authorized representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

1. If notice is given to DISTRICT, by personal delivery thereof to DISTRICT, or by depositing same in United States mail, enclosed in a sealed envelope addressed to DISTRICT, and sent by registered or certified mail with postage prepaid;

2. If notice is given to CONTRACTOR, by personal delivery thereof to said CONTRACTOR, or to CONTRACTOR's superintendent at site of Project, or by depositing same in United States mail, enclosed in a sealed envelope addressed to said CONTRACTOR at its regular place of business or at such address as may have been established for the conduct of work under this Agreement, and sent by registered or certified mail with postage prepaid;

3. If notice is given to surety or other persons, by personal delivery to such surety or other person, or by depositing same in United States mail, enclosed in a sealed envelope, addressed to such surety or person at the address of such surety or person last communicated by surety or other person to party giving notice, and sent by registered or certified mail with postage prepaid.

**ARTICLE 69. NO WAIVER**

The failure of the DISTRICT in any one or more instances to insist upon strict performance of any of the terms of this Agreement or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion.

**ARTICLE 70. NON-UTILIZATION OF ASBESTOS MATERIAL**

(a) The CONTRACTOR will be required to execute and submit the Certificate Regarding Non-Asbestos Containing Materials.

(b) Should asbestos containing materials be installed by the CONTRACTOR in violation of this certification, or if removal of asbestos containing materials is part of the Project, decontaminations and removals will meet the following criteria:

1. Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency (EPA).
(2) The asbestos removal contractor shall be an EPA accredited contractor qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant who shall have sole discretion and final determination in this matter.

(3) The asbestos consultant shall be chosen and approved by the DISTRICT who shall have sole discretion and final determination in this matter.

(4) The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

(c) Cost of all asbestos removal, including, but not necessarily limited to the cost of the asbestos removal contractor, the cost of the asbestos consultant, analytical and laboratory fees, time delays and additional costs as may be incurred by the DISTRICT shall be borne entirely by the CONTRACTOR.

(d) Hold Harmless: Interface of work for the Project with work containing asbestos shall be executed by the CONTRACTOR at his/her risk and at his/her discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of the Agreement, the CONTRACTOR acknowledges the above and agrees to hold harmless the DISTRICT, its Governing Board, employees, agents, and ARCHITECT and assigns for all asbestos liability which may be associated with this work. The CONTRACTOR further agrees to instruct his/her employees with respect to the above mentioned standards, hazards, risks and liabilities.

**ARTICLE 71. LEAD**

Pursuant to the Lead-Safe Schools Protection Act (Education Code Sections 32240, et seq.) and other applicable law, the CONTRACTOR shall not use lead-based paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or the modernization or renovation of any existing school facility.

**ARTICLE 72. GOVERNING LAW**

The laws of the State of California shall govern the Project and the Agreement.
**SUPPLEMENTARY CONDITIONS**

**SCHEDULE OF SUBMITTALS**

(a) The following groups of shop drawings and submittals shall be delivered to the District not later than the below listed dates, all submittals shall be submitted using the R2A Architecture cover page located in Division One:

   i. Product data, shop drawings, samples, draw-downs, etc.
      Due: 2 weeks from the date of executed Agreement
   ii. Job Site Safety Analysis, Injury Illness Prevention Plan:
      Due: 2 weeks from the date of executed Agreement
   iii. Shoring/Bracing Plan
      Due: 2 weeks from the date of executed Agreement

**ADDITIONAL CONDITIONS**

(a) Contractor is responsible to provide, install, maintain, and remove temporary plywood with a no scratch surface protection on surfaces of roofing, walls, floors, and waterproofing that, in the determination of the District, will be subject to damage during Contractor’s work.

(b) Contractor shall provide an on-site English-speaking representative with a cellular phone, the phone number shall be provided to the District at the time of Contractor mobilization.

(c) The contractor is to completely roll up all materials, tools, and miscellaneous items and render them safe at end of day’s work. Contractors may be allowed the use of job boxes with written consent from the District. At no time is material to be stockpiled outside of construction fencing.

(d) Contractor includes provision for a detailed procurement log to track long lead items, as defined by items taking longer than 2 weeks to obtain. The log is, to be completed in spreadsheet format. The log shall contain the supplier’s contact information, including name, address and telephone number. Include lead times, proposed ship date, and date to site. The Contractor, by way of this agreement, authorizes the Construction Manager to contact Suppliers and Manufacturers to verify payment, procurement, order confirmations, etc.

**INCLUSIONS**

1) All portions of the project will include the Division 0 bid documents, general conditions and this supplemental conditions section.
2) The following items are specifically included in the Fine Arts Complex Art Department Structural Repair scope of this Contract:

(a) Drawings and Specifications

<table>
<thead>
<tr>
<th>Drawings: Saddleback College Fine Arts Complex Art Department Structural Repairs Dated 02.16.10</th>
<th>Specifications: Saddleback College Fine Arts Complex Art Department Structural Repairs Dated 02.16.10</th>
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(b) Contractor to provide and install all necessary shoring/bracing required to support and raise the existing sagging roof structure while repairs are being made. Contractor to compose a shoring plan.
demonstrating a comprehensive approach to maintain structural integrity of the existing building while repairs are being made.

(c) Contractor to remove, palletize, inventory, label, and deliver to the District all window coverings as directed by the District/Architect. Contractor to properly package and deliver window coverings to a location to be specified by the District.

(d) Remove and salvage existing roofing and mechanical ducting as required. Contractor to store removed roofing and mechanical ducting in lay down area which is identified by the District. Include load, unload, ship, and inventory salvaged materials.

(e) Roofing installer must be a Garland approved installer and obtain approval of all work from the Garland manufacturer representative.

(f) Provide continuous backing/blocking for all new control joints in plaster per detail 18/A5.1.2. Coordinate locations of control joints with backing locations prior to installation. Contractor to provide a control joint layout drawing to Architect for approval prior to installation.

(g) Contractor to furnish and install temporary protection as required for existing electrical, mechanical, plumbing, and fire sprinkler systems. Contractor acknowledges that the building will be in occupied during construction and will take the appropriate measures to ensure that no false fire alarms are triggered. Contractor will be back-charged for any charges resulting in false fire alarms as a result of Contractor negligence.

(h) Contractor to verify that all wood members noted as existing to remain are in good condition and acceptable to receive new upgrades prior to commencement of rework. Contractor to notify the District in writing of any existing to remain members which are not acceptable or not existing as noted in the plans prior to commencement of work.

(i) Furnish and install all toilet partitions and accessories per detail and notes on A1.2.1. Reverse partition door at Women’s Restroom and provide hardware as noted including locking mechanism. Provide and install new blocking and bracing as required for new or relocated door. Cut and patch walls as required and provide new paint to match existing on top of all wall patches. Patch all holes in flooring as required to provide a finished look. Terminate painting at the nearest inside corner. Contractor is responsible for caulking around the bottoms and ceiling of the relocated or new partitions.

Supplementary Conditions 00800
Page 3
The following items are to be furnished and installed and are specifically included in the Fine Arts Complex New Exterior Finishes & Color Selection scope of this Contract:

(a)  Drawings and Specifications

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(b) Contractor to take special care not to damage any building elements while removing vegetation. Contractor to exercise special regard to trim only vegetation that interferes with application of new finishes; excessive removal of existing vegetation will not be acceptable. Any damages to building elements will be the sole responsibility of the Contractor. Application of finishes should proceed swiftly after written acceptance of substrate has been received through District representative. All areas shall be identified and acceptance requested in small, localized sections of the building (i.e., “West Elevation of Room #XXX” and similar). It will not be satisfactory to request acceptance of large areas of the building (i.e. “West Elevation of the Building” or similar).
ALLOWANCES

Contractor includes the following allowances as a part of its contract amount. Allowances may be used only upon written direction from the District Representative, and shall require daily verification of time and materials used. Any unused portion of allowances shall be credited back to District at the conclusion of the project.

(a) This Contract shall include an allowance of Fifty Thousand Dollars ($50,000) for use by the Owner for miscellaneous conditions. Work under this allowance will only commence upon specific written direction from the District. Field tickets must be signed by the District on a daily basis to account for the daily cost to be allocated towards this allowance. All cost associated with this allowance shall be tracked and all money not spent will be credited to the District at the end of this phase of work.
PROJECT MANUAL
for:

Saddleback College Fine Arts Complex
Art Department Structural Repairs

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692-3635

Prepared By:

R²A Architecture
2900 Bristol Street, Suite E-205
Costa Mesa, CA 92626
(714) 435-0380

Project Number 9014.00
02.16.10
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</tbody>
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SECTION 01100 - Summary

PART 1 - General

1.1 Related Documents

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

1.2 Summary

A. Project Name: Fine Arts Complex Art Department Structural Repairs.

B. Project Location: Saddleback College, 28000 Marguerite Parkway, Mission Viejo, CA 92692

C. Owner: South Orange County Community College District, 28000 Marguerite Parkway, Mission Viejo, CA 92692

D. Owner's Representative: John Ozurovich & Walter Rice.


F. The Work consists of the following:

1. Demolition of existing interior and exterior finishes and wood framing. Remove existing window wall framing and glass. Repair sag in structure framing. Reframe to fill in openings, flashings and weather proofing for a weathertight enclosure. Install new roofing and underlayments. Provide interior and exterior finishes, including gypsum board, exterior plaster and painting. Work to be provided in four locations within Fine Arts Complex.

G. Provide all labor, materials, equipment, freight, taxes, services and administration to complete the Work.

H. The Bid Drawings and Specifications indicate the scope of the Work in terms of the design concept, the dimensions of the Work, and the elements of construction. The Bid Drawings and Specifications do not necessarily indicate or describe all Work required for the full performance and completion of the Work. Contractor shall be solely responsible for the inclusion of adequate amounts in the bid price to include all items, regardless of whether items are indicated, described, implied, or necessary in order to produce a completed Project. Decisions by the Owner’s Representative as to the items of Work included within the scope of these Drawings and Contract Documents shall be final and binding on the Contractor.

I. A project inspector employed by the district (owner) and approved by the Division of the State Architect shall provide continuous inspection of the work. The duties of the inspector are defined in Section 4-342, Part 1, Title 24, CCR; Class 3.

1.3 Type of Contract

A. Single Prime Contract

1.4 Use Of Premises
A. Contractor shall have full use of premises for construction operations, including use of Project site, during construction period. Contractor’s use of premises is limited only by Owner’s right to perform work or to retain other contractors on portions of Project. Perform Work so as not to interfere with Owner’s day to day operations. Limit construction operations to the following days and times:

1. Monday through Friday: 7:00 a.m. to 5:00 p.m.

B. Smoking is not permitted within Building or Site, or within 25 feet of entrances, windows or air intakes.

C. Prior to pre-construction meeting, submit written/graphic construction plan describing intended use of construction site. Address the following items:

1. Daily work hours of construction personnel.
2. Parking area for construction personnel and visitors.
3. Staging area.
4. Delivery points.
5. Construction traffic patterns.
6. Construction office location.
7. Temporary toilet location.
9. Maximum number of workers expected in a single day.
10. Scaffold locations.
11. Temporary utility connection location(s)
13. Parking area for Owner, Architect and site visitors.

D. Review construction plan at pre-construction meeting and revise per comments received at meeting.

E. Keep driveways and entrances serving premises clear and available to Owner, Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

1. Schedule deliveries to minimize use of driveways and entrances.
2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
3. Schedule deliveries to avoid impact with Owner’s classes and operations.

F. Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

G. Contractor is aware that adjacent buildings are occupied. Contractor must conduct operations to ensure least inconvenience to public and occupied areas in adjacent buildings. Indicate adjacent building occupancy dates in construction schedule and coordinate construction activity with Owner.

1. Minimum noise impact on adjacent existing occupancies.
2. Minimum dust and debris impact on adjacent existing buildings and occupancies.
3. Maintain and provide pedestrian barricades and protection.
4. Maintain and protect exits from occupied areas at all times.

1.5 Owner’s Occupancy Requirements

A. Owner reserves the right to occupy areas of Work, before Substantial Completion, provided such installation does not interfere with completion of the Work. Such occupancy shall not constitute acceptance of the Work, or substantial completion.
1.6 Specification Conventions

A. The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Language used in the Specifications and other Contract Documents is abbreviated. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications and Drawings. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01100
SECTION 01250 - Contract Modification Procedures

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01320 “Construction Progress Documentation.”

1.2 Proposal Requests

A. Based upon Owner request for changes in scope, RFI responses or other forms of scope change, Architect will issue a detailed description, in the form of a Field Change Directive (FCD) that may require adjustment to the Contract Sum or Time. If necessary, the directive will include revised Drawings and Specifications.

1. Proposed Changes issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

2. Within 5 calendar days after receipt of proposed changes, submit a quotation estimating adjustments to the Contract Sum and the Contract Time necessary to execute the change.

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

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

   c. Include costs of labor and supervision directly attributable to the change.

   d. Include a proposed Contractor's Construction Schedule that indicates the effect, if any, of the change to the construction schedule. Including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

1.3 Change Order Procedures

A. On Owner's approval of a Proposal Request, issue a Change Order for signatures of Owner, Contractor and Architect on form provided by Owner.

B. Changes to the approved drawings and specifications shall be made by an addendum or a change order approved by the Division of the State Architect, as required by Section 4-338, Part 1, Title 24, CCR.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01250
SECTION 01290 - Payment Procedures

PART 1 - General

1.1 Related Documents

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

1.2 Schedule of Values

A. Submit Schedule of Values no later than 10 days after receipt of Notice to Proceed.

B. Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Include the following project identification on the Schedule of Values:

1. Project name and location.
2. Name of Architect.
3. Architect’s project number.
4. Contractor’s name and address.
5. Date of submittal.
6. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
7. Update and submit the Schedule of Values with each Application for Payment.
8. Arrange the Schedule of Values in tabular format with separate columns to indicate the following:

   a. Related specification sections.
   b. Description of Work.
   c. Name of Sub-Contractor.
   d. Approved change orders that affect value.
   e. Dollar value.
   f. Total contract sum of base contract.
   g. Total Contract sum with total of approved change orders added it.

10. Differentiate between items stored on site and items stored offsite. Include evidence of insured or bonded warehousing.

1.3 Applications For Payment

A. Make each Application for Payment consistent with previous applications and payments as certified by Architect and paid for by Owner. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment may involve additional requirements.

B. The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Submit Application for Payment to Architect on a day of each month agreed to by Owner, Contractor and Architect.

D. Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
E. Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Match data on the current Schedule of Values and current Construction Schedule.
2. Include amounts of Approved Change Orders issued before last day of construction period covered by application.

F. Submit 4 signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt. All copies shall include waivers of lien and other required attachments. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. With each Application for Payment, submit waivers and releases from every entity who is lawfully entitled to file a lien arising out of the Contract and related to the Work covered by the payment.

1. Submit conditional waiver and release upon progress payment on each item for amount requested in current application, after deduction for retainage, on each item.
2. Submit an unconditional waiver and release on each item for the amount paid in the previous application, prior to deduction for retainage.
3. When an application shows completion of an item, submit conditional waiver and release upon final payment.
4. Owner reserves the right to designate which entities involved in the Work must submit waivers.
5. Submit waivers of lien on forms, executed in a manner acceptable to Owner.
6. Within 10 (ten) days of receipt of payment that includes final payment on an item of Work, submit an unconditional waiver and release upon final payment for the item.

H. Administrative actions and submittals that must precede first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Construction Schedule.
5. List of Contractor's staff assignments.
8. Initial progress report.
10. Certificates of insurance and insurance policies.
11. List of subcontracts.

I. After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. Reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
10. Warranty and Maintenance information.
11. Record documents.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01290
SECTION 01310 - Project Management and Coordination

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01700 “Execution Requirements.”

1.2 Definitions

A. RFI: Request for information prepared by Contractor seeking interpretation or clarification of the Contract Documents.

1.3 Coordination

A. Coordinate all construction operations to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations that depend on each other for proper installation, connection, and operation. Establish and maintain clear communication between all trades.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
5. Provide and maintain sufficient crew to manage, supervise, execute and complete the Work by the required completion date.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

C. Coordinate scheduling and timing of required administrative procedures with construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Time progress meetings to coincide with review of payment applications. Such administrative activities include, but are not limited to, the following:

1. Preparation of Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
D. Coordinate and check layout and installation of Work between all trades. Coordinate and sequence Work in a logical manner to minimize impact to Work in place.

E. Require all subcontractors to read and comply with all applicable requirements of the contract documents.

F. Carefully review all contract documents and promptly issue an RFI in writing noting errors, inconsistencies or omissions found, prior to starting any Work. Where conflicts and inconsistencies exist in the contract documents provide the more expensive option at no additional cost to Owner.

G. Field verify all dimensions needed for fabricated components.

H. Coordinate construction activities so that operations are carried out with consideration for efficient use of power, water and material.

I. Before proceeding with any Work, submit a list of names for the following general contractor staff. List addresses, phone numbers, for both daytime contact and after hours emergency contact, email addresses and fax numbers:

1. Principal in charge.
2. Project manager(s).
3. Project superintendent(s).
4. Key administrative staff.

1.4 Project Meetings

A. Schedule and conduct meetings and conferences at Project site on a regular basis to coordinate the Work. Prepare agenda and lead the meeting. Issue meeting minutes to all concerned parties.

1. Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Distribute the agenda to all invited attendees.
3. Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 2 days of the meeting.

B. Schedule a preconstruction meeting before starting construction, at a time convenient to Owner and Architect, but no later than 10 working days after the date of the Notice to Proceed. Hold the meeting at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Discuss items of significance that could affect progress, including the following:

   a. Construction schedule.
   b. Critical work sequencing and long-lead items.
   c. Designation of key personnel and their duties.
   d. Procedures for processing field decisions and Change Orders.
   e. Procedures for RFIs.
   f. Procedures for Field Change Directives.
   g. Procedures for testing and inspecting.
   h. Procedures for processing Applications for Payment.
i. Distribution of the Contract Documents.

j. Submittal procedures.

k. LEED requirements.

l. Preparation of Record Documents.

m. Use of the premises.

n. Work restrictions.

o. Owner's occupancy requirements, use of facilities and protection of occupants.

p. Responsibility for temporary facilities and controls.

q. Parking availability.

r. Office, work, and storage areas.

s. Equipment deliveries and priorities.

t. First aid.

u. Security.

v. Progress cleaning.

w. Working hours.

x. Safety program.

y. Construction waste management and recycling.

3. Record and distribute meeting minutes.

C. Conduct a preinstallation meeting at Project site for each construction activity required to have a pre-installation meeting.

1. Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner of scheduled meeting dates.

2. Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

   
b. Options.
   
c. Related RFIs.
   
d. Related Change Orders.
   
e. Lead time.
   
f. Deliveries.
   
g. Submittals.
   
h. Review of mockups.
   
i. Possible conflicts.
   
j. Compatibility problems.
   
k. Time schedules.
   
l. Weather limitations.
   
m. Manufacturer's written recommendations.
   
n. Warranty requirements.
   
o. Compatibility of materials.
   
p. Acceptability of substrates.
   
q. Temporary facilities and controls.
   
r. Space and access limitations.
   
s. Regulations of authorities having jurisdiction.
   
t. Testing and inspecting requirements.
   
u. Installation procedures.
   
v. Coordination with other work.
   
w. Required performance results.
   
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Distribute minutes of the meeting to each party present and to all other concerned parties.

5. Do not proceed with installation if meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Conduct regular progress meetings at intervals agreed to with client. Coordinate dates of meetings with preparation of payment requests.

1. In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Review and correct minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

   a. Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time. Review schedule for next period.

   b. Review present and future needs of each entity present, including the following:

      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Off-site fabrication.
      6) Access.
      7) Work hours.
      8) Quality and work standards.
      9) Status of correction of deficient items.
     10) Field observations.
     11) RFIs.
     12) Status of proposal requests.
     13) Pending changes.
     14) Status of Change Orders.
     15) Pending claims and disputes.
     16) Documentation of information for payment requests.

3. Record and distribute minutes of the meeting to each party present and to all other concerned parties.

E. The Owner’s Representative may call a special meeting at any time during the course of the project. Special project meetings shall include representatives of any members of the project team requested in order to discuss problems and/or solutions that are common to the project.

1.5 Requests For Interpretation (RFIs)
A. Immediately on discovery of the need for interpretation of the Contract Documents, prepare and submit an RFI in the approved form.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Work.
3. Review all RFIs with contract documents prior to submitting RFI to Architect to assure that necessary information is not in the contract documents. No time or schedule extension will be approved for RFIs when information is clearly shown in the Contract Documents.

B. Include a detailed, legible description of item needing interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.
9. Contractor's suggested solution. If Contractor's solution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI. RFIs submitted without solution will be returned unreviewed, and no extension of time will be approved.
10. Contractor's signature.
11. Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
12. Enumerate each page and attachments of RFI with sequential number. Indicate total number of pages on RFI form.

C. Architect will review each RFI and determine action required. RFIs received after 3:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
   a. Approval of Means and Methods.
   b. Requests for approval of submittals.
   c. Requests for approval of substitution of products or alternate methods.
   d. Requests for coordination information already indicated in the Contract Documents.
   e. Requests for adjustments in the Contract Time or the Contract Sum.
   f. Requests for interpretation of Architect's actions on submittals.
   g. Incomplete RFIs or RFIs with numerous errors.
   h. RFIs which do not propose a solution.

2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 working days of receipt of the RFI response.
D. Review response and notify Architect within one day if Contractor disagrees with response. On receipt of Architect's action, after acceptance of response, immediately update the RFI log and distribute the RFI response to affected parties.

E. Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Include the following:

1. Project name.
2. Name of Contractor.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01310
SECTION 01320 - Construction Progress Documentation

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01290 “Payment Procedures.”
2. Section 01322 “Photographic Documentation.”

1.2 Definitions

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

B. CPM: Critical Path Method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Float: The measure of leeway in starting and completing an activity. Float time belongs to Owner.

E. Major Area: A story of construction, a separate building, or a similar significant construction element.

F. Milestone: A key or critical point in time for reference or measurement.

1.3 Submittals

A. Submittal Schedule: Submit 5 copies of submittal schedule.

B. Construction Schedule: Submit 5 opaque copies of initial schedule, large enough to show entire schedule for entire construction period. Submit an electronic copy of schedule in PDF format.

C. Daily Construction Reports: Submit 2 copies at weekly intervals.

D. Field Condition Reports: Submit 2 copies at time of discovery of differing conditions.

1.4 Coordination

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

B. Coordinate Construction Schedule with the Schedule of Values, Submittals Schedule and payment requests.
PART 2 - Products

2.1 Submittals Schedule

A. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates. Coordinate Submittal Schedule with Construction Schedule. Submit concurrently with submittal of Construction Schedule. Include the following:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Critical path date for Architect's final release or approval.

2.2 Construction Schedule

A. Extend schedule from date established for Notice to Proceed to date of Final Completion. Show the following dates and portions of time:

1. Date of Notice to Proceed.
2. Start date of actual construction activity.
3. Final Completion date.
4. Date of Substantial Completion.
5. Start and finish dates for each activity.
6. Critical path.
7. Float time.
8. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Treat each story or separate area as a separate numbered activity for each principal element of the Work.

1. Define and arrange activities so no activity is longer than 14 days.
2. Include procurement time for long lead items requiring more than 10 (ten) days procurement time, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery. Include procurement time within Activity time.
3. Include review and resubmittal times for submittals. Coordinate submittal review times in Construction Schedule with Submittals Schedule.
4. Include time necessary for startup and testing.
5. Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion. Show substantial completion date.

C. Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Arrange list of activities on schedule by phase.
2. Include a separate activity for each portion of the Work performed by Owner.
3. Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Partial occupancy before Substantial Completion.
e. Use of premises restrictions.
g. Seasonal variations.
h. Environmental control.
i. Required inspections.

4. Indicate important stages of construction for each major portion of the Work.
5. Include critical milestone dates such as Inspections and Completion dates.

D. For each proposed contract modification that affects contract time, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule. Submit analysis with proposed change.

E. Prepare Construction Schedule using a computerized, time-scaled CPM network analysis diagram for the Work. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner/Architect approval of the schedule.

1. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
2. Use "one workday" as the unit of time. Include nonworking days and holidays in the schedule.
3. Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities.
4. Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

F. Prepare Schedule using a computerized program that has been specifically developed to products and manage CPM bar chart type schedules.

2.3 Reports

A. Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. Equipment at Project site.
3. Material deliveries.
4. High and low temperatures and general weather conditions.
5. Accidents.
7. Meter readings and similar recordings.
8. Orders and requests of authorities having jurisdiction.
9. Services connected and disconnected.
10. Equipment or system tests and startups.
11. Number of workers on site.

B. Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions and photographs, together with recommendations.

C. When an event of an unusual and significant nature occurs at the project site, whether or not it is directly related to the Work, prepare and submit a report. List chain of events, individuals involved, photographs and written description.
PART 3 - Execution

3.1 Construction Schedule

A. Issue 3-week look ahead schedule at each regularly schedule progress meeting. At monthly intervals, update schedule to reflect actual construction progress and activities. Issue updated schedule with each Application for Payment.

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

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01320
SECTION 01322 - Photographic Documentation

PART 1 - General

1.1 Related Documents

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

1.2 Submittals

A. Submit a complete set of digital image electronic files at completion of project. Identify electronic media with date photographs were taken at time of Substantial Completion. Submit images that have same aspect ratio as the sensor, uncropped.

B. Identify each set of images on transmittal with the following information:

1. Name of Project.
2. Name of Contractor.
3. Date stamped by camera.
4. Unique sequential identifier.

PART 2 - Products

2.1 Photographic Media

A. Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, 150 DPI minimum.

PART 3 - Execution

3.1 Construction Photographs

A. Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

B. Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Include date and time in filename for each image.
2. Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.

C. Before commencement of the work, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.

1. Flag construction limits before taking construction photographs.
2. Take photographs to show existing conditions adjacent to property before starting the Work.
3. Take photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs to record settlement or cracking of adjacent structures, pavements, and improvements.
D. Take periodic construction photographs one day before the cutoff date associated with each Application for Payment. Select vantage points to show status of construction, progress and adjacent properties since last photographs were taken.

E. Take digital color photographs of entire scope of Work at time of Substantial Completion. Submit photographs to Owner and Architect with transmittal.

F. Take color digital photographs of entire scope of Work at time of Completion. Submit photographs to Owner and Architect with each transmittal.

**END OF SECTION 01322**
SECTION 01330 - Submittal Procedures

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01320 "Construction Progress Documentation."
2. Section 01400 "Quality Requirements."
3. Section 01770 "Closeout Procedures."
4. Section 01781 "Project Record Documents."
5. Section 01782 “Operation and Maintenance Data.”

1.2 Definitions

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

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 Submittal Procedures

A. All submittals shall be received by the Architect within 15 calendar days from the date of the Notice to Proceed.

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

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. Do not use submittals to obtain approval of substitutions and alternate methods.
4. Do not use submittals to obtain approval of means and methods.

C. Allow enough time for submittal review by Architect and governing authority, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Allow for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Allow for review of each resubmittal.

D. Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 x 8 inches on label or beside title block to record action taken by Architect.
3. Include the following information on label for processing and recording action taken:
   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Submittal number or other unique identifier, including revision identifier. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).

E. Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals. If submittals contain comparable products equal to or exceeding specified basis of design products provide side-by-side comparison of all attributes between proposed product and specified product. Include side-by-side comparison within submittal, submittals for comparable products without side-by-side comparisons will be rejected.

F. Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using transmittal form provided by Owner. Do not group separate submittals under a single transmittal and single submittal number. Rejection of one portion of a submittal will be a rejection of the entire submittal. Architect will return submittals, without review, received from sources other than Contractor. Use transmittal form supplied by Architect.

G. Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.

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

I. Use only final submittals indicating Architect’s ‘acceptance’ or ‘furnish as corrected’ without a requested resubmittal.

1.4 Contractor's Use Of Architect's Cad Files

A. Contractor is not allowed to use Architect’s CAD files, or printed copies of Architect’s drawings, for use in preparing submittals.

PART 2 - Products

2.1 Action Submittals

A. Prepare and submit Action Submittals required by individual Specification Sections.
B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Provide adequate information in each submittal so that reviews may be conducted efficiently.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Manufacturer's catalog cuts.
   e. Wiring diagrams showing factory-installed wiring.
   f. Printed performance curves.
   g. Operational range diagrams.
   h. Compliance with specified referenced standards.
   i. Testing by recognized testing agency.

4. Submit six (6) copies of Product Data, unless otherwise indicated. Architect will return four (4) copies. Retain one (1) returned copy as a Project Record Document. Provide one (1) returned copy to Owner; provide one (1) returned copy to IOR.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   
   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shopwork manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Notation of coordination requirements.
   j. Notation of dimensions established by field measurement.
   k. Relationship to adjoining construction clearly indicated.
   l. Seal and signature of professional engineer if specified.
   m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Submit six (6) opaque (bond) copies of each submittal. Architect will return four (4) copies. Retain one (1) returned copy as a Project Record Document. Provide one (1) returned copy to Owner; provide one (1) returned copy to IOR.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.
3. Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Submit six (6) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return four (4) submittals with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected.
   a. Submit six (6) sets of verification Samples. Architect will return four (4).

2.2 Informational Submittals
A. Prepare and submit Informational Submittals required by Specification Sections.
   1. Submit six (6) copies of each submittal.
   2. Provide a notarized statement that includes signature of entity responsible for preparing certifications. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
B. Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
C. Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
D. Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
E. Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
F. Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
G. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

H. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

I. Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

J. Prepare written or published information that documents manufacturer's written recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

K. Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

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

M. Submit Material Safety Data Sheets (MSDSs) directly to Owner; do not submit to Architect. Architect will not review submittals that include MSDSs and will return them unreviewed for submittal to Owner.

PART 3 - Execution

3.1 Contractor's Review

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark and wet sign approval stamp before submitting to Architect. Place approval stamp on body of submittal, do not place approval stamp on binding cover.

B. Stamp each submittal with approval stamp required by Owner and illustrated in general conditions. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents. Contractor to sign stamp.

3.2 Architect's Action

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

B. Architect will review each action submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately.

Submittal Procedures
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to indicate action necessary. Submittals will only be reviewed for conformance with design intent and information in the Contract Documents.

C. Architect will review each informational submittal and will return it without action.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and will be discarded.

F. All reviewed submittals will be returned to Contractor.

G. After two submissions, without acceptance, of a particular submittal, Contractor will bear expense for additional Architect review of that submittal, through deductive change order.

H. Include all costs for preparing and handling submittals including costs associated with printing and distribution of submittals to a subcontractor.

END OF SECTION 01330
SECTION 01400 - Quality Requirements

PART 1 - General

1.1 Related Documents

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

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

   1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   
   2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. See Divisions 2 through 16 Sections for specific test and inspection requirements.

1.2 Definitions

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Testing Agency: A professionally licensed entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

   1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

F. ‘Minimum experience’ means having successfully completed a minimum of [five (5)] years’ experience on projects similar in size and scope of the type of Work required for this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

G. IOR: Inspector of Record.
H. DSA: California Division of State Architect.
I. OAR: Owner’s Authorized Representative

1.3 Conflicting Requirements
A. If compliance with two or more standards or code requirements is specified and the standards or code requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement at no additional cost to Owner. When uncertainties exist and requirements are different, but apparently equal, submit RFI’s to Architect for a decision before proceeding.
B. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. When uncertainties exist submit RFI to Architect for a decision before proceeding.
C. When conflicts exist within drawings provide Architect with RFI for clarification and provide more expensive option at no additional cost to Owner.
D. When conflicts exist within specifications provide Architect with RFI for clarification and more expensive option at no additional cost to Owner.
E. When conflicts exist between drawings and specifications provide Architect with RFI for clarification and more expensive option at no additional cost to Owner.
F. If conflicts exist between code requirements, authorities having jurisdiction and contract documents provide RFI to Architect for clarification and provide more expensive option at no additional cost to Owner.

1.4 Submittals
A. For testing agencies retained, submit proof of qualification to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
B. Prepare and submit certified written reports that include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   8. Complete test or inspection data.
   9. Test and inspection results with interpretation of test results.
   10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
   11. Name and signature of laboratory inspector.
   12. Recommendations on retesting and reinspecting.
C. For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 Quality Assurance

A. Provide firms and individuals experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

B. Provide firms and individuals experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Provide firms and individuals experienced in producing and fabricating products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Provide the services of professional engineers who are legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for design and installation of the systems, assemblies, or products that are similar to those indicated for this Project in material, design, and extent.

E. Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated. Requirement for specialists shall not supersede building codes and regulations governing the Work.

F. When required, provide an authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

G. Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size as directed by Architect.
2. Notify Architect 7 (seven) days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed.

H. Any additional Work beyond that specified or illustrated, or any modifications thereto, that are necessary for the furnishing of required warranty shall be provided by the Contractor without additional cost to the Owner.

1.6 Quality Control

A. Owner will select an independent testing agency to conduct tests, sampling, and testing of materials. Selection of material to be tested shall be by the agency or the IOR and not by Contractor. Owner will
engage a qualified testing agency and special inspectors to conduct special tests and inspections required by authorities having jurisdiction. Special inspections are indicated in the Contract Documents.

1. Procedural and acceptance criteria shall be as set forth in Section 4-335 of the California Building Standards Administrative Code and as set forth in CBC Section 1703A.1.

B. Owner will directly reimburse testing agency for all costs for all Building or Fire Official required tests and inspections, but may be reimbursed by Contractor for such costs as noted in related sections of the Contract Documents.

1. Contractor will reimburse Owner or directly reimburse testing agency for all costs for retesting required by failed tests as set forth in Sections 4-333(c) and 4-335(c) of the California Building Standards Administrative Code.

C. Independent testing agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

D. Independent testing agency shall not perform any duties of Contractor.

E. Contractor shall notify the Owner a sufficient time in advance of the manufacture of material to be supplied by Contractor as required under the Contract Documents, which must by terms of the Contract Documents be tested, in order that the Owner may arrange for the testing of same at the source of supply.

F. Any material shipped by Contractor from source of supply prior to having satisfactorily passed required testing and inspection shall not be incorporated into the Work.

G. Where indicated, engage a factory-authorized service representative to inspect substrates, field-assembled components and equipment installation, including service connections. Report results in writing to Owner and Architect.

H. Regardless of whether original tests or inspections were Contractor’s responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with Contract Documents.

I. Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

J. Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting. Schedule time for tests, inspections, obtaining samples, and similar activities.

PART 2 - Products (Not Used)

PART 3 - Execution

Quality Requirements
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3.1 **Testing and Inspection Log**

A. Maintain a testing and inspection log at Project site. Post changes and modifications as they occur. Provide access to log by Architect, IOR and Owner.

3.2 **Repair And Protection**

A. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

2. Comply with requirements of Section 01731 "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

3.3 **Test Reports**

A. One copy of each test report shall be forwarded directly to Building and Fire Official by the testing agency. Additional copies of each test report shall be forwarded directly to Owner, Architect, Contractor, project inspector, construction manager, and structural engineer by the testing agency. Such reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reports. Reports shall show that the material or materials were sampled and tested in accordance with the requirements of CBC, Title 24, Parts 1 and 2, and with the approved Contract Documents. Test reports shall show the specified design strength. Test reports shall also state whether or not material or materials tested comply with the specified requirements as set forth in Section 4-335(d) of the California Building Standards Administrative Code.

3.4 **Verification of Test Reports**

A. Testing agency shall submit to DSA a verified report, in duplicate, covering tests that were performed by that agency during the progress of the Work. Additional copies of each test report shall be forwarded directly to Owner, Architect, Contractor, project inspector, construction manager, and structural engineer by the testing agency. Such report shall furnish each time construction on the Work is suspended, covering tests up to that time, and prior to Final Completion of the Work, covering all tests as set forth in Sections 4-335(e) and 4-336 of the California Building Standards Administrative Code.

3.5 **Site Visitations**

A. Owner, Architect and IOR shall have access to the site at all times, to all parts of the Work and to all shops/warehouses where materials or Work is in preparation, fabrication or storage.

B. Owner, Architect and IOR shall have the right to reject materials and workmanship deemed defective Work, and to require their correction. Rejected work and materials shall be corrected in a satisfactory manner without charge to Owner. If Contractor does not correct rejected Work within a reasonable time, fixed by written notice and in accordance with the terms and conditions of the Contract Documents, Owner may correct rejected Work and recover design, engineering, repair, replacement and administrative costs through deductive change order.
C. The Owner at any time prior to Final Completion reserves the right to make an examination of Work already completed by removing work in place. The Contractor shall, on request, promptly furnish all necessary facilities, labor, and materials. If Work is found to be defective in any respect due to the fault of the Contractor all expenses of such examinations and of satisfactory reconstruction will be at the Contractor’s expense. If Work is found to meet the requirements of Contract Documents, the additional cost of examination and replacement shall be paid for by Owner.

D. Contractor is responsible for compliance with all applicable local, state, and federal codes, regulations, ordinances, restrictions, and requirements.

3.6 Inspector of Record

A. Project Inspector of Record (IOR), employed by the Owner in accordance with requirements of California Code of Regulations, Title 24, will be assigned to the Work.

1. Project inspector shall be approved by Architect, Structural Engineer, and DSA.
2. As set forth in Section 4-333(b) of the California Building Standards Administrative Code.
3. Duties of project inspector are specifically defined in Section 4-342 of the California Building Standards Administrative Code.

B. The Work shall be subject to the personal continuous observation of the IOR. He shall have free access to any or all parts of the Work at any time.

C. Inspection of Work shall not relieve Contractor from obligation to fulfill all of the terms and conditions of the Contract Documents.

D. Contractor shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

E. The Contractor shall provide a temporary office for the IOR to be located as directed by the IOR and to be maintained until removal is authorized by the Owner. This office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. The door shall have a lock. A table satisfactory for the study of plans and two chairs shall be provided by the Contractor. The Contractor shall provide and pay for adequate electric lights, private local telephone service with a loud exterior bell, internet DSL service, fax machine with active line, and adequate heat and cooling for this field office until the completion of the Contract.

END OF SECTION 01400
SECTION 01420 - References

PART 1 - General

1.1 Related Documents

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

1.2 Definitions

A. Basic Contract definitions are included in the Conditions of the Contract.

B. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

C. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

D. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

E. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

F. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

G. "Provide": Furnish and install, complete and ready for the intended use.

H. "Project Site": Space available for performing construction activities. The extent of Project site may or may not be identical with the description of the land on which Project is to be built.

1.3 Industry Standards

A. Unless the Contract Documents include more stringent requirements, applicable reference standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference. In case of conflict between performance standard or regulation and contract documents provide more stringent requirement at no additional cost to Owner.

B. Comply with standards in effect as of date of the Contract Documents.

C. Comply with all conditions of approval from governing authorities.

D. In case of conflict between reference standards or reference standards and governing authorities, conform to the most stringent requirements, if such conformance is legal, at no additional cost to Owner.
E. The contractual relationship and responsibilities of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

F. Each entity engaged in construction on Project shall be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source. Maintain a copy of all applicable regulations and reference standards at the project site.

G. Where abbreviations and acronyms are used in Contract Documents, they shall mean the recognized name of the entities in the following list. This list is not inclusive of all organizations.

   ACI     ACI International (American Concrete Institute)
   ADA     Americans with Disabilities Act
   AISC    American Institute of Steel Construction
   AITC    American Institute of Timber Construction
   ANSI    American National Standards Institute
   APA     APA - The Engineered Wood Association
   ASTM    American Society for Testing and Materials International
   ICC-ES  ICC Evaluation Service, Inc.
   NRCA    National Roofing Contractors Association
   SMACNA  Sheet Metal and Air Conditioning Contractors' National Association
   UL      Underwriters Laboratory

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01420
SECTION 01500 - Temporary Facilities and Controls

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01700 “Execution Requirements.”

1.2 Use Charges

A. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner’s construction forces, Architect, testing agencies, and authorities having jurisdiction.

B. Water from Owner’s existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Coordinate with owner to determine point of connection.

C. Electric power from Owner’s existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Coordinate with owner to determine point of connection.

1.3 Quality Assurance

A. Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

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

1.4 Project Conditions

A. Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Provide barricades to protect pedestrian traffic around site.

C. Respond to complaints from Owner within 48 hours.

D. Provide immediate written RFI summarizing complaints received directly from neighbors.

E. Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the site.

F. Contractor is responsible for site, building and individual room security, and security to all areas of work.
PART 2 - Products

2.1 Materials
   A. Portable Chain-Link Fencing: Minimum 2-inch, 9 Ga., galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide privacy screen in fence and gates. Contractor is responsible for realigning, relocating and reestablishing temporary fence, privacy screen, and gates as required to accommodate access, circulation and progress of Work.
   B. Provide necessary construction grade lumber and CDX plywood in sizes and thickness needed.
   C. Provide ½” regular gypsum board as needed
   D. Provide 10-mil minimum polyethylene sheeting as needed to protect and screen work and cover temporary openings.
   E. Provide paint as needed to comply with VOC requirements.
   F. Provide First Aid supplies.

2.2 Temporary Enclosures
   A. Provide storage sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Keep materials dry at all times.

2.3 Equipment
   A. Provide portable, UL rated fire extinguishers; with class, & extinguishing agent and in quantity & location as required by fire authority. Provide and maintain fire extinguishers in wood construction regardless of Fire Authority requirements.
   B. Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, heaters with individual space thermostatic control.
      1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
      2. Provide heating units listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
      3. If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV 8 (eight) at each return air grille in system and remove at end of construction. Verify that existing HVAC system can draw air through filter without undue stress on existing fans and motors.
   C. Locate, place and use equipment so as not to impose excessive loads on supporting walls, floors, roofs and structures.

PART 3 - Execution

3.1 Installation, General
   A. Locate temporary facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 Temporary Utility Installation

A. Arrange with Owner and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Use of Owners existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. Owner will bill contractor for water services used. Coordinate with Owner for schedule of payment. At Substantial Completion, restore these facilities to condition existing before initial use. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans. Provide necessary visual meters and monitoring devices on existing utility lines and provide written quantities of usage in weekly progress reports.

C. Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

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

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

F. Use of Owners existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner. Owner will bill Contractor for electrical power used. Coordinate with Owner for schedule of payment. Provide necessary visual meters and monitoring devices on existing utility lines and provide written quantities of usage in weekly progress reports.

G. Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

H. Install a minimum of one (1) telephone line for each field office.

1. Provide a dedicated telephone line for each facsimile machine and computer in each field office.
2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

I. Provide temporary electronic DSL communication service, including electronic mail in each field office.

3.3 Support Facilities Installation

A. Provide construction offices, shops, and sheds. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
B. Coordinate with Owner for temporary parking areas for construction personnel. Obtain and pay for required parking permits.

C. Provide temporary signs as necessary for completion of the Work. Locate temporary signs to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

   1. Provide temporary, directional signs for pedestrians, construction personnel and visitors.
   2. Maintain and touchup signs so signs are legible at all times.

D. Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Provide scaffolding as needed to complete the Work. Remove scaffolding at appropriate time when Work is complete and repair all marks and signs of scaffold installation in finished Work.

E. Provide facilities necessary for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

F. Provide lockable temporary weatherproof field office for IOR In location directed by IOR and maintain until directed by Owner. Provide office with natural and artificial light and ventilation. Provide electrical power, telephone service (non-pay phone) and heat.

3.4 Security And Protection Facilities Installation

A. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent unauthorized people and animals from easily entering site.

   1. Enclose project area to accommodate construction operations including office, storage and staging areas, but still allow required access to educational facilities occupied by students, faculty and administration. Coordinate with Owner to determine areas requiring access by Owner and students.
   2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
   3. Provide lockable entrances to work areas prevent unauthorized entrance, vandalism, theft, and similar violations of security.

C. Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting. Provide structurally adequate, protective, covered walkway for passage of individuals where hazardous operations may occur overhead.

D. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

E. Provide floor-to-ceiling temporary dustproof partitions to limit dust and dirt migration and to separate in-use occupied areas from fumes and noise.

   1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, over 20 gauge metal studs 16” o.c. with fire-retardant plywood on construction operations side.
   2. Insulate partitions.
   3. Seal joints and perimeter.
   4. Coordinate with Owner to determine occupied areas.
F. Provide and maintain temporary fire protection facilities of types needed to protect against reasonably predictable fire losses.

3.5 Operation, Termination, And Removal

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

B. Maintain facilities in good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

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

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

2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements.

END OF SECTION 01500
SECTION 01524 - Construction Waste Management

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01732 “Selective Demolition.”

1.2 Definitions

A. Construction Waste: Materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 Performance

A. The Owner has established that this Project shall generate the least amount of landfill waste possible and that processes that ensure the generation of as little landfill waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.

B. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

C. Owner’s goal is to recycle as much nonhazardous demolition and construction waste as possible.

D. Field verify dimensions indicated on construction documents before confirming product orders or proceeding with Work, to minimize waste due to excessive materials.

1.4 Submittals

A. Submit six (6) copies of waste management plan to Architect within seven (7) days of receipt of Notice to Proceed and prior to any waste removal from the site.

B. Concurrent with each Application for Payment, submit three (3) copies of waste reduction progress report. Include the following information:
1. Material categories.
2. Total quantity of each waste item in tons, cubic feet or other appropriate unit of measure.
3. Quantity of waste salvaged, both estimated and actual measured units.
4. Quantity of waste recycled, both estimated and actual measured units.
5. Total quantity of waste recovered (salvaged plus recycled).
6. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
7. Include manifests, weight tickets, receipts and invoices to justify amounts indicated.

C. Before request for Substantial Completion, submit three (3) copies of the following records:

1. Calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
2. Receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
3. Receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
4. Receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices to justify amounts indicated.
5. Receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices to justify amounts indicated.

1.5 Quality Assurance

A. Conduct Waste Management Conference at project site.
B. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.6 Waste Management Plan

A. Develop waste management plan consisting of waste identification and waste reduction work plan. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan. Include separate sections in plan for demolition and construction waste, include cost/revenue analysis.
B. Indicate anticipated types and quantities of waste generated by the Work. Include estimated quantities and assumptions for estimates.
C. List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill. Include points of waste generation, total quantity of each type of waste and means of recovery, handling and transportation procedures.

1. Provide analysis of the proposed jobsite waste to be generated, including types and quantities. Provide a list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material. “Net” means that the following have been subtracted from the cost of separating and recycling:

a. Revenue from the sale of recycled or salvaged materials.
b. Landfill tipping fees saved due to diversion of materials from the landfill.

2. For materials that will be salvaged and reused in this Project, describe methods for collecting, preparing, transporting, and storing salvaged materials before incorporation into the Work.
3. Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers. Indicate procedures required by recycling facilities to store, handle and transport materials for recycling.

4. Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and disposal facility, tipping fees and projected cost of disposing of all Project waste in the landfill.

5. Include description of method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

D. Indicate total cost of waste disposal as if there was no waste management plan, and the net additional cost or net savings resulting from implementing waste management plan.

E. Include the following:

1. A description of the regular meetings to be held to address waste management. Refer to Section 01310 “Project Management and Coordination.”

2. A description of the means by which any waste materials, identified for salvage and recycling, will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.

3. A description of the means of sorting and transportation of the recyclable materials and destination of materials.

1.7 Delivery, Storage and Handling

A. Coordinate the schedule of product deliveries in order to minimize site storage time and potential damage to stored materials and to minimize waste due to excessive materials handling and misapplication.

B. Set aside and protect misdelivered and substandard products and materials and return to supplier for credit.

C. Store products and materials in a manner to prevent damage and contamination.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Plan Implementation

A. Implement waste management plan as approved by Architect and Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site. Distribute waste management plan to everyone concerned within 3 (three) days of submittal return. Review plan and procedures with all trades and workers.

C. Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

D. Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to maximize recyclability and salvageability of identified materials.
3.2 Recycling Waste

A. Arrange for timely pickups from the site and deliveries to recycling facility in order to prevent contamination of recyclable material.

B. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
   1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
   2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
   4. Store components off the ground and protect from the weather.
   5. Remove recyclable waste off Owner’s property and transport to recycling receiver or processor.

C. Sort and stack wood members according to size, type and length. Separate lumber, engineered wood products, panel products, and treated wood materials. Grind or chip lumber cut offs into small pieces. Bag sawdust that does not contain painted or treated wood and transport to recycling facility.

D. Separate metals by type:
   1. Structural Steel: Stack members according to size, type of member and length.
   2. Remove bolts, nuts, washers and other rough hardware.
   3. Sort and pile metal reinforcing.
   4. Sort and pile anchors, ties, clips and other miscellaneous metal items.

E. Separate asphalt felts. Remove and dispose of nails, staples, and accessories.

F. Stack large clean gypsum board pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners. Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

G. Stack large clean acoustical ceiling panels and tiles on wood pallets and store in a dry location. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.

H. Packaging:
   1. Break down packaging and cardboard into flat sheets. Bundle and store in a dry location.
   2. Separate and bag Polystyrene Packaging materials.
   3. As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
   4. Break down crates into component wood pieces and comply with requirements for recycling wood.
   5. Collect beverage containers and paper waste used by onsite workers and sort by material.

3.3 Disposal of Waste

A. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose in a landfill acceptable to authorities having jurisdiction.
   1. Do not allow landfill waste materials that are to be disposed of to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces, site areas, and routes of transport.
3. Transport landfill waste materials off Owner’s property and legally dispose of them.

B. Do not burn waste materials.

END OF SECTION 01524
SECTION 01600 - Product Requirements

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01770 “Closeout Procedures.”

1.2 Definitions

A. Products: Items purchased for incorporating into the Work. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

C. Specific manufacturer names or product names noted as “or equal” are referenced to establish basis of design requirements for quality, properties, function, dimensions, instances, performance, physical properties, appearance, and other characteristics for the purposes of evaluating comparable products by other manufacturers. Comply with submittal requirements for submitting comparable products on an ‘or equal’ basis. Listed manufacturers are provided as a suggested guide and are not intended to limit Contractor’s choices of manufacturers. Contractor is responsible for providing products that meet the basis of design in every respect and providing required submittal information to demonstrate compliance.

1.3 Substitution Procedure

A. Indicate all proposed substitutions at time of bid and clearly identify in space provided on bid form.

B. Submit six copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: contractor to provide type written form showing substitution request identification number, summarize and list each item of content. Include statement on form that Contractor has reviewed contents of substitution request and has found it to be in compliance in all respects with the requirements of the Contract Documents including material and installation requirements. Contractor shall sign form.

2. Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or method cannot be provided.

b. List of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable.

f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

h. Research/evaluation reports acceptable to authority handling jurisdiction, evidencing compliance with building code in effect for Project.

i. Detailed evaluation of Construction Schedule showing effect on the overall Contract Time and individual tasks. If specified products are not available from manufacturer within scheduled construction time, provide written statement on manufacturer’s letterhead stating lack of availability or timing of delivery.

j. Cost implication, if any, in the Contract Sum.

k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. If necessary, Architect will request additional information or documentation for evaluation of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution. Use product specified if Architect cannot make a decision on use of a proposed substitution.

4. Do not install substituted products without acceptance from Owner and Architect.

5. Contractor is responsible for providing all necessary information including information requested by Architect to justify substitution.

6. Do not resubmit rejected substitutions.

7. Use of approved substitution does not alleviate Contractor from complying with requirements of Contract Documents.

8. Allow for all substitution request and review times in construction schedule. Additional schedule time will not be granted for substitutions.

1.4 Quality Assurance

A. If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

B. Do not incorporate products that are provided prior to satisfactorily passing testing requirements.

C. Provide all products required for a complete and proper installation, even if not specifically indicated, at no additional cost to Owner.

D. Where inter-related, multiple components are required for a complete system provide components that are completely compatible and satisfy required warranties. Provide only one brand, kind or make of product for each purpose throughout Work.

E. For all products referred to in singular number, provide the quantity needed to complete the Work.

1.5 Product Delivery, Storage, And Handling

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions. Exercise special care to protect products that are sensitive to light, UV exposure, heat or moisture.

B. Delivery and Handling:

1. Schedule and sequence deliveries with construction schedule to minimize storage time at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Promptly inspect products on delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and properly protected.
5. Provide adequate equipment and personnel to properly handle, move and store products and materials to prevent damage, disfiguring or soiling.

C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, and UV exposure, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage. Comply with MSDS.
7. Protect stored products from damage and liquids from freezing.
8. Do not bring products to site until conditions match those recommended in writing by manufacturer.
9. Do not store products labeled flammable or toxic within the building.
10. Store products in a secure enclosure.
11. When approved by Owner, and when site constraints do not permit on-site storage, materials may be stored off site in a bonded warehouse approved by Owner, at no additional cost to Owner.
12. Store granular materials on a solid flat surface in a well drained area.
13. Arrange storage area to allow access for inspections and for logical sequencing with construction.

1.6 Product Warranties

A. Special warranties specified shall be in addition to manufacturer’s standard warranties or implied warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Where special warranties are required prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval as submittal. Even when not specifically indicated as a submittal within a specific Specification Section.

PART 2 - Products

2.1 Product Selection

A. Provide products that comply with the Contract Documents that are undamaged and new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

3. ‘Or Equal’ basis-of-design: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product that is equal in all respects. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.

4. Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

5. Where Specifications include the phrase "as selected from manufacturer's colors, patterns, and textures" or a similar phrase, Architect will select color, pattern, density, or texture from manufacturer’s full range of products that includes both standard and premium items.

6. Where a conflict exists between two different products specified to the same piece of work, provide the more expensive product at no additional cost to Owner.

7. Where conflict exists between product requirements indicated and jurisdictional requirements provide for more expensive option at no additional cost to Owner.

8. Where conflict exists between specifications and drawings for product requirements provide more expensive product at no additional cost to Owner.

2.2 Product Substitutions

A. Architect will consider Contractor's request for substitution only when the following conditions are satisfied:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume.

2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.

4. Substitution request is fully documented and properly submitted.

5. Requested substitution will not adversely affect Contractor's Construction Schedule.

6. Requested substitution has received necessary approvals of authorities having jurisdiction.

7. Requested substitution is compatible with other portions of the Work.

8. Requested substitution has been coordinated by Contractor with other portions of the Work.

9. Requested substitution provides specified warranties.

B. Contractor is responsible for providing all information necessary and requested to justify substitution request.

C. Substitution requests and processing shall in no way justify additional time or money to the Contract.

D. Substitution requests that are denied shall in no way justify additional time or money to the Contract.

E. Approved substitutions shall in no way relieve Contractor from requirements and responsibilities of the Contract Documents.

F. Contractor assumes all costs associated with processing proposed substitutions and for installing approved substitutions.

G. Substitutions on the basis of unavailability of a product must be accompanied by letter on manufacturer’s letterhead stating lack of availability.
H. Contractor shall pay all professional fees, including Architect and Engineers, for time required for review and any redesign services associated with substitutions and for costs associated with re-approval by Government Authority. Costs shall be paid by deductive change order to Contract.

I. Substitutions will not be considered when they are indicated or implied on submittals. All proposed substitutions must be requested with separate written requests.

PART 3 - Execution (Not Used)

END OF SECTION 01600
SECTION 01700 - Execution Requirements

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01310 "Project Management and Coordination."
2. Section 01330 "Submittal Procedures."
3. Section 01731 "Cutting and Patching."
4. Section 01770 "Closeout Procedures."

1.2 Quality Assurance

A. Provide installers practicing the best methods known to each particular trade. Use adequate numbers of skilled, experienced workers who are adequately trained and completely familiar with the requirements and methods needed for completion of the Work.

B. Where required by warranty requirements provide approved fabricators and installers. Provide written evidence of such approval on manufacturer’s letterhead from manufacturer.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Examination

A. The existence and location of construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of electrical, mechanical, structural and architectural elements, systems and other construction affecting the Work. Before construction, verify the location and points of connection of utility services.

B. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. If requirements of Contract Documents create conditions which are detrimental to performance of the Work provide an RFI to the Architect.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers, curing compounds and other finishes and coatings. Assure that moisture content of substrate is within acceptable written recommended limits of manufacturer of material to be applied to substrate.
3. Examine and verify location of mechanical and electrical systems to verify actual locations before material installation.
4. Examine and verify suitability of walls, floors, roofs and other elements to accept application and installation of products and systems.
5. Verify that conditions do not negate required warranties.
6. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates Contractor’s acceptance of surfaces and conditions.

Execution Requirements
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3.2 Preparation

A. Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before order and fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work. Immediately upon discovery of conflict submit written RFI to Architect for clarification.

B. Verify space requirements and dimensions of items shown diagrammatically on Drawings prior to order and fabrication. Immediately upon discovery of conflict submit written RFI to Architect for clarification.

C. Review field conditions with Contract Documents. Immediately on discovery of the need for clarification of the Contract Documents; submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 Construction Layout

A. Before proceeding to lay out the Work, verify project dimensions and location shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, provide and RFI to the Architect immediately.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2. Establish dimensions within tolerances indicated. Do not scale Drawings or use means to measure or obtain required dimensions from electronic drawings, use written dimensions only.

3. Inform installers of lines and levels to which they must comply.

4. Check the location, level and plumb, of every major element as the Work progresses.

5. Notify Architect with written RFI immediately when deviations from required lines and levels exceed allowable tolerances.

B. Locate and lay out control lines and levels for structures and roof levels. Transfer survey markings and elevations for use with control lines and levels.

C. Maintain a log of layout control work. Record deviations from required lines and levels. Make the log available for reference by Architect.

3.4 Field Engineering

A. Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points. Report in writing lost or destroyed permanent benchmarks or control points promptly.

2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

3.5 Installation

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated. Install products in a manner that satisfies warranty requirements and is recommended in writing by manufacturer.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion. Prepare substrates and surfaces as recommended in writing by manufacturer. Perform Work when existing and forecasted weather conditions are within limits recommended in writing by manufacturer. Comply with manufacturer’s written temperature and humidity requirements. Allow materials to adjust to ambient conditions as recommended by manufacturer in writing prior to installation.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Do not use tools or equipment that produce harmful noise levels to building occupants.

F. Obtain and distribute templates to parties involved for factory prepared and field installed Work. Check Shop Drawings and coordinate with other work to confirm that adequate provisions are made for locating and installing fabricated products.

G. Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Where mounting heights are not indicated, submit an RFI to verify mounting heights.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Make joints of uniform width. Where joint locations in exposed work are not indicated, submit RFI to verify joint location. Measure, layout, plan, cut and fit exposed connections together to form hairline joints.

I. After sub-contractors and trades have completed work, inspect work and adjacent areas and make any adjustments necessary.

J. Use products, cleaners, and installation materials that are not considered hazardous, and are fully compatible with installed products and finishes.

3.6 Progress Cleaning

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
   2. Do not hold waste materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
   4. Do not store flammable, unsafe, unsanitary or odorous waste in a manner or location that would adversely affect pedestrians, building occupants, adjacent buildings and occupants, and properties.

B. Maintain Project site free of loose, scattered waste materials and debris.
C. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, vacuum the entire work area, as needed.

D. Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Remove debris from concealed spaces before enclosing the space.

F. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Burying or burning waste materials on-site is not permitted. Washing waste materials down sewers or into waterways is not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 Starting And Adjusting

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.8 Protection of Installed Construction

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 Correction Of The Work

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Section 01731 "Cutting and Patching."
1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace entire area of finish materials that are exposed to view if damaged surfaces cannot be repaired without visible evidence of repair.

D. Remove and replace damaged substrates and base structure if damaged by construction operations.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

**END OF SECTION 01700**
SECTION 01731 - Cutting and Patching

PART 1 - General

1.1 Related Documents

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

1.2 Submittals

A. Submit a proposal describing procedures at least 10 (ten) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform the Work.
4. Indicate when cutting and patching will be performed.
5. List utility services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work. Do not cut and patch structural elements without approval from Architect.

1.3 Quality Assurance

A. Do not cut, drill or notch structural elements unless detailed on structural drawings or without prior written authorization from the Structural Engineer.

B. Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance, decreased operational life or safety, or voids required or implied warranties.

C. Do not cut and patch elements or related components in a manner that results in reducing their load carrying capacity, capacity to perform as intended, causes increased maintenance or decreased operational life or safety, or voids required or implied warranties.

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

E. Sloppy, careless or avoidable cutting and patching will not be tolerated and work affected will be replaced at no cost to Owner. An aesthetically pleasing overall appearance of finished surfaces is a requirement of this Project. Make necessary preparations, and use recommended techniques with great care to ensure that all finished surfaces are acceptable to Architect. Architect will be the sole judge of visual acceptability.
F. Before cutting and patching meet at Project site with parties involved including mechanical and electrical trades. Review areas of proposed cutting and patching, coordinate procedures and resolve conflicts before proceeding.

1.4 Warranty

A. Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials approved in writing by manufacturer’s of affected materials, so as not to void warranties. Architect will be the sole judge of visual acceptability.

PART 2 - Products

2.1 Materials

A. Comply with requirements specified in other Sections.

B. Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials. Architect will be sole judge of visual acceptability.

PART 3 - Execution

3.1 Examination

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

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

3.2 Preparation

A. Provide temporary support of Work to be cut.

B. Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Avoid interfering with use of adjoining areas or interrupting the free passage to adjoining areas.

D. Where existing utility services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 Performance

A. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
B. Cut in-place construction by sawing, drilling, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.

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

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

1. Test and inspect patched areas after completion to demonstrate integrity of installation.
2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Provide an even surface of uniform finish, color, texture, and appearance. Remove finishes and replace with new materials, if necessary as determined by Architect, to achieve uniform color and appearance.
4. Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Patch exterior components in a manner that restores enclosure to a weathertight condition.
6. Where patching occurs on a painted surface, apply primer and intermediate coats over patched area. Apply final coat over entire surface containing patch. Provide additional finish coats over entire surface until patch blends with adjacent surface, at no additional cost to Owner.

D. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731
SECTION 01732 - Selective Demolition

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01322 “Photographic Documentation.”
   2. Section 01500 “Temporary Facilities and Controls.”
   3. Section 01524 “Construction Waste Management.”

1.2 Definitions

A. Remove: Detach items from existing construction in their entirety as required for new construction and legally dispose of them off-site.

B. Salvage: Detach items from existing construction and deliver them to Owner.

C. Remove and Reinstall: Detach items from existing construction in their entirety as required for new construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and will remain functional.

E. Abandon: Existing items of construction that are to be disconnected, shutdown and left in place.

1.3 Quality Assurance

A. Provide the services of an experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Comply with all applicable storm water, erosion and air quality regulations.

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

D. Conduct Predemolition meeting at Project site. Review methods and procedures related to selective demolition. Issue meeting minutes.

1.4 Project Conditions

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
C. Compare existing conditions with Construction Documents before proceeding with selective demolition. Immediately provide written RFI to Architect for resolution of any conflicts found.

D. It is not expected that hazardous materials will be encountered in the Work.
   1. Known hazardous materials will be removed by Owner before start of the Work under a separate contract.
   2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner in writing. Owner will remove hazardous materials under a separate contract.

E. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations. Re-route utilities if necessary to maintain service, without disruption of service. Maintain fire-protection facilities in service during selective demolition operations.

F. Verify depth and locations of existing utilities to remain prior to start of selective demolition.

1.5 Warranty

A. Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Examination

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

B. Inventory and record the condition of items to be removed and reinstalled and items to be salvaged.

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

D. Any water or termite damage that is discovered should be brought to the owner’s attention immediately for disposition.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations. If such condition exists submit written RFI to Architect immediately.

F. Record existing conditions by use of measured drawings, preconstruction photographs and templates. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, assembly, construction, connection and interface with other materials, as needed to make exact reproduction.

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

3.2 Mechanical/Electrical Systems
A. Maintain systems indicated to remain and protect them against damage during selective demolition operations.

3.3 Preparation

A. Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

C. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished. Strengthen or add supports when required to adequately support surrounding Work during progress of selective demolition.

3.4 Selective Demolition

A. Demolish and remove existing construction only to the extent indicated and as required by new construction. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations. Maintain adequate ventilation when using cutting torches.

4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

5. Dispose of demolished items and materials promptly. Remove decayed, infested, corroding or otherwise dangerous unsuitable materials promptly.

6. Remove structural framing members and lower to ground by method suitable to avoid free fall and prevent ground impact and dust generation.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.

2. Protect items from damage.

3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 Selective Demolition Procedures for Specific Materials

A. Demolish masonry in small sections. Cleanly cut masonry at junctures with construction to remain, then remove masonry between saw cuts.
B. Remove no more existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight.

1. Remove existing roof membrane, flashings, copings, and roof accessories.

3.6 Disposal of Demolished Materials

A. Remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

B. Do not burn demolished materials.

C. Do not discard or bury demolished materials.

3.7 Cleaning

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

END OF SECTION 01732
SECTION 01770 - Closeout Procedures

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01290 “Payment Procedures.”
2. Section 01322 “Photographic Documentation.”
3. Section 01781 “Project Record Documents.”
4. Section 01782 “Operation and Maintenance Data.”

1.2 Substantial Completion

A. Before requesting review for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected in a punch list format.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover for utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Submit a written request for Project Review for Substantial Completion. On receipt of request, Architect will either proceed with review or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after review or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request re-review when incomplete items are corrected.
2. Results of completed review will form the basis of requirements for Final Completion.

1.3 Final Completion
A. Before requesting final review for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment.
2. Submit certified Substantial Completion punch list of items to be completed or corrected stating that each item has been completed or otherwise resolved.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Submit a written request for final review for acceptance. On receipt of request, Architect will either proceed with review or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after review or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request re-review when the incomplete items are corrected.

1.4 Warranties

A. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, name and address of Contractor.

B. Provide 3 (three) copies of warranties.

PART 2 - Products

2.1 Materials

A. Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

B. Provide close out documents in appropriately sized 3-ring binder with transparent vinyl insert sleeve on both front cover and binding edge. Use multiple binders if necessary.

PART 3 - Execution

3.1 Final Cleaning

A. Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. Turn over Project in a "like new" condition.

B. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances. Remove and dispose all mock-ups that are not incorporated into Work.
   
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   
   e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
   
   f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
   
   g. Sweep concrete floors broom clean in occupied spaces. Vacuum all surfaces to remove fine dust.
   
   h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
   
   i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
   
   j. Remove labels that are not permanent.
   
   k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration. Do not paint over name plates, labels, and similar identification items on parts and equipment.
   
   l. Wipe surfaces of mechanical, electrical, piping and similar equipment.
   
   m. Replace parts subject to unusual operating conditions.
   
   n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
   
   o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
   
   p. Leave Project clean and ready for occupancy.
   
   C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.
   
   D. Turn over all keys to Owner.
   
   E. Turn over additional materials and products as required by Contract Documents.

END OF SECTION 01770
SECTION 01781 - Project Record Documents

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01782 “Operation and Maintenance Data.”

1.2 Submittals

A. Submit one (1) set of corrected Record Drawings and one (1) set of marked-up Record Prints.

B. Submit one (1) PDF copy of each Record Drawing whether or not changes and additional information were recorded.

C. Submit one (1) PDF copy of Project's Specifications, including addenda and contract modifications.

D. Submit one (1) PDF copy of each Product Data submittal.

PART 2 - Products

2.1 Record Drawings

A. Maintain one set of black-line on white record prints of the Contract Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown on the current Contract Documents.

   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

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

2. Mark record sets with erasable, colored pencil. Use colors to distinguish between changes for different categories of the Work at same location. Establish legend to clearly define colors.

3. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

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

1. Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Scan each Record Drawing whether it contains marks or not and create a PDF of each drawing.

3. Provide the following identification on each Record Drawing:

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

2.2 Record Specifications

A. Mark Specifications to indicate the actual product or method of installation that varies from that indicated in Contract Documents, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders.

2.3 Record Product Data

A. Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer’s written instructions for installation.
3. Note related Change Orders, Record Specifications and Record Drawings where applicable.

2.4 Miscellaneous Record Submittals

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1. RFI’s and RFI Log.
2. FCD’s and FCD Log.
3. Change Orders.

PART 3 - EXECUTION

3.1 Recording and Maintenance

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

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

END OF SECTION 01781
SECTION 01782 - Operation and Maintenance Data

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01770 “Closeout Procedures.”

1.2 Submittals

A. Submit three (3) copies of each Operation and Maintenance Manual in final form at least fifteen (15) days before Substantial Completion. Architect will return copy with comments. Correct or modify each manual to comply with Architect’s comments. Submit three (3) copies of each corrected manual to Owner prior to final acceptance of the work by Owner.

1.3 Coordination

A. Where Operation and Maintenance documentation includes information on installations by more than one factory authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - Products

2.1 Manuals

A. Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.

B. Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. List each product included in manual in a Table of Contents, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual. If manual requires multiple binders provide master table of contents in each binder and clearly identify each binder with a sequential number.

D. Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Provide heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11 inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
   a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets. Indicate total number of volumes. Provide a Master List of all manuals showing number and Title.

2. Provide heavy-paper dividers with tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Provide transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.

4. Attach reinforced, punched binder tabs on drawings and bind with text.
   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations. Key drawings for reference by labeling envelopes.

2.2 Product Maintenance Manual

A. Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. List each product included in manual identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer and supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Include the following, as applicable:
   1. Product name and model number.
   2. Manufacturer's name.
   3. Color, pattern, and texture.
   5. Reordering information for specially manufactured products.

D. Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.

E. Include lists of materials and local sources of materials and related services.

F. Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
PART 3 - Execution

3.1 Manual Preparation

A. Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data includes more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable. Assemble a complete set of emergency information for Owner's operating personnel.

B. Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation. Do not use Contract Documents or Record Documents as part of operation and maintenance manuals.

End of Section 01782
SECTION 06100 - Rough Carpentry

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06160 “Wood Sheathing.”

1.2 Definitions

A. Exposed Framing: Framing not concealed by other construction.

B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

C. Timber: Lumber of 5 inches nominal or greater in least dimension.

D. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. RIS: Redwood Inspection Service.
2. WCLIB: West Coast Lumber Inspection Bureau.
3. WWPA: Western Wood Products Association.

1.3 Submittals

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:

1. Power-driven fasteners.
2. Powder-actuated fasteners.
3. Expansion anchors.
4. Metal framing anchors.

1.4 Quality Assurance

A. Obtain each type of engineered wood product through one source from a single manufacturer.

B. For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria“:

1. Dimension lumber framing.
2. Timber.
3. Miscellaneous lumber.
1.5 **Delivery, Storage, and Handling**

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

**PART 2 - Products**

2.1 **Wood Products, General**

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
3. Nominal lumber sizes are indicated for lumber. Provide actual sized required by DOC PS 20 dressed S4S for moisture content specified.
4. Provide dressed lumber, S4S, unless otherwise indicated.
5. See structural Drawings for lumber grades.

2.2 **Miscellaneous Lumber**

A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
5. Furring.

B. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

C. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.3 **Fasteners**

A. Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, or where fasteners are in contact with concrete, masonry, grout or mortar, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.


D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B 18.2.1.
F.  Bolts: Steel bolts complying with ASTM A 307, Grade A with ASTM A 563 hex nuts and, where indicated, flat washers.

2.4 Metal Framing Anchors

A. Subject to requirements, provide products by one of, or equal to, the following:
   1. Cleveland Steel Specialty Co.
   2. KC Metals Products, Inc.
   3. Simpson Strong-Tie Co., Inc.

B. Provide products with allowable design loads, as published by manufacturer, which meet or exceed those indicated on structural drawings. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653 coating designation.

D. Provide framing anchors in sizes and configuration indicated and as necessary to anchor and connect framing members to comply with authorities having jurisdiction.

2.5 Miscellaneous Materials

A. Epoxy for Anchor Bolt Repair: Hilti RE-200SD, ICC-ES #2322 or approved equal.

PART 3 - Execution

3.1 Installation, General

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

D. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.

E. Do not splice structural members between supports, unless otherwise indicated.

F. Provide blocking, backing and framing as indicated and as required to support finish and facing materials, fixtures, specialty items, light fixtures, equipment, accessories, flashing, trim, etc.

G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities, every ten feet and at ceiling level.

H. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
I. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

J. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

   1. Comply with indicated fastener patterns where applicable. Before fastening, mark fastener locations, using a template.
   2. Use finishing nails, unless otherwise indicated. Countersink nail heads and fill holes with wood filler that will result in matching color of adjacent finish surface after finishes are applied.

3.2 Wood Ground, Sleeper, Blocking, and Nailer Installation

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 Wood Furring Installation

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

B. Furring to Receive Plywood or Hardboard Paneling: Install furring horizontally and vertically.

3.4 Wall and Partition Framing Installation

A. Provide bottom and top plates indicated using members of 2-inch nominal thickness whose widths equal that of studs. Single top plate may be used for non-load-bearing partitions. Fasten plates to supporting construction, unless otherwise indicated. Refer to Drawings for stud sized and spacing. Provide continuous horizontal blocking at midheight of partitions more than 96 inches high, using members of 2-inch nominal thickness and of same width as wall or partitions.

B. Construct corners and intersections with three or more studs.

C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.

   1. For non-load-bearing partitions, provide double-jamb studs and headers in sized indicated.
   2. For load-bearing walls, provide double-jamb studs for openings 60 inches and less in width, and triple-jamb studs for wider openings. Provide headers of depth indicated.

3.5 Ceiling Joist and Rafter Framing Installation

A. Install ceiling joists with crown edge up and complying with requirements specified above for floor joists. Face nail to ends of parallel rafters. Where ceiling joists are at right angles to rafters, provide additional
short joists parallel to rafters from wall plate to first joist; nail to ends of rafters and to top plate and nail to first joist or anchor with framing anchors or metal straps.

B. Rafters: Notch to fit exterior wall plates and connect per structural drawings. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers.

C. Provide special framing as required for eaves, overhangs and similar conditions. Match existing profiles and appearances.

3.6 Protection

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
SECTION 06160 – Wood Sheathing

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06100 “Rough Carpentry.”
2. Section 07271 “Building Underlayments.”

1.2 Submittals

A. Product Data: For each type of product:

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.3 Quality Assurance

A. For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1.4 Delivery, Storage, And Handling

A. Stack wood sheathing flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - Products

2.1 Plywood Sheathing

A. Plywood Sheathing: DOC PS 1, Exterior, Structural I.

1. Span Rating: As indicated.
2. Nominal Thickness: As indicated.

B. Oriented-Strand-Board Wall Sheathing: DOC PS 2, Exposure 1, Structural I.

1. Span Rating: As indicated.
2. Nominal Thickness: As indicated.

C. For non-structural plywood sheathing provide CDX in thickness indicated.

D. Factory mark panels to indicate compliance with grades and standards.
2.2 Fasteners

A. Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

B. Nails, Brads, and Staples: ASTM F 1667.


D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as indicated.

PART 3 - Execution

3.1 General

A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction.

C. Securely attach to substrate by fastening as indicated.

D. Select fasteners of size indicated and that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

F. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

G. Assure that sheathing joints occur over framing.

3.2 Structural Wood Sheathing Installation


B. Fasten panels as indicated on drawings and as described below:

1. Wall and Roof Sheathing: Install sheets perpendicular to framing, stagger all joints.
   a. Nail to wood framing.
   b. Space panels 1/8 inch apart at edges and ends. Stagger end joints, install panels perpendicular to framing. All end joints to occur over framing member.

C. Block all plywood sheathing edges.
SECTION 07210 - Building Insulation

PART 1 - General

1.1 General

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

B. Related Sections include:

1. 06100 “Rough Carpentry.”
2. 07271 “Building Underlayments.”

1.2 Performance Requirements

A. Provide insulation where indicated in ceiling plenums whose test performance is rated as follows for use in plenums as determined by testing identical products per "Erosion Test" and "Mold Growth and Humidity Test" described in UL 181.

1. Erosion Test Results: Insulation shows no visible evidence of cracking, flaking, peeling, or delamination of interior surface of duct assembly, after testing for 4 hours at 25000-fpm air velocity.
2. Mold Growth and Humidity Test Results: Insulation shows no evidence of mold growth, delamination, or other deterioration due to the effects of high humidity, after inoculation with Chaetomium globosium on all surfaces and storing for 60 days at 100 percent relative humidity in the dark.

1.3 Submittals

A. Product Data: For each type of product indicated.

1.4 Quality Assurance

A. Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per ASTM E 84 for surface-burning characteristics. Identify materials with appropriate markings of applicable testing and inspecting agency.

PART 2 - Products

2.1 Glass-Fiber Blanket Insulation

A. Subject to requirements, provide products by one of, or equal to the following:

1. CertainTeed Corporation.
2. Johns Manville.
3. Owens Corning.

B. Faced, Glass-Fiber Blanket Insulation: ASTM C 665, Type III blankets with foil facing with flame spread index of 25 or less, and smoke development rating of 50 or less.

C. Provide blankets in batt or roll form with thermal resistances indicated.
PART 3 - Execution

3.1 Installation, General

A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Water-Piping Coordination: If water piping is located within insulated exterior walls, be sure to place a layer of insulation between pipe and exterior of wall and encapsulate piping with insulation.

E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.2 Installation of Building Insulation

A. Apply insulation units to substrates by method complying with manufacturer's written instructions.

B. Set vapor-retarder-faced units with vapor retarder to warm side in location indicated. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation

C. Install glass-fiber insulation in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends. Place insulation so that voids are completely filled and so insulation makes full contact with surfaces on all sides of insulation

2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

3. Maintain 3-inch clearance between insulation around recessed lighting fixtures.

4. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.

5. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically per manufacturer’s written recommendation and support faced blankets by taping flanges to flanges of metal studs.

6. For wood-framed construction, install glass-fiber blankets according to ASTM C 1320 by lapping and stapling flanges, over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

END OF SECTION 07210
SECTION 07271 – Building Underlayments

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06160 “Wood Sheathing.”
2. Section 07321 “Clay Roof Tiles.”
3. Section 07620 “Sheet Metal Flashing and Trim.”
4. Section 07920 “Sealants.”

1.2 Definitions

A. Building Paper: Flexible polyolefin sheeting placed over base substrate sheathing to assist in creating a weather tight enclosure under building finishes.

B. Self Adhered Flashing: Flexible bituminous sheet product which can fully adhere to substrate surfaces.

1.3 Performance Requirements

A. Building underlayments shall be capable of performing as a continuous vapor-retarding air barrier and as a liquid-water drainage plane, flashed to discharge water or incidental condensation to the exterior. Building underlayment assemblies shall be capable of accommodating substrate movement. Building underlayments shall be capable of sealing; expansion and control joints, construction material changes, penetrations, fasteners, and transitions at perimeter conditions, without deterioration.

B. Building Paper:

1. Air leakage not to exceed 0.011 cfm/sq. ft. at 1.57 psf/25 mph ASTM E 283.
4. Maximum UV exposure time 6 months.

C. Self Adhered Flashing Materials:

1. Elongation 500 E ASTM D 412.
2. Tensile Strength 975 psi ASTM D 412.
3. Moisture vapor transmission rate .01 perms ASTM E 96.
4. Maximum UV exposure time 120 days.

1.4 Submittals

A. Product Data: Submit product data for each product required. Include manufacturer’s written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of air barrier.

B. Provide 12 x 12 samples for each type of underlayment material.
C. Qualification Data: For Applicator.

D. Mockups: Before beginning installation of underlayments, build mockup of exterior wall assembly, incorporating backup wall construction, external cladding, and flashings to demonstrate surface preparation, crack and joint treatment, and sealing of gaps, terminations, and penetrations of underlayments. Show treatment of expansion, crack control joints and reveals and lath installation. Include metal flashing and screed interfaces.

1. Coordinate construction of mockup to permit inspection by Owner’s testing agency of underlayments before external cladding is installed.
2. Include roof wall junctions, building corner conditions and foundation wall intersection. Show all laps with roofing and waterproofing membranes.
3. If Architect determines mockups do not comply with requirements, reconstruct mockup until mockup is approved.
4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Submit manufacturer’s authorized field observation reports indicating that underlayment application as constructed in mock-up will satisfy warranty requested.

1.5 Warranties

A. Provide a 10 year warranty for materials and installation signed by contractor, installer and manufacturer.

1.6 Quality Assurance

A. Provide an applicator with a minimum 5 years experience in applying underlayment materials similar in material, design, and extent to those indicated for this Project.

B. Building underlayment installer shall be an ABAA licensed contractor that employs certified and registered installers and complies with ABAA Quality Assurance Program.

C. Obtain building paper materials and accessories from a single manufacturer.

D. Obtain self adhered flashing materials and accessories from a single manufacturer.

E. Hold a pre-installation meeting at the Project site with all parties concerned and discuss the following:

1. Sequencing of underlayment installation. Review building underlayment requirements including surface preparation, substrate condition and pretreatment, minimum substrate curing period, required weather conditions, special details and sheet flashings, mockups, installation procedures, sequence of installation, testing and inspecting procedures, and protection and repairs.
2. Review submittals and mock-up requirements.
3. Review special details and flashing conditions.
4. Interface with other trades. Include installers of other construction connecting to and lapping with building underlayments, such as exterior finishes, roofing, waterproofing, architectural precast concrete, masonry, plaster joint sealants, windows, glazed curtain walls, and door frames.
5. Timing of building underlayment installation, subsequent material application and required maximum UV exposure time.
6. Distribute meeting minutes to Owner, Architect, Inspector, meeting attendees and other interested parties.
7. Provide 7 days advance notice of meeting.

F. Comply with UU-B-790a; equivalent to Grade D Type 15.
G. Comply with ASTM D 226 Type I.
H. Comply with ASTM E 1677 Type I.
I. Comply with ASTM E 331.
J. Comply with ASTM E96.
K. Do not use building underlayments below grade or as roofing or horizontal waterproofing membranes.

1.7 Delivery, Storage, And Handling

A. Deliver and store materials in their original undamaged, unopened packages in a clean, dry, protected location and within temperature range required by underlayment manufacturers. Do not remove from boxes or containers until ready to use.
B. Remove and replace materials that cannot be applied within their stated shelf life.
C. Store rolls according to manufacturer's written instructions. Store rolls on ends, secured to prevent tipping.
D. Protect stored materials from direct sunlight and UV exposure.
E. Do not expose materials to flame or other ignition sources.
F. Time delivery to Project site with installation date to minimize storage time and undue sunlight and UV exposure.
G. Remove damaged material from the site and dispose of legally.

1.8 Project Conditions

A. Apply building underlayments within the range of ambient and substrate temperatures recommended in writing by underlayment manufacturer. Protect substrates from environmental conditions that affect performance of underlayments. Do not apply underlayments to a damp or wet substrate or during snow, rain, fog, or mist, or to a surface that is too hot or cold. Avoid applying self adhered underlayments and associated primers to surfaces that have become too hot due to direct sunlight.

PART 2 - Products

2.1 Building Paper

A. Subject to requirements, provide products by, or equal to, the following:

1. DuPont, Tyvek, Commercial Wrap D.
2. Reeman, Inc., Typak
3. Raven Industries, Inc., Rufco Wrap
4. Pactiv Building Products, Green Guard Max.

B. High performance non-woven, breathable polyolefin that performs as both a continuous vapor retarding air barrier and as a liquid – water drainage plane.

1. Weight: 2.4 oz. /yd.² minimum ASTM D 3776.
2. Thickness: 0.018 inch minimum ASTM D 1777.
3. Tensile Strength: 40 pounds per inch minimum in any direction ASTM D 882 and D 1117.

2.2 Self Adhered Flashing

A. Subject to requirements, provide products by one of, or equal to, the following:

B. General Self adhered Flashing:

1. Protecto Wrap BT25XL.
2. Grace Vycor Plus.
3. Carlyle Coatings and Waterproofing CC W705 Air and Vapor Barrier Strip.
4. Tremco EXOAIR 110.

C. Provide self adhering rubberized asphalt laminated to a high density polyethylene film with a release liner, total thickness 40 mils minimum.

2.3 Accessory Materials

A. Provide all auxiliary and accessory materials as recommended in writing by underlayment manufacturer for a complete installation at no additional cost to Owner; such as, joint and seam sealing tape, primers, compatible sealants, adhesives, fasteners, mastics, counter-flashing strip, patching compounds. Verify per compatibility with substrates and underlayments. Do not use solvent based sealants, tapes and mastics.

PART 3 - Execution

3.1 Examination

A. Examine substrates, areas, and conditions, with installer and Manufacturer present, for compliance with requirements, warranties, and other conditions affecting performance.

1. Verify that surfaces to received underlayments are clean, dry and flat.
2. Verify that substrates are sound and free of oil, grease, dirt, dust, excess mortar, or other contaminants.
3. Verify that concrete has cured and aged for minimum time period recommended in writing by underlayment manufacturer. Perform moisture tests for capillary moisture by plastic sheet method according to ASTM D 4263 to verify that moisture content is within manufacturer's acceptable limits.
4. Verify that masonry joints are flush and completely filled with mortar.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Provide written RFI to Architect if substrates and building underlayments are incompatible. Proceeding with building underlayment installation constitutes Contractor’s acceptance of substrate conditions.

3.2 Surface Preparation

A. Clean, prepare, and treat substrate according to building underlayment manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air barrier application.

B. Mask off adjoining surfaces not covered by underlayments to prevent spillage and overspray of primers and mastics, from affecting other construction.

C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or form coatings from concrete.
D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate-patching cementitious composite. Provide a smooth continuous surface for bonding of underlayments.

E. Remove excess mortar from masonry ties, shelf angles, and other obstructions.

F. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D 4258.

G. At changes in substrate plane, apply sealant or mastic beads and tool to form a smooth transition from one plane to another. Confirm with underlayment manufacturer that sealants and mastics are compatible with underlayments.

H. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.

I. Provide continuous solid backing and surfaces for all underlayments.

3.3 General Underlayment Installation

A. Install underlayments in a shingled manner with upper layers overlapping lower layers to shed water without interruption or interception by exposed edges. Integrate lapping of underlayments with sheet metal flashings, roofing, and waterproofing membranes to properly shed water. Use fasteners recommended in writing by underlayment manufacturer for type of base substrate. Fasten building paper through to solid wood sheeting or through sheeting to framing.

B. Regardless of manufacturer’s stated material capability, do not allow underlayments to be exposed to direct sunlight and UV rays for more than 30 days.

C. All primers, sealants, mastics, sealing tapes and other auxiliary materials must be completely compatible with underlayments and substrates. Verify compatibility of all materials with manufacturer. Coordinate with other trades who may be applying sealants, mastics and other materials in direct contact with underlayments to communicate and confirm compatibility requirements.

D. If not treated with fire stop materials, completely fill all gaps in perimeter frame surfaces of all through wall penetrations with non-expanding foam.

E. Apply joint sealants forming part of underlayment assembly within manufacturer’s recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

F. Do not cover underlayments until tested and inspected by Owner’s testing agency.

G. Install underlayments and auxiliary materials to form a complete seal and to maintain a continuous, shingled vapor and waterproof barrier.

H. Coordinate and obtain underlayment manufacturer’s periodic site observation during underlayment installation and assembly.

I. Correct deficiencies or remove underlayments that do not comply with requirements; repair substrates and reapply underlayments, at no additional cost to Owner.
J. Coordinate installation of underlayments with work of other trades including doors, windows, window frames, curtain walls and other penetrations.

3.4 Self Adhered Underlayment Installation

A. Perform adhesion tests to assure that primers and self adhered underlayments will adhere to substrates in a manner that satisfies underlayment manufacturer and required warranties.

B. Install self adhered underlayment according to underlayment manufacturer’s written instructions and according to recommendations in ASTM D 6135. Make all laps 4 inches minimum

C. Corners: Prepare, prime and treat inside and outside corners according to ASTM D 6135. Install self adhered underlayment centered over vertical inside and outside corners. Install ¾-inch fillets of mastic on horizontal inside corners.

D. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations with termination mastic and according to ASTM D 6135.

E. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by self adhered underlayment in ½ day. Reprime areas exposed for more than 24 hours. Prime gypsum sheathing with number of prime coats required to achieve full bond, with adequate drying time between coats at no additional cost to Owner. Primed surfaces must be free of runs, puddles or excessive primer.

F. Apply and firmly adhere self adhered underlayments with full contact to substrate so surface of underlayment is flat without wrinkles, ridges, bumps, air pockets, and is completely adhered to substrate. After flashing has been applied roll all surfaces of flashing with a hard rubber roller to ensure that flashing is completely adhered to substrate. Accurately align sheets and maintain a uniform 3-inch-minimum lap widths and end laps. Overlap and seal seams and stagger end laps a minimum of 12 inches or 1 stud bay whichever is greater. End laps must always occur over a stud.

1. Apply sheets in a shingled manner to shed water without interception by any exposed sheet edges.
2. Roll sheets firmly to enhance adhesion to substrate.

G. Provide self adhered underlayments continuously behind all control joints, anchors, reglets, flashings, parapet and curb copings, and reveals.

H. Provide self adhered underlayment at all through wall penetrations. Lap underlayment onto both surfaces to completely seal penetration.

3.5 Building Paper Installation

A. Apply building paper horizontally with printed side out, starting at the bottom of the wall where indicated and lap each upper level over the level below with 4-inch laps. Provide 6-inch end laps. Fasten to substrate with staples. Seal all horizontal laps and end laps with recommended sealing tape. Stagger end laps a minimum of 24 inches.

B. Connect and seal building paper continuously to exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings.

C. Seal top of through-wall flashings to building paper with an additional 6-inch-wide self adhered underlayment strip.
D. Seal all exposed edges, seams, cuts, penetrations, terminations, all horizontal and vertical joints, with sealing tape. Seal all penetrations through building paper air tight.

E. Install two layers of building paper in all areas that are indicated to have building paper.

F. Do not joint building paper at inside and outside corners. Wrap building paper around corners and stagger joints.

G. At end of each working day, seal top edge of membrane to substrate with sealing tape.

H. Repair punctures, voids, and deficient lapped seams in building underlayment. Patch with underlayment and sealing tape, extending 6-inches beyond repaired areas in all directions.

3.6 Field Quality Control

A. Underlayment materials and installation are subject to inspection for compliance with requirements. Inspections may include the following:

1. Continuity of underlayment system has been achieved throughout the building envelope with no gaps or holes.
2. Continuous backing and structural support of underlayment system has been provided.
3. Site conditions for application temperature and dryness of substrates have been maintained.
4. Maximum exposure time of materials to UV deterioration has not been exceeded.
5. Surfaces have been primed.
6. Laps in sheet materials have complied with the minimum requirements and have been shingled in the correct direction, with no fishmouths.
7. Termination mastic has been applied on cut edges.
8. Self adhered underlayments have been firmly adhered to substrate.
9. Compatible materials have been used.
10. Transitions at changes in direction and structural support at gaps have been provided.
11. Connections between assemblies (membranes and sealants) have complied with requirements for cleanliness, preparation and priming of surfaces, structural support, integrity, and continuity of seal.
12. Check that all penetrations have been sealed.

B. Remove and replace deficient underlayment components and retest as specified above.

3.7 Cleaning and Protection

A. Protect underlayment system from damage during application and remainder of construction period.

1. Protect underlayments from exposure to UV Light and harmful weather exposure as required. Remove and replace underlayments exposed to these conditions for more than 30 days.
2. Protect underlayments from contact with creosote, uncured coal-tar products, TPO, EPDM, flexible PVC membranes, and sealants not approved by underlayment manufacturer.
3. Protect underlayments from puncture, tearing or other physical damage that would compromise function and warranties.
4. Replace all underlayments damaged by construction activities at no additional cost to Owner.

B. Clean spills, stains, and soiling from adjacent construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
SECTION 07321 - Clay Roof Tiles

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06100 "Rough Carpentry."
2. Section 06160 “Wood Sheathing.”
3. Section 07620 "Sheet Metal Flashing and Trim."

1.2 Definitions


1.3 Submittals

A. Product Data: For each type of product indicated.

B. Samples for Verification: For the following products, of sizes indicated, to verify color selected:

1. Clay Tile: Full size samples, showing full color range and variation.
3. Fastenings: Wire-tie system components, 12 inches long.
5. Snow Guard: Full size.

C. Material Test Reports: For each type of tile.

D. Research/Evaluation Reports: For clay tile, fasteners, and fastener systems.

E. Maintenance Data: For clay tile roofing to include in maintenance manuals.

F. Warranties: Special warranties specified in this Section.

1.4 Quality Assurance

A. Obtain clay tiles and clay tile accessories through one source from a single manufacturer.

B. Fire-Test-Response Characteristics: Provide clay tiles and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class A; UL 790 or ASTM E 108 for application and roof slopes indicated.
C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically noted by Contractor and approved by Architect in writing.
   3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Conduct pre-installation meeting at Project site to comply with requirements in Section 01310 "Project Management and Coordination."

1.5 Delivery, Storage, and Handling

A. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls. Store underlayment on locations away from direct sunlight, UV radiation, weather and moisture when left overnight or when roofing work is not in progress.

B. When left overnight or when roofing work is not in progress, handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

1.6 Project Conditions

A. Proceed with installation only when existing and forecasted weather conditions permit roofing to be performed according to manufacturer's written instructions and warranty requirements. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended in writing by manufacturer.

1.7 Warranty

A. Special Clay Roof Tile Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace tile that fails in materials within specified warranty period. Material failures include but are not limited to manufacturing defects that result in leaks.
   1. Material Warranty Period: 50 (fifty) years from date of Substantial Completion.

B. Special Roofing Installer's Warranty: Roofing installer's warranty, on warranty form at end of this Section, signed by roofing installer, covering Work of this Section, in which roofing installer agrees to repair or replace components of clay tile roofing including underlayment that fail in materials or workmanship within the following warranty period:
   1. Warranty Period: 5 (five) years from date of Substantial Completion.

PART 2 - Products

2.1 Clay Tiles

A. Subject to requirements, provide products by or equal to the following:
B. Clay Tile: ASTM C 1167, molded- or extruded-clay roof tile units of shape and configuration indicated, kiln fired to vitrification, and free of surface imperfections. Provide with fastening holes prepunched at factory before firing.

1. Weight per Sq.: 800Lbs.
2. Size: 18"L x 13"W
3. Provide High-Profile-Shape Clay Tile Accessory Shapes: Ridge, ridge vent, ridge end, hips and hip starters, header course, roll rake edge starters, end band, terminals, eave closure and top fixture color to match roof tile.

2.2 Accessories

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Elastomeric Sealant: ASTM C 920, silicone-based joint sealant; of Type S, Grade NS, Class 25, Use NT related to exposure, and, as applicable to joint substrates indicated, Use O.


D. Eave Closure: Manufacturer's standard EPDM eave closure formed to shape of tile.

E. Wood Nailers Battens: Comply with requirements in Section 06100 “Rough Carpentry” for pressure-preservative-treated wood.

2.3 Fasteners

A. Roofing Nails: ASTM F 1667, hot-dip galvanized steel, 0.1055-inch-diameter shank, sharp-pointed, conventional roofing nails with barbed shanks; minimum 3/8-inch-diameter head; and of sufficient length to penetrate ¾ inch into wood battens, roof-deck sheathing. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

B. Roofing Underlayment Nails: Hot-dip galvanized steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter.

C. Wood Batten Nails: ASTM F 1667, common or box, steel wire, flat head, and smooth shank.

D. Wire Ties: Stainless steel, 0.083-inch minimum diameter.

E. Twisted-Wire-Tie System: Continuously twisted two-wire unit with loops formed at 6 inches apart, minimum 0.083-inch-diameter galvanized steel wire and 0.037-inch-diameter galvanized steel tie wires, with matching-metal folding clip anchors.

F. Tile Locks: Hot-dip galvanized steel, 0.1-inch-diameter wire device designed to secure butt edges of cover tiles.

G. Storm Clips: Hot-dip galvanized steel strap-type, 0.04-by-1/2-inch L-shaped retainer clips designed to secure side edges of tiles. Provide with two fastener holes in base flange.

2.4 Underlayment Materials

A. Roof Underlayment: ASTM D 226, Type II, 30 lb. asphalt-saturated organic felt, unperforated.
2.5  **Sheet Metal Flashing and Trim**

A. Comply with requirements in Section 07620 "Sheet Metal Flashing and Trim." Provide zinc-tin alloy-coated stainless steel.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.

1. **Apron Flashings:** Fabricate with lower flange extending a minimum of 4 inches over and 4 inches beyond each side of downslope tile roofing and 6 inches up the vertical surface.
2. **Step Flashings:** Fabricate with a 3-inch headlap extending a minimum of 4 inches over the underlying tile roofing and 4 inches up the vertical surface.
3. **Channel Flashings:** Fabricate with vertical surface extending a minimum of 4 inches above the tile and 4 inches beneath the tile roofing and with a 1-inch-high vertical return to form a runoff channel.
4. **Rake Pan Flashings:** Fabricate with vertical surface extending over fascia and 6 inches beneath the tile roofing, with a 1-inch-high vertical return to form a runoff channel.
5. **Cricket Flashings:** Fabricate with concealed flange extending a minimum of 24 inches beneath upslope tile roofing, 6 inches beyond each side of penetration or curb, and 6 inches above the roof plane.
6. **Open-Valley Flashings:** Fabricate in lengths not exceeding 10 feet, with 1-inch-high, inverted-V profile at center of valley and with equal flange width of 12 inches.
7. **Drip Edges:** Fabricate in lengths not exceeding 10 feet, with 4-inch roof-deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge. Hem drip edge.

C. **Vent-Pipe Flashings:** ASTM B 749, Type L51121, at least 1/16-inch-thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches from pipe onto roof.

**PART 3 - Execution**

3.1  **Examination**

A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through roof.
3. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with installation of flashings, underlayments or roofing tiles indicates acceptance of substrates.

3.2  **Underlayment Installation**

A. Install underlayments according to tile manufacturer's written recommendations and recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

1. Cover ridge wood nailers with underlayment strips.
B. **Double-Layer Roof Felt Underlayment:** Install perpendicular to roof slope in parallel courses. Install a 19-inch-wide starter course at eaves and completely cover with full-width second course. Install succeeding courses lapping previous courses 19 inches in shingle fashion. Lap ends a minimum of 6 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with felt underlayment nails.

1. Apply a continuous layer of asphalt roofing cement over starter course and on roof felt underlayment surface to be concealed by succeeding courses as each roof felt course is installed. Apply over entire roof.
2. Install roof felt underlayment on roof sheathing not covered by self-adhering sheet underlayment. Lap edges not less than 3 inches over self-adhering sheet underlayment in direction to shed water.

C. **Metal-Flashed Open-Valley Underlayment:** Install 1 layer of 18-inch-wide self-adhered underlayment centered in valley. Stagger end laps between layers at least 72 inches. Lap ends of each layer at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Fasten each layer to roof deck with felt underlayment nails. Lap roof-deck underlayment over first layer of valley underlayment at least 6 inches.

### 3.3 **Metal Flashing Installation**

A. Install metal flashings and other sheet metal to comply with requirements in Section 07620 "Sheet Metal Flashing and Trim." Install metal flashings according to tile manufacturer's written recommendations and recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

### 3.4 **Wood Nailers**

A. Install wood nailers at ridges, hips and rakes, and securely fasten to roof deck.

B. Install beveled wood cant at eaves and securely fasten to roof deck.

C. Install nominal 1-by-2-inch wood battens horizontally at spacing required by roof tile manufacturer and securely fasten to roof deck.

### 3.5 **Tile Installation**

A. Install roof tiles according to manufacturer's written instructions and recommendations in RTI/WSRCA's "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," and to NRCA's "The NRCA Roofing and Waterproofing Manual."

1. Maintain uniform exposure and coursing of tiles throughout roof.
2. Extend tiles 2 inches over eave fasciae.
3. Nail Fastening: Drive nails to clear the tile so the tile hangs from the nail and is not drawn up. Install wire through nail holes of cut tiles that cannot be nailed directly to roof deck, and fasten to nails driven into deck.
4. Wire Tie Fastening: Install wire-tie systems and fasten tile according to manufacturer's written instructions.
5. Install storm clips to capture edges of longitudinal sides of tiles and securely fasten to roof deck.
6. Install tile locks to support and lock overlying tile butts to underlying tiles.
7. Cut and fit tiles neatly around roof vents, pipes, ventilators, and other projections through roof. Fill voids with mortar.
8. Install tiles with color blend approved by Architect.

B. **Low-Profile Interlocking Tile Installation:**
1. Provide minimum 3-inch lap between succeeding courses of tile.
2. Install L-shaped rake tiles.
3. Install ridge tiles with laps facing away from prevailing wind. Seal laps with elastomeric sealant.

C. High-Profile Tile Installation:
   1. Install EPDM eave closure.
   2. Provide minimum 3-inch lap between succeeding courses of tiles.
   3. Install roll rake tiles.
   4. Install ridge tiles with laps facing away from prevailing wind. Seal laps with elastomeric sealant.

D. Open Valleys: Cut tiles at open valleys to form straight lines. Maintain uniform width of exposed open valley. Widen exposed portion of open valley 1/8 inch in 12 inches from highest to lowest point. Drill cut valley tiles and wire tie to fastener placed clear of metal flashings. Do not nail tiles to metal flashings.

E. Closed Valleys: Cut tiles at closed valleys to form straight lines, trimming upper concealed corners of tiles. Maintain uniform gap of ½ to ¾ inch at centerline of valley. Drill cut valley tiles and wire tie to fastener placed clear of valley metal flashing. Do not nail tiles to metal flashings.

3.6 Adjusting and Cleaning
   A. Remove and replace damaged or broken tiles.
   B. Remove excess tile and debris from Project site.

END OF SECTION 07321
SECTION 07620 - Sheet Metal Flashing and Trim

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06100 “Rough Carpentry.”
2. Section 07271 “Building Underlayments.”
3. Section 07321 “Clay Roof Tiles.”
4. Section 09900 “Painting.”

1.2 Performance Requirements

A. Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Fabricate and install roof edge flashing and copings capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:

1. Wind Zone 3: For velocity pressures of 46 to 104 lbf/sq. ft: 208-lbf/sq. ft. perimeter uplift force, 312-lbf/sq. ft. corner uplift force, and 104-lbf/sq. ft. outward force.

C. Provide sheet metal flashing and trim that allow for thermal movements resulting from the maximum change (range) in ambient and surface temperatures of 120 deg F, ambient; 180 deg F, material surfaces by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

D. Provide sheet metal flashing and trim that do not allow water infiltration to building interior concealed spaces, unoccupied spaces or cavities.

1.3 Submittals

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:

1. Identify material, thickness, weight, and finish for each item and location in Project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.

C. Samples: For each type of metal and exposed finish required, 12 inches long in shapes, bends and folds indicated. Include fasteners, cleats, clips, closures, and other attachments.
1.4 Quality Assurance

A. Comply with SMACNA’s "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

B. Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation. Coordinate to provide flashing integrated with mockups required in other sections of work. Install flashing mockups in a stepped fashion to show all elements of the required installation.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
3. Use same materials, in thickness, gauge and finishes as required by construction documents.

C. Conduct pre-installation meeting at Project site to comply with requirements in Section 01310 "Project Management and Coordination."

1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Document commend and decisions, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 Delivery, Storage, and Handling

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.6 Coordination

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - Products

2.1 Sheet Metals

A. Prepainted (Galvanized) Steel Sheet: Steel sheet metallic coated by the hot-dip process and painted after forming process to comply with ASTM A 755.

1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653, G90 coating designation; structural quality.
a. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1) Fluoropolymer 3-Coat System: Manufacturer's 3-coat, thermocured system consisting of specially formulated inhibitive primer, epoxy fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight, with a minimum total dry film thickness of 1.5 mil; complying with physical properties and coating performance requirements of AAMA 2605, except as modified below:

   a) Humidity Resistance: 2000 hours.
   b) Salt-Spray Resistance: 2000 hours.

2) Color: As selected by Architect from manufacturer's full range including custom colors.

2.2 Miscellaneous Materials

A. Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.

C. Solder for Zinc: ASTM B 32, 60 percent lead and 40 percent tin with low antimony, as recommended by manufacturer.

D. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.


F. Provide field applied fluoropolymer paint for touch-up of field cut and drilled surfaces.

2.3 Fabrication, General

A. Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems. Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
D. Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

E. Provide lapped or bayonet-type expansion provisions in the Work.

F. Conceal fasteners and expansion provisions wherever possible on sheet metal flashing and trim, unless otherwise indicated.

G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal. Provide attachment devised in thicknesses as recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

2.4 Steep-Slope Roof Sheet Metal Fabrications

A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following material:


B. Drip Edges: Fabricate from the following material:


C. Eave, Rake, and Ridge Flashings: Fabricate from the following material:


D. Base Flashing: Fabricate from the following material:


E. Counterflashing: Fabricate from the following material:


F. Roof-Penetration Flashing: Fabricate from the following material:


2.5 Finishes

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
PART 3 - Execution

3.1 Examination

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with installation indicates acceptance of substrate condition by Contractor.

3.2 Installation, General

A. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system. Torch cutting of sheet metal flashing and trim is not permitted.

B. Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating.

1. Coat side of uncoated aluminum and lead sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.

2. Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet.

3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance. Do not allow roofing cement to be exposed.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

F. Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

G. Use stainless-steel screw-type fasteners of sizes that will penetrate substrate not less than 3/4 inch.

H. Seal joints with elastomeric sealant as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

2. Prepare joints and apply sealants to comply with requirements in Section 07920 "Sealants."
3.3 Roof Flashing Installation

A. Install sheet metal roof flashing and trim to comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone.

C. Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone.

D. Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with elastomeric sealant.

E. Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof.

3.4 Wall Flashing Installation

A. Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

3.5 Cleaning and Protection

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07620
SECTION 07920 - Sealants

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:
   1. Section 07271 “Building Underlayments.”
   2. Section 07620 “Sheet Metal Flashing and Trim.”
   3. Section 09250 "Gypsum Board.”

1.2 Definitions

A. Type S: Products finished prepackaged which no job-site mixing is required.

B. Grade P: Products having sufficient flow to fill joints in horizontal surfaces and remain level and smooth at temperatures as low as 40 deg F.

C. Grade NS: Nonsag sealant that permits application in joints on vertical surfaces without sagging or slumping when applied at temperatures between 40 degrees F and 122 degrees F.

D. Use T: Classifies sealants designed for joints in surfaces subject to pedestrian and vehicular traffic.

E. Use NT: Classifies sealants designed for nontraffic exposure.

F. Use M, G, A: Refers to sealants which remain adhered, within given parameters, to various standard specimens.

G. Use O: Refers to substrate materials other than M, G, and A.

1.3 Performance Requirements

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

C. Staining and leaching by sealant or primer will not be acceptable. All stained materials must be cleaned to show no visible evidence of sealant or primer staining or leaching, or removed and replaced. Where doubt about staining exists, test a sample of material in question.

D. Provide sealants that are compatible with all building underlayments, paints, coatings, and waterproofing. Coordinate with work of those sections to determine compatibility.

1.4 Submittals

A. Product Data: For each sealant product indicated.
B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in ½-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. SWRI Validation Certificate: Each sealant to be validated by SWRI's Sealant Validation Program.

E. Qualification Data: For installer.

F. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
   1. Materials forming joint substrates and sealant backings have been tested for compatibility and adhesion with joint sealants.
   2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

G. Warranties specified in this Section.

H. Sealant schedule indicating manufacturer, sealant material, product identification, type, grade, class, use classification and joint backing for each sealant system and location on project.

1.5 Quality Assurance

A. Provide sealant manufacturer's authorized installer who is approved or licensed for installation of elastomeric sealants required for this Project, and who has completed 5 years of joint sealant applications similar in materials, scope and extent to the Work indicated.

B. Obtain each type of joint sealant through one source from a single manufacturer.

C. Comply with the following:
   1. ASTM C 919 – Practice for use of sealants in acoustical applications.

D. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
   1. Locate test joints on Project as directed by Architect.
   2. Conduct field tests for each application indicated below:
      a. Each type of elastomeric sealant and joint substrate indicated.
      b. Each type of nonelastomeric sealant and joint substrate indicated.
   3. Notify Architect seven days in advance of dates and times when test joints will be erected.
   4. Arrange for tests to take place with sealant manufacturer's technical representative present. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
   5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint sealant.
substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained. Submit written report of testing to Owner, Architect and Inspector of Record.

6. Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing. Remove failing sealants in their entirety.

E. Incorporate sealant joints into mockups to verify selections made and to demonstrate aesthetic effects and set quality standards for materials and execution. Coordinate sealant requirements for mock-ups required for work of other sections.

F. Conduct preinstallation meeting at Project site and review the following:

1. Submittals and sealant schedule.
2. Surface condition, weather conditions and substrate preparation.
3. Sequencing of installation and coordination with Work of other trades.
4. Installation methods and requirements.
5. Protection of Work.

1.6 Project Conditions

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.
5. When cementitious substrates are not thoroughly cured and dry.

1.7 Warranty

A. Special Installer’s Warranty: Installer's standard form in which installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within 5 (five) years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within 5 (five) years from date of Substantial Completion.

C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.
1.8 Delivery, Storage and Handling

A. Deliver and store packaged materials in manufacturer’s original unopened containers with seals unbroken and labels intact until time of use. Store materials off ground and under cover to prevent damage or contamination to materials by water, freezing, foreign matter or other causes. Promptly remove from site any materials which show evidence of damage and immediately make all replacements necessary.

PART 2 - Products

2.1 Manufacturers

A. Subject to requirements, provide products by one of, or equal to, the following:

1. Dow Corning Corporation.
2. General Electric Co.
3. Pecora Corporation.
4. Sonneborn Building Products Division / ChemRex, Inc.
5. Tremco, Inc.: 

2.2 Materials, General

A. Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. Provide sealants and sealant primers that comply with VOC content requirements by authorities having jurisdiction.

C. Colors of Exposed Sealants: As selected by Architect from manufacturer’s full range.

D. Elastomeric sealants shall be nonstaining to porous substrates. Provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

E. Provide products that are permanently flexible.

F. Provide heat resistant sealant in areas affected by a rise in temperature.

2.3 Backing

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

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin as recommended in writing by sealant manufacturer,) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance. Provide polyethylene tape for joints too shallow to allow use of foam rod.

C. Provide polyethylene bond breaker adhesive tape or other plastic tape recommended in writing by sealant manufacturer for preventing sealant from adhering to joint surfaces where such adhesion would result in sealant failure.

2.4 Miscellaneous Materials
A. Provide primers recommended in writing by sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction sealant-substrate tests and field tests.

B. Provide cleaners for surfaces, acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Provide nonstaining, nonabsorbent masking tape compatible with joint sealants and surfaces adjacent to joints.

D. Cleaning Cloths: Clean soft absorbent, lint free, cloths.

PART 3 - Execution

3.1 General

A. Prepare substrates and apply sealant in accordance with manufacturer’s written instructions.

B. Handle and apply sealant materials in a manner that complies with regulations of jurisdictions having authority.

C. Do not use sealants in below grade applications, in areas of water immersion or on materials bleeding oils, plasticizers and solvents.

D. When applying sealants to metal and zinc coated substrates verify that sealant will not cause discoloration or corrosion.

E. Allow sealants to fully cure before concealing within elements of construction.

F. Complete horizontal joints prior to vertical joints. Lap vertical joint sealant over and onto horizontal sealant.

3.2 Examination

A. Examine joints indicated to receive joint sealants, with installer and sealant manufacturer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting sealant performance and warranty requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with installation constitutes acceptance of substrates and conditions by Contractor, Installer and Manufacturer.

3.3 Preparation

A. Clean out joints immediately before installing joint sealants to comply with sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), curing compounds, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, frost, soap residue, soil or other sealing compounds.

2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing
optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Make sure that apparently clean surfaces are not covered with a thin film of dust.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Do not flood surfaces with cleaners and solvents.

B. Prime joint substrates, where recommended in writing by sealant manufacturer and based on preconstruction sealant-substrate tests or prior experience. Apply primer to comply with sealant manufacturer's written instructions. Confine primers to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Use masking tape to create neat sealant lines and where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Do not allow masking tape to touch clean surfaces to which sealant will adhere. Remove tape immediately after tooling without disturbing joint seal.

3.4 Installation of Sealants

A. Comply with sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. For general sealant installation comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. For acoustical sealant application standards, comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates in continuous ribbons without gaps or air pockets.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Do not allow sealants to overflow confines of joint or onto adjoining Work.

G. Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Tool sealant within time limits recommended in writing by sealant manufacturer in one continuous stroke within 10 minutes of application to a slightly concave joint configuration slightly below adjoining surfaces per Figure 5A in ASTM C 1193, unless otherwise indicated.
4. Where sealant joints occur between horizontal and vertical surfaces fill joint to form a slight cove so that joint will not trap and pool moisture and dirt.
5. Use masking tape to protect surfaces adjacent to recessed tooled joints.
6. Remove masking tape immediately after tooling and before sealant skin forms (within 5 – 10 minutes.)

3.5 Cleaning

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur. Do not allow cleaning materials or solutions to come in contact with joint sealant proper.

3.6 Protection

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 Sealant Schedule

<table>
<thead>
<tr>
<th>Application</th>
<th>Sealant Description</th>
<th>Type</th>
<th>Grade</th>
<th>Class</th>
<th>Exposure Use</th>
<th>Substrate Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control and expansion joints on exposed interior surfaces of exterior walls</td>
<td>Single component neutral curing silicone sealant</td>
<td>S</td>
<td>NS</td>
<td>25</td>
<td>NT</td>
<td></td>
</tr>
<tr>
<td>Interior perimeter joints of exterior openings</td>
<td>Single component neutral curing silicone sealant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical joints on exposed surface of interior masonry, concrete and gypsum board walls</td>
<td>Single component neutral curing silicone sealant</td>
<td>S</td>
<td>NS</td>
<td>25</td>
<td>NT</td>
<td></td>
</tr>
</tbody>
</table>

END OF SECTION 07920
SECTION 09220 – Exterior Plaster

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06100 “Rough Carpentry.”
2. Section 06160 “Wood Sheathing.”
3. Section 07210 “Building Insulation.”
4. Section 07920 “Sealants.”
5. Section 09250 “Gypsum Board.”

1.2 Submittals

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show locations, dimensions and layout of control joints including plans, elevations, details of components, and attachments to other work.

C. Samples for Verification: For each type of color and texture indicated; 12 x 12 inches, and prepared on rigid backing. Provide 12 inch long sample of each type of metal trim, reveal and control joint.

1.3 Quality Assurance

A. Fire-Test-Response Characteristics: For exterior cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. Mockups: Before plastering, install mockups to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Install mockups for each type of finish indicated.
2. For interior plasterwork, simulate finished lighting conditions for review of mockups.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
4. Install mockups in a layered fashion to show all parts of the assembly including lath and fasteners, edge moldings, reveals, control joints, jointing around openings, underlayments, flashings and sealants.
5. Mockups may become part of the Work if they remain undisturbed and undamaged during the course of the Work.

C. Conduct pre-installation meeting at Project site to comply with requirements in Section 01310 “Project Management and Coordination.”

D. Comply with the Technical Services Information Bulletin (TSIB).

E. Comply with the California Lathing and Plastering Contractor’s Association.
F. Provide installer with 5 years minimum documented experience in installing and applying specified products.

1.4 Delivery, Storage, and Handling

A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.5 Project Conditions

A. Comply with ASTM C 926 requirements.

B. Interior Plasterwork: Maintain room temperatures at greater than 40 deg F for at least 48 hours before plaster application, and continuously during and after application.

1. Avoid conditions that result in plaster drying out during curing period. Distribute heat evenly; prevent concentrated or uneven heat on plaster.
2. Ventilate building spaces as required to remove water in excess of that required for hydrating plaster in a manner that prevents drafts of air from contacting surfaces during plaster application and until plaster is dry.
3. Keep other surfaces adjacent to and within area of plaster Work from becoming damp or wet.

C. Exterior Plasterwork:

1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
2. Apply plaster when ambient temperature is greater than 40 deg F.
3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.

D. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.

PART 2 - Products

2.1 Metal Lath


1. Subject to requirements, provide products by one of, or equal to, the following:
   a. Alabama Metal Industries Corporation (AMICO).
   b. California Expanded Metal Products Company (CEMCO).
   c. Unimast, Inc.
   d. Western Metal Lath & Steel Framing Systems.

3. 3/8-inch rib lath for soffits. Weight: 3.4 lb/sq. yd.

2.2 Accessories

A. Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required. Provide zinc and zinc-coated (galvanized) accessories:
1. Subject to requirements, provide products by one of, or equal to, the following:
   a. Alabama Metal Industries Corporation (AMICO).
   b. California Expanded Metal Products Company (CEMCO).
   c. Western Metal Lath & Steel Framing Systems.


4. Exterior Cornerbeads: Lath type, solid metal nose edge corner bead fabricated from zinc-coated (galvanized) steel.

5. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.

6. Control Joints: Fabricated from zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.

7. Soffit Vent: Fabricate from zinc coated (galvanized) steel perforated and flanged to receive plaster. See Drawings for width.

2.3 Miscellaneous Materials

A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant polypropylene fibers, ½ inch long, free of contaminants, manufactured for use in exterior cement plaster.

C. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

2.4 Plaster Materials


B. Acrylic Admix: Omega Acrylic 500 or approved equal.

C. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

D. Sand Aggregate: ASTM C 897.

E. Acrylic-Based Finish Coatings: Factory-mixed acrylic-emulsion coating systems formulated with colorfast mineral pigments and fine aggregates; for use over exterior cement plaster base coats. Include manufacturer's recommended primers and sealing topcoats for acrylic-based finishes.

1. Subject to requirements, provide products by one of, or equal to, the following:
   a. ChemRex, SonoWall Stucco Systems.
   b. Omega; AcroFlex.
   c. Sto Corp.

2. Color: As selected by Architect from manufacturer’s full range.

2.5 Plaster Mixes

A. General: Comply with ASTM C 926 for applications indicated.
1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. ft. of cementitious materials. Reduce aggregate quantities accordingly to maintain workability.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

1. Portland Cement Mixes:
   a. Scratch Coat: For cementitious material, mix 1 part Portland Cement and 0 to 3/4 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
   b. Brown Coat: For cementitious material, mix 1 part Portland Cement and 0 to 3/4 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

C. For factory-prepared finish-coat mixes, comply with manufacturer's written instructions.

PART 3 - Execution

3.1 Examination

A. Examine areas and substrates, with installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with installation indicates acceptance of substrate conditions by Contractor.

3.2 Preparation

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare solid-plaster bases that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

3.3 Installing Metal Lath

A. Expanded-Metal Lath: Install according to ASTM C 1063.
   2. Flat-Ceiling and Horizontal Framing: Install 3/8” rib lath.

3.4 Installing Accessories

A. Install according to ASTM C 1063 and at locations indicated on Drawings.

B. Reinforcement for External Corners:
   1. Install lath-type corner reinforcement at interior corners.
   2. Install lath-type with metal nosing cornerbead at exterior corners.
C. Install control joints at locations indicated on Drawings and as required to delineate plaster Work into maximum areas of 120 square feet, with 12 feet maximum in any direction.

3.5 Plaster Application

A. Comply with ASTM C 926. Install plaster in 3 coat application; scratch, Brown and finish coats.
   1. Do not deviate more than plus or minus ¼ inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface, in any direction.
   2. Grout hollow-metal frames, bases, and similar work occurring in plastered areas, with base-coat plaster material, before lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout at least 6 inches at each jamb anchor.
   3. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground, unless otherwise indicated. Where casing bead does not terminate plaster at metal frame cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
   4. Provide plaster surfaces that are ready to receive field-applied finishes indicated.
   5. Grout hollow-metal frames, bases, and similar work occurring in plastered areas, with base-coat plaster material, before lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout at least 6 inches at each jamb anchor.
   6. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground, unless otherwise indicated. Where casing bead does not terminate plaster at metal frame cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
   7. Mix plaster as needed but do not mix more plaster than can be used in 1 hour.
   8. Moist cure Brown coat.

B. Plaster Finish Coats: Apply to match texture of existing plaster finish.

C. Acrylic-Based Finish Coatings: Apply coating system, including primers, finish coats, and sealing topcoats, according to manufacturer's written instructions.

3.6 Cutting and Patching

A. Cut, patch, replace, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.7 Cleaning and Protection

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

END OF SECTION 09220
SECTION 09250 - Gypsum Board

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 06100 “Rough Carpentry.”
2. Section 07210 “Building Insulation.”
3. Section 09900 “Painting.”

1.2 Submittals

A. Product Data: For each type of product indicated.

B. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch-long length for each trim accessory indicated.
2. Textured Finishes: 12-inch by 12-inch for each gypsum board finish indicated and on same backing indicated for Work.

1.3 Quality Assurance

A. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution. Install mockups for each level of gypsum board finish indicated for use in exposed locations and each texture finish indicated.

1. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups. Apply in layer fashion to show all steps in application.
2. Simulate finished lighting conditions for review of mockups.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Applicator of gypsum board products and finishes to have a minimum of 10 years experience with similar installations and applications.

1.4 Storage and Handling

A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.5 Project Conditions

A. Comply with ASTM C 840 for environmental requirements or gypsum board manufacturer's written recommendations, whichever are more stringent. Provide for more expensive condition at no additional cost to Owner.
B. Do not install interior products until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
   1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - Products

2.1 Panels, General
   A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 Interior Gypsum Board
   A. Complying with ASTM C 36 or ASTM C 1396, as applicable to type of gypsum board indicated and whichever is more stringent. Provide in thickness and types indicated.
      1. Subject to requirements, provide products by one of, or equal to, the following:
         a. G-P Gypsum.
         c. PABCO Gypsum.
         d. USG Corporation.

   B. Regular Type: Long Edges: Tapered.

2.3 Exterior Gypsum Sheathing
   A. Glass-Mat Gypsum Sheathing Board: ASTM C 1177. Subject to requirements, provide "Dens-Glass Gold" by G-P Gypsum, or approved equal. Core: As indicated.

2.4 Trim Accessories
   A. Interior Trim: ASTM C 1047.
      2. Shapes:
         a. Corner bead.
         b. LC-Bead: J-shaped; exposed long flange receives joint compound.
         c. U-Bead: J-shaped; exposed short flange does not receive joint compound.

2.5 Joint Treatment Materials
   A. General: Comply with ASTM C 475.

   B. Joint Tape:
      1. Interior Gypsum Wallboard: Paper.
2. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
   1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
   2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
   3. Fill Coat: For second coat, use drying-type, all-purpose compound.
   4. Finish Coat: For third coat, use drying-type, all-purpose compound.
   5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

2.6 Auxiliary Materials

A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
   1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick. Provide length of screw for fastening through single-layer gypsum board applications that will fully penetrate flange of steel stud or provide 1 inch embedment into wood sheathing/stud. Provide fastener appropriate to supporting substrate.

PART 3 - Execution

3.1 Examination

A. Examine areas and substrates, with installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

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

D. Proceeding with installation indicates acceptance of substrate conditions by Contractor.

3.2 Applying and Finishing Panels, General

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control joints with space between edges of adjoining gypsum panels.
F. Cover both faces of support framing with gypsum panels in concealed spaces.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch-wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members, or provide control joints to counteract wood shrinkage.

3.3 Applying Interior Gypsum Board

A. Install interior gypsum board in locations indicated on Drawings.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless otherwise required by fire-resistance-rated assembly, and minimize end joints. Stagger abutting end joints not less than one framing member in alternate courses of panels. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Apply gypsum panels to supports with steel drill screws.

3.4 Applying Exterior Gypsum Sheathing

A. Apply panels perpendicular to supports, with end joints staggered and located over supports.

1. Install with 1/4-inch open space where panels abut other construction or structural penetrations.
2. Fasten with corrosion-resistant screws.

3.5 Installing Trim Accessories

A. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints at locations indicated and according to ASTM C 840, and approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners, unless otherwise indicated.
2. LC-Bead: Use at exposed panel edges.
3. U-Bead: Use at exposed panel edges.

3.6 Finishing Gypsum Board

A. Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. Gypsum Board Finish Levels: Comply with Gypsum Association GA 214, finish panels to levels indicated on Drawings and according to ASTM C 840.

E. Primer and its application to surfaces are specified in other Division 9 Sections.

F. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board and wall sheathing.

3.7 Applying Texture Finishes

A. Prepare and apply primer to gypsum panels receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.

B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture matching approved mockup and free of starved spots or other evidence of thin application or of application patterns.

C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.8 Protection

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09250
SECTION 09900 - Painting

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 07620 “Sheet Metal Flashing and Trim.”
2. Section 09250 “Gypsum Board.”

1.2 Submittals

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.

1. Submit 7 (seven) samples on rigid backing, 8 inches square.
2. Step coats on samples to show each coat required for system including primer.
3. Label each coat of each sample with manufacturer and product designation name and number.

C. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

D. Submit manufacturer’s current written instructions and recommended methods of installation including substrate preparation and application rates.

E. Provide full coat finish mockups on actual project substrates for all paint systems and colors indicated. Simulate finished lighting conditions for review.

1.3 Quality Assurance

A. MPI Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

B. Apply benchmark mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
a. Wall and Ceiling Surfaces: Provide actual project paint mockups of at least 100 sq. ft.
b. Other Items: Architect will designate items or areas required.

2. Apply benchmark mockups after permanent lighting and other environmental services have been activated.
3. Final approval of color selections will be based on benchmark mockups. If preliminary color selections are not approved, apply additional benchmark mockups of additional colors selected by Architect at no added cost to Owner.

C. Provide painter with 10 (ten) years experience in the type of painting applications specified for this project.

D. Coordinate with other trades and Work of other Sections that will be applying primers to Work of those Sections, to ensure compatibility of the total paint system over substrate. Provide information on top coats to ensure use of compatible primers. Omit primer on metal surfaces that have been shop primed.

E. This Section includes painting of all Work, items and surfaces which are normally painted in a building of this type and level of quality, and shall be included in the Contract, whether or not painting of a specific item or surface is specifically called out and included in the drawings or mentioned in specifications.

F. Schedule indications on drawings are general and do not necessarily define the detail requirements. Include all detailed refinements for the required complete finishing of all spaces and rooms.

G. Include painting of all items and assemblies even if color is not yet indicated.

1.4 Delivery, Storage, And Handling

A. Deliver paint materials to project site in manufacturer’s original unopened containers bearing manufacturer’s label, with manufacturer’s name, logo, paint type, sheen, stock number, date of manufacture, contents by volume for pigment solids and vehicle constituents, thinning instructions, color name and number, and shelf life. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Place oily rags and waste in a metal container and remove from project site daily.

1.5 Project Conditions

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 55 and 95 deg F. Avoid painting surfaces when exposed to direct sunlight.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg. F above the dew point. Do not apply paint in damp or rainy conditions, or to damp or wet surfaces, or when inclement weather is expected within the drying/curing time recommended in writing by manufacturer.

C. Moisture test surfaces prior to applying any paint coatings. Verify that substrates have a maximum moisture content that complies with paint manufacturer’s written recommendations, and in no case higher than 12% maximum moisture content. Submit written test results.

D. Perform pH tests on concrete and masonry substrates. Verify pH levels are within paint manufacturer’s written recommendations, but in no case higher than 10. Submit written test results. If required by paint manufacturer’s written recommendations due to alkali content, apply a surface primer to concrete and masonry, such as Frazee 266 EPOTILT, or approved equal, prior to applying acrylic block filler.

Painting
09900-2
PART 2 - Products

2.1 Manufacturers

A. Subject to requirements, provide products by one of, or equal to, the following:
   1. Benjamin Moore & Co.
   2. Dunn-Edwards Corporation.
   3. Frazee Paint.
   5. Vista Paint.

2.2 Paint Materials

A. Provide materials for use within each paint system that are compatible with one another and compatible with substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

B. For each paint system, provide products recommended in writing by topcoat manufacturer for substrate indicated. Provide all products within a paint system by a single manufacturer including prep coats and primers.

C. Provide products that comply with jurisdictional requirements for VOC content, exclusive of colorants added to a tint base.

D. Provide paint that contains 30-45% solids, minimum.

E. In areas prone to mildew growth such as coastal areas or high humid environments, add a mildewcide to paint materials in quantities recommended in writing by manufacturer.

F. All paints and primers shall be ready mixed in original containers.

PART 3 - Execution

3.1 Examination

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content, pH levels and other conditions affecting performance of work.

B. Be aware of a condition known as critical lightning. This condition causes shadows that accentuate even the slightest surface variations. A base sealer will provide tooth for succeeding paint coatings but does not equalize smoothness of surface texture. Any corrective action must be done by drywall finisher / installer prior to painting. Coordinate with drywall installer to achieve desired results.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Unsatisfactory surfaces and materials must be corrected by applicable trade before painting.

E. In reconstruction areas where permanent installed items have been removed; provide textures, primers, and coatings as needed to eliminate ghosting and to make surface visually indistinguishable in all respects to adjacent exposed surfaces.
F. Begin coating application only after unsatisfactory conditions have been corrected and are within manufacturer’s written recommendations and requirements of Contract documents. Architect shall be final judge on satisfactory conditions. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

G. Notify Architect with written RFI of any problems anticipated using paint materials specified over substrates indicated or project conditions. Failure to provide written RFI prior to starting painting operations constitutes Contractor’s acceptance of substrates and conditions.

3.2 Preparation

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" for preparation of substrates indicated. Surfaces which cannot be prepared or painted as specified shall be immediately brought to the attention of the Architect in writing. Starting of Work without such written notification constitutes Contractor’s acceptance of substrates and conditions.

B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
3. Do not apply paint in areas where dust is being generated.

C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, dust, and incompatible paints and encapsulants.

1. Remove incompatible primers and coatings, and reprime substrate with compatible primers as required to produce paint systems indicated.
2. Prepare all surfaces per manufacturer’s written recommendation and per SSPC SP1, SP2 and SP3 as required by substrate and paint system requirements and as required by Contract documents.
3. Screen, cover or mask adjacent surfaces and materials which are not to receive paint or paint dust. Use appropriate light or medium tack masking tape.

D. Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions, and requirements of contract documents.

E. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal with a solvent or water based degreaser. To produce clean surfaces, etch cleaned galvanized metal surfaces with an etching solution, such as Jasco Prep and Prime or approved equal before applying primer. Clean acid etch solution completely from surfaces. Prime surface within 3 hours of acid etching.

F. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime and backprime all surfaces of wood including cut and uncut edges, ends, faces, undersides, and backsides of wood including wood paneling, doors, windows, trim and cabinets. Use clear sealer to back prime wood receiving transparent finishes.
4. For woods prone to tannin bleed (i.e., redwood and cedar,) apply 2 coats of primer.
5. After priming, fill holes, cracks and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
6. Fill all molding and trim joints and mortises completely and sand smooth prior to painting.

G. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth. For non-flat paint sheens, apply a preparation coating such as Frazee 067 Prep Step or approved equal, prior to primer and finish coats. All drywall surfaces to be dust free before painting. Skim coated drywall shall be sealed with sealer recommended in writing by paint manufacturer.

H. Plaster Substrates: Do not begin paint application until plaster is fully cured and dry.

I. Existing surfaces to be recoated shall be thoroughly cleaned and prepared as recommended in writing by paint manufacturer. Patches and bare areas shall be spot primed with same primer as required for new surfaces.

J. Newly poured bare concrete floors to be cleaned with a 5 percent solution of muriatic acid or other acid etching cleaner. Flush floor with clean water to remove acid, neutralize with ammonia and rinse; allow to dry.

K. Existing floors scheduled to be painted shall be bead blasted to expose bare concrete in all areas. Test for moisture level as required by Contract documents. Vacuum before painting.

3.3 Application

A. Coating systems specified indicate a minimum number of coats. Do not thin primers or paints; apply paint taken directly from manufacturer’s containers. Apply at coverage rates recommended by paint manufacturer. Apply primer coat as recommended by manufacturer to properly prepare surface for finish coats, one coat minimum. Apply additional primer coats, as necessary, to cover suction spots or unsealed areas, to properly prepare surface for finish coats at no additional cost to Owner. Apply finish coats as recommended by manufacturer, two coats minimum. Apply additional finish coats as needed to completely hide base substrates and achieve the desired consistency, uniformity in finish surface, and sheen at no additional cost to Owner.

B. Apply paints according to manufacturer's written instructions.

1. Flat and eggshell finishes may be rolled or brushed on drywall, plaster and CMU. Spray-apply primer, intermediate and finish coats on all other surfaces.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces. Paint inside surfaces of all panel covers and inside of all boxes.

C. Do not paint over dirt, rust, scale, grease, mildew, mold, moisture scuffed surfaces, or conditions detrimental to durable uniform paint film.

D. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. If undercoats or other conditions show through topcoat, apply additional coats until cured film as a uniform paint finish, color, and appearance. Comply with manufacturer’s written recommendations for drying times between succeeding coats.

E. Lightly sand and remove all dust between succeeding coats.
F. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

G. Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:
   1. Uninsulated metal piping and conduit.
   2. Uninsulated plastic piping.
   3. Pipe hangers and supports.
   4. Visible portions of internal surfaces of metal ducts to a point 3 feet back from duct outlet, without liner, behind air inlets and outlets.
   5. Paint all exposed surfaces in plenum spaces that can be visually seen through return and supply registers including; equipment, ductwork, piping and conduit.
   6. Paint all recessed fire sprinkler head cover plates, semi-recessed and exposed sprinkler head trims to match adjacent surfaces.
   7. Paint all registers and vents to match adjacent surfaces.

H. Do not paint over prefinished mechanical equipment, electrical switch covers, and transformers, UL labels, equipment and piping labels. Do not paint over fuseable links or sprinkler heads. Paint exposed pipes, ductwork, conduit and supporting hangers and suspension systems to match adjacent surfaces. Do not paint valve assemblies.

I. Leave all parts of molding and ornaments clean and true to details with no undue amount of paint in corners and depressions.

J. Make edges of paint adjoining other material or color clean and sharp with no overlapping.

K. Refinish whole wall where portion of finish is deemed unacceptable by Architect.

L. All materials shall be spray-applied evenly with proper film thickness and free of runs, sags, skips and other defects, except drywall, plaster and CMU with flat or eggshell finish. Varnishes shall be sanded lightly between coats, dusted and cleaned before recoating.

M. Hardware, hardware accessories, plates, lighting fixtures and similar items in place shall be removed prior to painting and replaced upon completion of each space.

N. Heating and other equipment adjacent to walls shall be disconnected, using workmen skilled in appropriate trades, and moved to permit wall surfaces to be painted. Following completion of painting, expertly replace and reconnect.

O. Wash bare metal grilles and ducts indicated to be painted with solvent, wash with etching solution then prime and paint as scheduled.

P. Paint doors on tops, bottoms and edges same as door faces after fitting.

Q. Paint backside and inside faces of access panels, cover doors, frames, and removable or hinge covers to match exposed fronts.

R. Provide wet paint signs, barricades, warning tape and other devises to protect newly finished surfaces. Remove after Work is completed and paint has thoroughly dried.
3.4 Field Quality Control

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint rejected surfaces. Contractor at Owner’s discretion shall remove rejected materials from previously painted surfaces prior to re-preparing surfaces and re-applying approved paint coating systems.

3.5 Cleaning And Protection

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces. Clean and repair blemishes to all surfaces caused by Work of this Section.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Leave surfaces in a first class condition.

E. Runs, sags, misses, holidays, stains and other defects in painted surfaces, including inadequate coverage, mil thickness, inconsistent sheen or uniformity of appearance shall be satisfactorily repainted as necessary. If a portion of a larger area is deemed unsatisfactory, the entire area of surface shall be stripped, re-prepared and re-painted with approved paint systems, as Owner’s discretion.

3.6 Painting Schedule

A. The following paint schedule is based upon Frazee Paint Systems as a basis of design; other paint systems may be proposed on an “approved equal” basis. Architect is sole judge of acceptability of paint system.

B. Interior Paint Systems:

1. Gypsum Board Drywall:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>Acrylic Co-Polymer</td>
<td>1st Coat</td>
<td>066 Envirokote Primer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>018 Envirokote FL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>018 Envirokote FL</td>
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</table>

2. Concrete Masonry Unit:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>Acrylic Co-Polymer</td>
<td>1st Coat</td>
<td>262 Acrylic Block Filler</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>018 Envirokote FL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>018 Envirokote FL</td>
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</table>
### 3. Wood (Millwork) Natural or Manufactured Wood Product:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
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</thead>
<tbody>
<tr>
<td>Flat</td>
<td>Acrylic Co-Polymer</td>
<td>1st Coat</td>
<td>066 Envirokote Primer</td>
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<td></td>
<td></td>
<td>2nd Coat</td>
<td>018 Envirokote FL</td>
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<td></td>
<td></td>
<td>3rd Coat</td>
<td>018 Envirokote FL</td>
</tr>
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### 4. Non-Ferrous Metal: Galvanized:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Gloss</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>561 Acrylic Metal Primer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>126 Envirokote SG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>126 Envirokote SG</td>
</tr>
</tbody>
</table>

### 5. Ferrous Metal: Iron – Steel

<table>
<thead>
<tr>
<th>Finish</th>
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<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Gloss</td>
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<td>1st Coat</td>
<td>561 Acrylic Metal Primer</td>
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<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
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<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>126 Envirokote SG</td>
</tr>
</tbody>
</table>

### C. Exterior Paint Systems:

#### 1. Concrete Masonry Units:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
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<tbody>
<tr>
<td>Flat</td>
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<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>203 Duratec II</td>
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#### 2. Wood Smooth: Siding and Trim:

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<th>Finish</th>
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<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
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<td>100% Acrylic</td>
<td>1st Coat</td>
<td>168 Prime + Plus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>203 Duratec II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>203 Duratec II</td>
</tr>
</tbody>
</table>

#### 3. Wood: Rough Sawn Wood and Siding:

<table>
<thead>
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<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>203 Duratec II</td>
</tr>
<tr>
<td></td>
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<td>2nd Coat</td>
<td>203 Duratec II</td>
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<tr>
<td></td>
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<td>3rd Coat</td>
<td>203 Duratec II</td>
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</table>

#### 4. Non-Ferrous Metal: Galvanized:

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</tr>
</thead>
<tbody>
<tr>
<td>Semi-Gloss</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>561 Acrylic Metal Primer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>124 Mirro Glide SG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>124 Mirro Glide SG</td>
</tr>
</tbody>
</table>

END OF SECTION 09900
SECTIO N 09963 - Elastomeric Coatings

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 09900 “Painting.”

1.2 Performance Requirements

A. Provide elastomeric coatings that comply with performance requirements specified in MPI 113.

B. Provide elastomeric coating systems with the following properties as determined by test methods indicated:

1. Elongation: Not less than 100 percent with a tensile strength of 200 psi and not less than 88 percent recovery after 1 hour and 90 percent recovery after 24 hours when tested according to ASTM D 2370 using parameters established by MPI 113.
2. Accelerated Weathering: No cracking, peeling, blistering, chalking, or visual deterioration after 1000 hours when tested according to procedures in ASTM G 155.
3. Low-Temperature Flexibility: No crack formation when tested according to ASTM D 1737.
4. Moisture-Vapor Transmission: Not less than 2.0 perms according to ASTM D 1653.
5. Wind-Driven Rain Resistance: No water penetration according to procedures in FS TT-C-555.
6. Minimum Solids Content by Volume: Not less than 45 percent.

1.3 Submittals

A. Product Data: For each elastomeric coating system specified. Include crack fillers, block fillers, and primers.

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference the specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Technical information including label analysis and instructions for handling, storing, and applying each coating material.
3. Certification by elastomeric coating manufacturer that products supplied complies with local VOC regulations.

B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of actual substrate.

1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
3. Submit Samples on the following substrates for Architect's review of color and texture only:
a. Concrete, Exterior Plaster, and Stucco: 12-inch square Samples of actual substrate material for each color and texture.

b. Concrete Unit Masonry: 8 by 8 inch rectangular Samples of concrete masonry, with mortar joint in the center, for each color and texture.

C. Qualification Data: For Applicator.

D. Material Certificates: For each elastomeric coating material, signed by manufacturers.

1.4 Quality Assurance

A. Provide a firm or individual experienced in applying elastomeric coating systems similar in material and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance. Specification is written around NeoGard elastomeric coating as a campus standard. Product substitutions must be approved by Owner.

B. Source Limitations: Obtain crack fillers, block fillers, primers, and other undercoat materials from same manufacturer as finish coats.

C. Provide full-coat mockups for each type of coating on each substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample submittals.

1. Apply materials according to requirements for the completed Work. Provide required sheen, color, and texture on each surface.
2. Approved mockups will be used to evaluate coating systems.
4. Final approval of colors will be from mockups.

1.5 Delivery, Storage, and Handling

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Manufacturer's stock number and date of manufacture.
3. Contents by volume, for pigment and vehicle constituents.
4. Thinning instructions (if permitted).
5. Application instructions.
6. Color name and number.
7. Handling instructions and precautions.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue. Protect elastomeric coating materials from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.6 Project Conditions

A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 90 deg F, unless otherwise permitted by manufacturer's written instructions.
B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before starting or continuing coating operation. Remove all mold, algae and scale from surfaces to receive elastomeric coating.

C. Protection:
1. The overspray from coating material can carry considerable distances and care should be taken to do the following:
   a. Post warning signs a minimum of 100 feet from the work area.
   b. Cover all intake vents near the work area.
   c. Set up wind breaks when needed.
   d. Minimize or exclude all personnel not directly involved with coating application.
   e. Provide adequate ventilation.

2. Protect plants, vegetation and animals which might be affected by coating. Use drop cloths or masking as required.

D. Prior to applying finishes such as stains, paints, and elastomeric coatings, be sure that shrubbery is pulled back from face of building so that all surfaces are exposed for application of finishes.

1.7 Warranty
A. Elastomeric Coating Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace elastomeric coatings that fail within specified warranty period. Failures include, but are not limited to, water penetration through the coating.

B. Warranty Period for Elastomeric Coatings: 10 years from date of Substantial Completion.

1.8 Extra Materials
A. Furnish extra elastomeric coating materials from same production run as materials applied and in quantities described below. Package materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to Owner. Quantity: Furnish Owner with one extra case of each color and finish of elastomeric coating materials applied.

PART 2 - Products

2.1 Manufacturers
A. Subject to requirements, provide products by the following:
   1. NeoGard

2.2 Elastomeric Coating Materials, General
A. Provide crack fillers, block fillers, primers, elastomeric finish-coat materials, and related materials that are compatible with one another and with substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Provide manufacturer's best-quality elastomeric coating materials that are factory formulated, comply with requirements in FS TT-C-555, and are recommended by manufacturer for the application indicated. Material containers not displaying manufacturer's product identification are not acceptable.
C. Colors and Textures: As selected by Architect from manufacturer’s full range.

2.3 Sealant
   A. NeoGard 70991.

2.4 Patching Compound
   A. NeoGard 7032 NeoFlex patching compound.

2.5 Primers
   A. Acrylic primer as recommended by manufacturer for substrate and application.

2.6 Elastomeric Finish-Coat Materials
   A. Smooth Elastomeric Finish: NeoGard 7100 Series Elastomeric Acrylic Coating.

PART 3 - Execution

3.1 Examination
   A. Examine substrates and conditions, with Manufacturer Applicator present, for compliance with requirements for coating application. Comply with procedures specified in PDCA P4.

   1. Proceed with coating application only after unsatisfactory conditions have been corrected and surfaces are thoroughly dry.
   2. Start of coating application will be construed as Contractor’s acceptance of surface conditions.

   B. Review other Sections in which primers are provided to ensure compatibility of total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers. Notify Architect in writing about anticipated problems when using coatings specified over substrates primed by others.

3.2 Preparation
   A. Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating. After completing coating operations, reinstall items removed, using workers skilled in trades involved.

   B. Before applying coatings or other surface treatments, clean substrates of substances that could impair bond of coating systems. Remove oil and grease before cleaning. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.

   C. Clean and prepare surfaces to be coated according to manufacturer's written instructions for particular substrate conditions and as specified.

      1. Provide barrier coats over incompatible primers or remove and reprime.
      2. Prepare brick, concrete, concrete unit masonry, stucco, and similar surfaces to receive elastomeric coatings. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar impediments to good adhesion by water blasting followed by a clear water rinse.
a. Remove mildew and neutralize surfaces according to manufacturer's written instructions before patching materials are applied.

b. Roughen as required to remove glaze. Use abrasive blast-cleaning methods if recommended by coating manufacturer.

c. If hardeners or sealers have been used to improve concrete curing, use mechanical methods for surface preparation.

d. Determine alkalinity and moisture content of surfaces to be coated by performing appropriate tests. If surfaces are sufficiently alkaline to cause finish paint to blister and burn, correct this condition before application. Do not apply coatings over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.

3. Fill cracks according to manufacturer's written instructions before coating surfaces. Remove dust and dirt from around cracks. Remove mildew by sterilizing before filling. Apply manufacturer's recommended primer to cracks before patching. If shrinkage occurs after applying crack filler, apply additional filler material to cracks before initial application of elastomeric coatings.

a. Cracks up to 1/16 inch: Clean surface around cracks. Apply crack filler primer penetrating cracks as deeply as possible, overflowing crack 2 inches on each side. When crack filler primer is dry, apply manufacturer's recommended sealant, forced well into cracks using a brush, putty knife, or trowel. Smooth edges of primed area around cracks. Allow for sealant shrinkage when applying.

b. Cracks up to 3/8 inch: Open cracks to ¼ to 3/8 inch wide and 1/8 inch deep. Clean cracks and surrounding area removing dust, dirt, and other impurities. Apply crack filler primer recommended by manufacturer with a brush to obtain uniform coverage and spread approximately 2 inches on each side of cracks. Fill cracks with manufacturer's recommended crack filler applied with a putty knife or trowel, and allow for shrinkage. If excessive shrinkage occurs, reapply crack filler.

D. Mask all control joints.

E. Mix and prepare materials according to coating manufacturer's written instructions.

1. Maintain containers used in mixing and applying elastomeric coatings in a clean condition, free of foreign materials and residue.

2. Stir materials before application to produce a mixture of uniform density. Stir as required during application. If surface film forms, do not stir film into material. If necessary, remove film and strain coating material before using.

3. Do not thin material unless specifically required by manufacturer's written instructions.

F. Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match color of finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 Application

A. Apply elastomeric coatings according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Colors, surface treatments, and finishes are indicated in coating schedule.

2. Do not paint over conditions detrimental to formation of a durable coating film, such as dirt, rust, scale, grease, moisture, and scuffed surfaces.

3. Provide finish coats compatible with primers used.
B. Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

C. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Number of coats and film thickness required are same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
2. If undercoats or other conditions show through final coat, apply additional coats until coating film is of uniform finish, color, and appearance. Ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat does not cause undercoat to lift or lose adhesion.

D. Apply elastomeric coatings by spray according to manufacturer's written instructions. Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

E. Apply each material no thinner than manufacturer’s recommended spreading rate to achieve dry film thickness as recommended by manufacturer. For spray application, apply each coat to provide equivalent hiding of brush-applied coats. Do not double back with spray equipment, building up film thickness of two coats in one pass.

F. Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

G. Apply a primer to material being coated before applying finish coats.

H. Match approved samples for color, texture, and coverage. Remove, refinish, or recoat work not complying with specified requirements.

3.4 Field Quality Control

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during coating operations:

1. Owner will engage a qualified independent testing agency to sample coating material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will perform appropriate tests for the following characteristics as required by Owner:
   a. Elongation.
   b. Accelerated weathering.
   c. Low-temperature flexibility.
   d. Moisture-vapor transmission.
   e. Wind-driven rain resistance.
   f. Minimum solids content by volume.
3. Owner may direct Contractor to stop coating application if test results show materials being used do not comply with requirements. Contractor shall remove noncomplying materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. If necessary, Contractor may be required to remove rejected materials from previously coated surfaces if, on recoating with specified materials, the two coatings are not compatible.
3.5 Cleaning

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site. After completing coating work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods, being careful not to scratch or damage adjacent finished surfaces.

3.6 Protection

A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating. Leave in an undamaged condition.

B. Provide "Wet Paint" signs to protect newly coated finishes. Remove temporary protective wrappings provided by others to protect their work after completing coating operations. After construction activities of other trades are complete, touch up and restore damaged or defaced coated surfaces. Comply with procedures specified in PDCA P1.

END OF SECTION 09963
PROJECT MANUAL
for:

Saddleback College Fine Arts Complex
New Exterior Finishes and Color Selections Project

South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA  92692-3635

Prepared By:

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End of Table of Contents
SECTION 01100 - Summary

PART 1 - General

1.1 Related Documents

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

1.2 Summary

A. Project Name: Saddleback College Fine Arts Complex New Exterior Finishes and Color Selections.

B. Project Location: 28000 Marguerite Parkway, Mission Viejo, CA 92692.

C. Owner: South Orange County Community College District.

D. Owner's Representative: John Ozurovich and Walter Rice.


F. The Work consists of the following refinishing exterior surfaces of existing Fine Arts Complex. Finishes include painting of metal, wood, concrete and masonry surfaces; staining of concrete masonry units; elastomeric plaster finish coating.

G. Work will be provided under a single prime contract. Owner has contracted for certain structural repair work under a separate contract. Cooperate and coordinate fully with separate contractors so work under those contracts can proceed without delay and will be fully integrated with Work of this Contract.

H. Provide all labor, materials, equipment, freight, taxes, services and administration to complete the Work.

I. The Bid Drawings and Specifications indicate the scope of the Work in terms of the design concept, the dimensions of the Work, and the elements of construction. The Bid Drawings and Specifications do not necessarily indicate or describe all Work required for the full performance and completion of the Work. Contractor shall be solely responsible for the inclusion of adequate amounts in the bid price to include all items, regardless of whether items are indicated, described, implied, or necessary in order to produce a completed Project. Decisions by the Owner’s Representative as to the items of Work included within the scope of these Drawings and Contract Documents shall be final and binding on the Contractor.

1.3 Use of Premises

A. Contractor shall have use of premises for construction operations, including use of Project site, during construction period. Contractor’s use of premises is limited by Owner's right to perform work or to retain other contractors on portions of Project and ongoing classes and faculty uses. Perform Work so as not to interfere with Owner’s day to day operations. Limit construction operations to the following days and times:

1. Monday through Friday. 7:00 a.m. to 5:00 p.m.

B. Smoking is not permitted within Building or Site, or within 25 feet of entrances, windows or air intakes.
C. Prior to pre-construction meeting, submit written/graphic construction plan describing intended use of construction site. Address the following items:

1. Daily work hours of construction personnel.
2. Parking area for construction personnel and visitors.
3. Staging area.
4. Delivery points.
5. Construction traffic patterns.
6. Construction office location.
7. Temporary toilet location.
9. Maximum number of workers expected in a single day.
10. Temporary utility connection location(s)
12. Parking area for Owner, Architect and site visitors.
13. Trash collection points.
14. Recycled material sorting areas.

D. Review plan at pre-construction meeting and revise per comments received at meeting.

E. Keep driveways and entrances serving premises clear and available to Owner, Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

1. Schedule deliveries to minimize use of driveways and entrances.
2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

F. Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

G. Contractor is aware that adjacent buildings are occupied. Contractor must conduct operations to ensure least inconvenience to public and occupied areas in adjacent buildings. Indicate adjacent building occupancy dates in construction schedule and coordinate construction activity with Owner.

1. Minimum noise impact on adjacent existing occupancies.
2. Minimum dust and debris impact on adjacent existing buildings and occupancies.
3. Maintain and provide pedestrian barricades and protection.
4. Maintain and protect exits from occupied areas at all times.

1.4 Owner's Occupancy Requirements

A. Owner reserves the right to place and install equipment in completed areas of Work, before Substantial Completion, provided such installation does not interfere with completion of the Work. Such placement of equipment shall not constitute acceptance of the Work, or substantial completion.

1.5 Specification Conventions

A. The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Language used in the Specifications and other Contract Documents is abbreviated. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications and Drawings. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01100
SECTION 01250 - Contract Modification Procedures

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01320 “Construction Progress Documentation.”

1.2 Proposal Requests

A. Based upon Owner request for changes in scope, RFI responses or other forms of scope change, Architect will issue a detailed description, in the form of a Field Change Directive (FCD) that may require adjustment to the Contract Sum or Time. If necessary, the directive will include revised Drawings and Specifications.

   1. Proposed Changes issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
   2. Within 5 calendar days after receipt of proposed changes, submit a quotation estimating adjustments to the Contract Sum and the Contract Time necessary to execute the change.

      a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
      b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
      c. Include costs of labor and supervision directly attributable to the change.
      d. Include a proposed Contractor's Construction Schedule that indicates the effect, if any, of the change to the construction schedule. Including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

1.3 Change Order Procedures

A. On Owner's approval of a Proposal Request, issue a Change Order for signatures of Owner, Contractor and Architect on form provided by Owner.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01250
SECTION 01290 - Payment Procedures

PART 1 - General

1.1 Related Documents

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

1.2 Schedule of Values

A. Submit Schedule of Values no later than 10 days after receipt of Notice to Proceed.

B. Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Include the following project identification on the Schedule of Values:

1. Project name and location.
2. Name of Architect.
3. Architect’s project number.
4. Contractor’s name and address.
5. Date of submittal.
6. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
7. Update and submit the Schedule of Values with each Application for Payment.
8. Arrange the Schedule of Values in tabular format with separate columns to indicate the following:
   a. Related specification sections.
   b. Description of Work.
   c. Name of Sub-Contractor.
   d. Approved change orders that affect value.
   e. Dollar value.
   f. Total contract sum of base contract.
   g. Total Contract sum with total of approved change orders added it.
10. Differentiate between items stored on site and items stored offsite. Include evidence of insured or bonded warehousing.

1.3 Applications For Payment

A. Make each Application for Payment consistent with previous applications and payments as certified by Architect and paid for by Owner. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment may involve additional requirements.

B. The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Submit Application for Payment to Architect on a day of each month agreed to by Owner, Contractor and Architect.

D. Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
E. Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Match data on the current Schedule of Values and current Construction Schedule.
2. Include amounts of Approved Change Orders issued before last day of construction period covered by application.

F. Submit 4 signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt. All copies shall include waivers of lien and other required attachments. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. With each Application for Payment, submit waivers and releases from every entity who is lawfully entitled to file a lien arising out of the Contract and related to the Work covered by the payment.

1. Submit conditional waiver and release upon progress payment on each item for amount requested in current application, after deduction for retainage, on each item.
2. Submit an unconditional waiver and release on each item for the amount paid in the previous application, prior to deduction for retainage.
3. When an application shows completion of an item, submit conditional waiver and release upon final payment.
4. Owner reserves the right to designate which entities involved in the Work must submit waivers.
5. Submit waivers of lien on forms, executed in a manner acceptable to Owner.
6. Within 10 (ten) days of receipt of payment that includes final payment on an item of Work, submit an unconditional waiver and release upon final payment for the item.

H. Administrative actions and submittals that must precede first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Construction Schedule.
5. List of Contractor's staff assignments.
8. Initial progress report.
10. Certificates of insurance and insurance policies.
11. List of subcontracts.

I. After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. Reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
10. Warranty and Maintenance information.
11. Record documents.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01290
SECTION 01310 - Project Management and Coordination

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01700 “Execution Requirements.”

1.2 Definitions

A. RFI: Request for information prepared by Contractor seeking interpretation or clarification of the Contract Documents.

1.3 Coordination

A. Coordinate all construction operations to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations that depend on each other for proper installation, connection, and operation. Establish and maintain clear communication between all trades.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

5. Provide and maintain sufficient crew to manage, supervise, execute and complete the Work by the required completion date.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

C. Coordinate scheduling and timing of required administrative procedures with construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Time progress meetings to coincide with review of payment applications. Such administrative activities include, but are not limited to, the following:

1. Preparation of Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.
D. Coordinate and check layout and installation of Work between all trades. Coordinate and sequence Work in a logical manner to minimize impact to Work in place.

E. Require all subcontractors to read and comply with all applicable requirements of the contract documents.

F. Carefully review all contract documents and promptly issue an RFI in writing noting errors, inconsistencies or omissions found, prior to starting any Work. Where conflicts and inconsistencies exist in the contract documents provide the more expensive option at no additional cost to Owner.

G. Field verify all dimensions needed for fabricated components.

H. Coordinate construction activities so that operations are carried out with consideration for efficient use of power, water and material.

I. Before proceeding with any Work, submit a list of names for the following general contractor staff. List addresses, phone numbers, for both daytime contact and after hours emergency contact, email addresses and fax numbers:

1. Principal in charge.
2. Project manager(s).
3. Project superintendent(s).
4. Key administrative staff.

1.4 Project Meetings

A. Schedule and conduct meetings and conferences at Project site on a regular basis to coordinate the Work. Prepare agenda and lead the meeting. Issue meeting minutes to all concerned parties.

1. Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Distribute the agenda to all invited attendees.
3. Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 2 days of the meeting.

B. Schedule a preconstruction meeting before starting construction, at a time convenient to Owner and Architect, but no later than 10 working days after the date of the Notice to Proceed. Hold the meeting at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Discuss items of significance that could affect progress, including the following:

   a. Construction schedule.
   b. Critical work sequencing and long-lead items.
   c. Designation of key personnel and their duties.
   d. Procedures for processing field decisions and Change Orders.
   e. Procedures for RFIs.
   f. Procedures for Field Change Directives.
g. Procedures for testing and inspecting.
h. Procedures for processing Applications for Payment.
i. Distribution of the Contract Documents.
j. Submittal procedures.
k. LEED requirements.
l. Preparation of Record Documents.
m. Use of the premises.
n. Work restrictions.
o. Owner's occupancy requirements, use of facilities and protection of occupants.
p. Responsibility for temporary facilities and controls.
q. Parking availability.
r. Office, work, and storage areas.
s. Equipment deliveries and priorities.
t. First aid.
u. Security.
w. Progress cleaning.
x. Working hours.
y. Safety program.
z. Construction waste management and recycling.

3. Record and distribute meeting minutes.

C. Conduct a preinstallation meeting at Project site for each construction activity required to have a pre-installation meeting.

1. Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner of scheduled meeting dates.

2. Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

   b. Options.
   c. Related RFIs.
   d. Related Change Orders.
   e. Lead time.
   f. Deliveries.
   g. Submittals.
   h. Review of mockups.
   i. Possible conflicts.
   j. Compatibility problems.
   k. Time schedules.
   l. Weather limitations.
   m. Manufacturer's written recommendations.
   n. Warranty requirements.
   o. Compatibility of materials.
   p. Acceptability of substrates.
   q. Temporary facilities and controls.
   r. Space and access limitations.
   s. Regulations of authorities having jurisdiction.
   t. Testing and inspecting requirements.
   u. Installation procedures.
   v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Distribute minutes of the meeting to each party present and to all other concerned parties.
5. Do not proceed with installation if meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Conduct regular progress meetings at intervals agreed to with client. Coordinate dates of meetings with preparation of payment requests.

1. In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Review and correct minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time. Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Work hours.
8) Quality and work standards.
9) Status of correction of deficient items.
10) Field observations.
11) RFIs.
12) Status of proposal requests.
13) Pending changes.
14) Status of Change Orders.
15) Pending claims and disputes.
16) Documentation of information for payment requests.

3. Record and distribute minutes of the meeting to each party present and to all other concerned parties.

E. The Owner’s Representative may call a special meeting at any time during the course of the project. Special project meetings shall include representatives of any members of the project team requested in order to discuss problems and/or solutions that are common to the project.
1.5 Requests For Interpretation (RFIs)

A. Immediately on discovery of the need for interpretation of the Contract Documents, prepare and submit an RFI in the approved form.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Work.
3. Review all RFIs with contract documents prior to submitting RFI to Architect to assure that necessary information is not in the contract documents. No time or schedule extension will be approved for RFIs when information is clearly shown in the Contract Documents.

B. Include a detailed, legible description of item needing interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.
9. Contractor's suggested solution. If Contractor's solution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI. RFIs submitted without solution will be returned unreviewed, and no extension of time will be approved.
10. Contractor's signature.
11. Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
12. Enumerate each page and attachments of RFI with sequential number. Indicate total number of pages on RFI form.

C. Architect will review each RFI and determine action required. RFIs received after 3:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:

   a. Approval of Means and Methods.
   b. Requests for approval of submittals.
   c. Requests for approval of substitution of products or alternate methods.
   d. Requests for coordination information already indicated in the Contract Documents.
   e. Requests for adjustments in the Contract Time or the Contract Sum.
   f. Requests for interpretation of Architect's actions on submittals.
   g. Incomplete RFIs or RFIs with numerous errors.
   h. RFIs which do not propose a solution.

2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.

   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 working days of receipt of the RFI response.
D. Review response and notify Architect within one day if Contractor disagrees with response. On receipt of Architect's action, after acceptance of response, immediately update the RFI log and distribute the RFI response to affected parties.

E. Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Include the following:

1. Project name.
2. Name of Contractor.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01310
SECTION 01320 - Construction Progress Documentation

PART 1 - General

1.1 Related Documents
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.
B. Related Sections include:
   1. Section 01290 “Payment Procedures.”
   2. Section 01322 “Photographic Documentation.”

1.2 Definitions
A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
B. CPM: Critical Path Method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
D. Float: The measure of leeway in starting and completing an activity. Float time belongs to Owner.
E. Major Area: A story of construction, a separate building, or a similar significant construction element.
F. Milestone: A key or critical point in time for reference or measurement.

1.3 Submittals
A. Submittal Schedule: Submit 5 copies of submittal schedule.
B. Construction Schedule: Submit 5 opaque copies of initial schedule, large enough to show entire schedule for entire construction period. Submit an electronic copy of schedule in PDF format.
C. Daily Construction Reports: Submit 2 copies at weekly intervals.
D. Field Condition Reports: Submit 2 copies at time of discovery of differing conditions.

1.4 Coordination
A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
B. Coordinate Construction Schedule with the Schedule of Values, Submittals Schedule and payment requests.
PART 2 - Products

2.1 Submittals Schedule

A. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates. Coordinate Submittal Schedule with Construction Schedule. Submit concurrently with submittal of Construction Schedule. Include the following:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Critical path date for Architect's final release or approval.

2.2 Construction Schedule

A. Extend schedule from date established for Notice to Proceed to date of Final Completion. Show the following dates and portions of time:

1. Date of Notice to Proceed.
2. Start date of actual construction activity.
3. Final completion date.
4. Date of Substantial Completion.
5. Start and finish dates for each activity.
6. Critical path.
7. Float time.
8. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Treat each story or separate area as a separate numbered activity for each principal element of the Work.

1. Define and arrange activities so no activity is longer than 14 days.
2. Include procurement time for long lead items requiring more than 10 (ten) days procurement time, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery. Include procurement time within Activity time.
3. Include review and resubmittal times for submittals. Coordinate submittal review times in Construction Schedule with Submittals Schedule.
4. Include time necessary for startup and testing.
5. Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion. Show substantial completion date.

C. Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Arrange list of activities on schedule by phase.
2. Include a separate activity for each portion of the Work performed by Owner.
3. Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Partial occupancy before Substantial Completion.
e. Use of premises restrictions.
g. Seasonal variations.
h. Environmental control.
i. Required inspections.

4. Indicate important stages of construction for each major portion of the Work.
5. Include critical milestone dates such as Inspections and Completion dates.

D. For each proposed contract modification that affects contract time, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule. Submit analysis with proposed change.

E. Prepare Construction Schedule using a computerized, time-scaled CPM network analysis diagram for the Work. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner/Architect approval of the schedule.

1. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
2. Use "one workday" as the unit of time. Include nonworking days and holidays in the schedule.
3. Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities.
4. Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

F. Prepare Schedule using a computerized program that has been specifically developed to products and manage CPM bar chart type schedules.

2.3 Reports

A. Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. Equipment at Project site.
3. Material deliveries.
4. High and low temperatures and general weather conditions.
5. Accidents.
7. Meter readings and similar recordings.
8. Orders and requests of authorities having jurisdiction.
9. Services connected and disconnected.
10. Equipment or system tests and startups.
11. Number of workers on site.

B. Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions and photographs, together with recommendations.

C. When an event of an unusual and significant nature occurs at the project site, whether or not it is directly related to the Work, prepare and submit a report. List chain of events, individuals involved, photographs and written description.
PART 3 - Execution

3.1 Construction Schedule

A. Issue 3-week look ahead schedule at each regularly schedule progress meeting. At monthly intervals, update schedule to reflect actual construction progress and activities. Issue updated schedule with each Application for Payment.

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

   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01320
SECTION 01322 - Photographic Documentation

PART 1 - General

1.1 Related Documents

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

1.2 Submittals

A. Submit a complete set of digital image electronic files at completion of project. Identify electronic media with date photographs were taken at time of Substantial Completion. Submit images that have same aspect ratio as the sensor, uncropped.

B. Identify each set of images on transmittal with the following information:

   1. Name of Project.
   2. Name of Contractor.
   3. Date stamped by camera.
   4. Unique sequential identifier.

PART 2 - Products

2.1 Photographic Media

A. Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, 150 DPI minimum.

PART 3 - Execution

3.1 Construction Photographs

A. Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

B. Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

   1. Include date and time in filename for each image.
   2. Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.

C. Before commencement of the work, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.

   1. Flag construction limits before taking construction photographs.
   2. Take photographs to show existing conditions adjacent to property before starting the Work.
   3. Take photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
   4. Take additional photographs to record settlement or cracking of adjacent structures, pavements, and improvements.
D. Take periodic construction photographs one day before the cutoff date associated with each Application for Payment. Select vantage points to show status of construction, progress and adjacent properties since last photographs were taken.

E. Take digital color photographs of entire scope of Work at time of Substantial Completion. Submit photographs to Owner and Architect with transmittal.

F. Take color digital photographs of entire scope of Work at time of Completion. Submit photographs to Owner and Architect with each transmittal.

END OF SECTION 01322
SECTION 01330 - Submittal Procedures

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01320 "Construction Progress Documentation."
   2. Section 01400 "Quality Requirements."
   3. Section 01770 "Closeout Procedures."
   4. Section 01781 "Project Record Documents."
   5. Section 01782 “Operation and Maintenance Data.”

1.2 Definitions

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

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 Submittal Procedures

A. All submittals shall be received by the Architect within 15 calendar days from the date of the Notice to Proceed.

B. Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
   3. Do not use submittals to obtain approval of substitutions and alternate methods.
   4. Do not use submittals to obtain approval of means and methods.

C. Allow enough time for submittal review by Architect and governing authority, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
   1. Allow for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
   2. If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. Allow for review of each resubmittal.

D. Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 x 8 inches on label or beside title block to record action taken by Architect.
3. Include the following information on label for processing and recording action taken:
   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Submittal number or other unique identifier, including revision identifier. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).

E. Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals. If submittals contain comparable products equal to or exceeding specified basis of design products provide side-by-side comparison of all attributes between proposed product and specified product. Include side-by-side comparison within submittal, submittals for comparable products without side-by-side comparisons will be rejected.

F. Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using transmittal form provided by Owner. Do not group separate submittals under a single transmittal and single submittal number. Rejection of one portion of a submittal will be a rejection of the entire submittal. Architect will return submittals, without review, received from sources other than Contractor. Use transmittal form supplied by Architect.

G. Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.

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

I. Use only final submittals indicating Architect’s ‘acceptance’ or ‘furnish as corrected’ without a requested resubmittal.

1.4 Contractor's Use Of Architect's Cad Files

A. Contractor is not allowed to use Architect’s CAD files, or printed copies of Architect’s drawings, for use in preparing submittals.

PART 2 - Products

2.1 Action Submittals

A. Prepare and submit Action Submittals required by individual Specification Sections.
B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Provide adequate information in each submittal so that reviews may be conducted efficiently.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Manufacturer's catalog cuts.
   e. Wiring diagrams showing factory-installed wiring.
   f. Printed performance curves.
   g. Operational range diagrams.
   h. Compliance with specified referenced standards.
   i. Testing by recognized testing agency.

4. Submit six (6) copies of Product Data, unless otherwise indicated. Architect will return four (4) copies. Retain one (1) returned copy as a Project Record Document. Provide one (1) returned copy to Owner; provide one (1) returned copy to IOR.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shopwork manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Notation of coordination requirements.
   j. Notation of dimensions established by field measurement.
   k. Relationship to adjoining construction clearly indicated.
   l. Seal and signature of professional engineer if specified.
   m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Submit six (6) opaque (bond) copies of each submittal. Architect will return four (4) copies. Retain one (1) returned copy as a Project Record Document. Provide one (1) returned copy to Owner; provide one (1) returned copy to IOR.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.
3. Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Submit six (6) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return four (4) submittals with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected.
   a. Submit six (6) sets of verification Samples. Architect will return four (4).

2.2 Informational Submittals
A. Prepare and submit Informational Submittals required by Specification Sections.
   1. Submit six (6) copies of each submittal.
   2. Provide a notarized statement that includes signature of entity responsible for preparing certifications. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
B. Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
C. Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
D. Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
E. Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
F. Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
G. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

H. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

I. Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

J. Prepare written or published information that documents manufacturer's written recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

K. Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
   2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
   3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

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

M. Submit Material Safety Data Sheets (MSDSs) directly to Owner; do not submit to Architect. Architect will not review submittals that include MSDSs and will return them unreviewed for submittal to Owner.

PART 3 - Execution

3.1 Contractor's Review

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark and wet sign approval stamp before submitting to Architect. Place approval stamp on body of submittal, do not place approval stamp on binding cover.

B. Stamp each submittal with approval stamp required by Owner and illustrated in general conditions. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents. Contractor to sign stamp.

3.2 Architect's Action

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

B. Architect will review each action submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately.
to indicate action necessary. Submittals will only be reviewed for conformance with design intent and information in the Contract Documents.

C. Architect will review each informational submittal and will return it without action.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and will be discarded.

F. All reviewed submittals will be returned to Contractor.

G. After two submissions, without acceptance, of a particular submittal, Contractor will bear expense for additional Architect review of that submittal, through deductive change order.

H. Include all costs for preparing and handling submittals including costs associated with printing and distribution of submittals to a subcontractor.

END OF SECTION 01330
SECTION 01400 - Quality Requirements

PART 1 - General

1.1 Related Documents

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

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.

2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. See Divisions 2 through 16 Sections for specific test and inspection requirements.

1.2 Definitions

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Testing Agency: A professionally licensed entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

F. ‘Minimum experience’ means having successfully completed a minimum of [five (5)] years’ experience on projects similar in size and scope of the type of Work required for this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

G. IOR: Inspector of Record.
H. DSA: California Division of State Architect.

I. OAR: Owner’s Authorized Representative


1.3 Conflicting Requirements

A. If compliance with two or more standards or code requirements is specified and the standards or code requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement at no additional cost to Owner. When uncertainties exist and requirements are different, but apparently equal, submit RFI’s to Architect for a decision before proceeding.

B. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. When uncertainties exist submit RFI to Architect for a decision before proceeding.

C. When conflicts exist within drawings provide Architect with RFI for clarification and provide more expensive option at no additional cost to Owner.

D. When conflicts exist within specifications provide Architect with RFI for clarification and more expensive option at no additional cost to Owner.

E. When conflicts exist between drawings and specifications provide Architect with RFI for clarification and more expensive option at no additional cost to Owner.

F. If conflicts exist between code requirements, authorities having jurisdiction and contract documents provide RFI to Architect for clarification and provide more expensive option at no additional cost to Owner.

1.4 Submittals

A. For testing agencies retained, submit proof of qualification to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
8. Complete test or inspection data.
9. Test and inspection results with interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Name and signature of laboratory inspector.
12. Recommendations on retesting and reinspecting.
1.5 Quality Assurance

A. Provide firms and individuals experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

B. Provide firms and individuals experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Provide firms and individuals experienced in producing and fabricating products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Provide the services of professional engineers who are legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for design and installation of the systems, assemblies, or products that are similar to those indicated for this Project in material, design, and extent.

E. Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated. Requirement for specialists shall not supersede building codes and regulations governing the Work.

F. When required, provide an authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

G. Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size as directed by Architect.
2. Notify Architect 7 (seven) days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed.

H. Any additional Work beyond that specified or illustrated, or any modifications thereto, that are necessary for the furnishing of required warranty shall be provided by the Contractor without additional cost to the Owner.

1.6 Quality Control

A. Owner will select an independent testing agency to conduct tests, sampling, and testing of materials. Selection of material to be tested shall be by the agency or the IOR and not by Contractor. Owner will
engage a qualified testing agency and special inspectors to conduct special tests and inspections required by authorities having jurisdiction. Special inspections are indicated in the Contract Documents.

1. Procedural and acceptance criteria shall be as set forth in Section 4-335 of the California Building Standards Administrative Code and as set forth in CBC Section 1703A.1.

B. Owner will directly reimburse testing agency for all costs for all Building or Fire Official required tests and inspections, but may be reimbursed by Contractor for such costs as noted in related sections of the Contract Documents.

1. Contractor will reimburse Owner or directly reimburse testing agency for all costs for retesting required by failed tests as set forth in Sections 4-333(c) and 4-335(c) of the California Building Standards Administrative Code.

C. Independent testing agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

D. Independent testing agency shall not perform any duties of Contractor.

E. Contractor shall notify the Owner a sufficient time in advance of the manufacture of material to be supplied by Contractor as required under the Contract Documents, which must by terms of the Contract Documents be tested, in order that the Owner may arrange for the testing of same at the source of supply.

F. Any material shipped by Contractor from source of supply prior to having satisfactorily passed required testing and inspection shall not be incorporated into the Work.

G. Contractor shall provide an insulated curing box with capacity for not less than [twenty (20)] concrete cylinders and relocate curing box and cylinders as rapidly as required in order to provide for progress of the Work.

H. Where indicated, engage a factory-authorized service representative to inspect substrates, field-assembled components and equipment installation, including service connections. Report results in writing to Owner and Architect.

I. Regardless of whether original tests or inspections were Contractor’s responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with Contract Documents.

J. Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

K. Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting. Schedule time for tests, inspections, obtaining samples, and similar activities.
PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Testing and Inspection Log

A. Maintain a testing and inspection log at Project site. Post changes and modifications as they occur. Provide access to log by Architect, IOR and Owner.

3.2 Repair And Protection

A. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

2. Comply with requirements of Section 01731 "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

3.3 Test Reports

A. One copy of each test report shall be forwarded directly to Building and Fire Official by the testing agency. Additional copies of each test report shall be forwarded directly to Owner, Architect, Contractor, project inspector, construction manager, and structural engineer by the testing agency. Such reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reports. Reports shall show that the material or materials were sampled and tested in accordance with the requirements of CBC, Title 24, Parts 1 and 2, and with the approved Contract Documents. Test reports shall show the specified design strength. Test reports shall also state whether or not material or materials tested comply with the specified requirements as set forth in Section 4-335(d) of the California Building Standards Administrative Code.

3.4 Verification of Test Reports

A. Testing agency shall submit to DSA a verified report, in duplicate, covering tests that were performed by that agency during the progress of the Work. Additional copies of each test report shall be forwarded directly to Owner, Architect, Contractor, project inspector, construction manager, and structural engineer by the testing agency. Such report shall be furnished each time construction on the Work is suspended, covering tests up to that time, and prior to Final Completion of the Work, covering all tests as set forth in Sections 4-335(e) and 4-336 of the California Building Standards Administrative Code.

3.5 Site Visitations

A. Owner, Architect and IOR shall have access to the site at all times, to all parts of the Work and to all shops/warehouses where materials or Work is in preparation, fabrication or storage.

B. Owner, Architect and IOR shall have the right to reject materials and workmanship deemed defective Work, and to require their correction. Rejected work and materials shall be corrected in a satisfactory manner without charge to Owner. If Contractor does not correct rejected Work within a reasonable time,
fixed by written notice and in accordance with the terms and conditions of the Contract Documents, Owner may correct rejected Work and recover design, engineering, repair, replacement and administrative costs through deductive change order.

C. The Owner at any time prior to Final Completion reserves the right to make an examination of Work already completed by removing work in place. The Contractor shall, on request, promptly furnish all necessary facilities, labor, and materials. If Work is found to be defective in any respect due to the fault of the Contractor all expenses of such examinations and of satisfactory reconstruction will be at the Contractor’s expense. If Work is found to meet the requirements of Contract Documents, the additional cost of examination and replacement shall be paid for by Owner.

D. Contractor is responsible for compliance with all applicable local, state, and federal codes, regulations, ordinances, restrictions, and requirements.

3.6 Inspector of Record

A. Project Inspector of Record (IOR), employed by the Owner in accordance with requirements of California Code of Regulations, Title 24, will be assigned to the Work.

1. Project inspector shall be approved by Architect, Structural Engineer, and DSA.
2. As set forth in Section 4-333(b) of the California Building Standards Administrative Code.
3. Duties of project inspector are specifically defined in Section 4-342 of the California Building Standards Administrative Code.

B. The Work shall be subject to the personal continuous observation of the IOR. He shall have free access to any or all parts of the Work at any time.

C. Inspection of Work shall not relieve Contractor from obligation to fulfill all of the terms and conditions of the Contract Documents.

D. Contractor shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

E. The Contractor shall provide a temporary office for the IOR to be located as directed by the IOR and to be maintained until removal is authorized by the Owner. This office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. The door shall have a lock. A table satisfactory for the study of plans and two chairs shall be provided by the Contractor. The Contractor shall provide and pay for adequate electric lights, private local telephone service with a loud exterior bell, internet DSL service, fax machine with active line, and adequate heat and cooling for this field office until the completion of the Contract.

END OF SECTION 01400
SECTION 01420 - References

PART 1 - General

1.1 Related Documents

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

1.2 Definitions

A. Basic Contract definitions are included in the Conditions of the Contract.

B. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

C. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

D. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

E. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

F. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

G. "Provide": Furnish and install, complete and ready for the intended use.

H. "Project Site": Space available for performing construction activities. The extent of Project site may or may not be identical with the description of the land on which Project is to be built.

1.3 Industry Standards

A. Unless the Contract Documents include more stringent requirements, applicable reference standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference. In case of conflict between performance standard or regulation and contract documents provide more stringent requirement at no additional cost to Owner.

B. Comply with standards in effect as of date of the Contract Documents.

C. Comply with all conditions of approval from governing authorities.

D. In case of conflict between reference standards or reference standards and governing authorities, conform to the most stringent requirements, if such conformance is legal, at no additional cost to Owner.
E. The contractual relationship and responsibilities of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

F. Each entity engaged in construction on Project shall be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source. Maintain a copy of all applicable regulations and reference standards at the project site.

G. Where abbreviations and acronyms are used in Contract Documents, they shall mean the recognized name of the entities in the following list. This list is not inclusive of all organizations.

ACI ACI International (American Concrete Institute)
ADA Americans with Disabilities Act
AISC American Institute of Steel Construction
AITC American Institute of Timber Construction
ANSI American National Standards Institute
APA APA - The Engineered Wood Association
ASTM American Society for Testing and Materials International
ICC-ES ICC Evaluation Service, Inc.
NRCA National Roofing Contractors Association
SMACNA Sheet Metal and Air Conditioning Contractors' National Association
UL Underwriters Laboratory

PART 2 - Products (Not Used)

PART 3 - Execution (Not Used)

END OF SECTION 01420
SECTION 01500 - Temporary Facilities and Controls

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01700 “Execution Requirements.”
2. Section 02240 “Dewatering.”

1.2 Use Charges

A. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner’s construction forces, Architect, testing agencies, and authorities having jurisdiction.

B. Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Coordinate with owner to determine point of connection.

C. Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Coordinate with owner to determine point of connection.

1.3 Quality Assurance

A. Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

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

1.4 Project Conditions

A. Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Provide barricades to protect pedestrian traffic around site.

C. Respond to complaints from Owner within 48 hours.

D. Provide immediate written RFI summarizing complaints received directly from neighbors.

E. Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the site.
F. Contractor is responsible for site, building and individual room security, and security to all areas of work.

PART 2 - Products

2.1 Materials

A. Comply with Sections 02741 and 02751 for Asphalt Paving and Concrete Paving.

B. Portable Chain-Link Fencing: Minimum 2-inch, 9 Ga., galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide privacy screen in fence and gates. Contractor is responsible for realigning, relocating and reestablishing temporary fence, privacy screen, and gates as required to accommodate access, circulation and progress of Work.

C. Provide necessary construction grade lumber and CDX plywood in sizes and thickness needed.

D. Provide ½” regular gypsum board as needed

E. Provide 10-mil minimum polyethylene sheeting as needed to protect and screen work and cover temporary openings.

F. Provide paint as needed to comply with VOC requirements.

G. Provide First Aid supplies.

2.2 Temporary Enclosures

A. Provide storage sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Keep materials dry at all times.

2.3 Equipment

A. Provide portable, UL rated fire extinguishers; with class, & extinguishing agent and in quantity & location as required by fire authority. Provide and maintain fire extinguishers in wood construction regardless of Fire Authority requirements.

B. Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Provide heating units listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
3. If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV 8 (eight) at each return air grille in system and remove at end of construction. Verify that existing HVAC system can draw air through filter without undue stress on existing fans and motors.

C. Locate, place and use equipment so as not to impose excessive loads on supporting walls, floors, roofs and structures.

PART 3 - Execution

3.1 Installation, General
A. Locate temporary facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

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

### 3.2 Temporary Utility Installation

A. Arrange with Owner and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. Owner will bill contractor for water services used. Coordinate with Owner for schedule of payment. At Substantial Completion, restore these facilities to condition existing before initial use. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans. Provide necessary visual meters and monitoring devices on existing utility lines and provide written quantities of usage in weekly progress reports.

C. Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

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

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

F. Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner. Owner will bill Contractor for electrical power used. Coordinate with Owner for schedule of payment. Provide necessary visual meters and monitoring devices on existing utility lines and provide written quantities of usage in weekly progress reports.

G. Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

H. Install a minimum of one (1) telephone line for each field office.

1. Provide a dedicated telephone line for each facsimile machine and computer in each field office.
2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

I. Provide temporary electronic DSL communication service, including electronic mail in each field office.

### 3.3 Support Facilities Installation
A. Provide construction offices, shops, and sheds. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Coordinate with Owner for temporary parking areas for construction personnel. Obtain and pay for required parking permits.

C. Provide temporary signs as necessary for completion of the Work. Locate temporary signs to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
   1. Provide temporary, directional signs for pedestrians, construction personnel and visitors.
   2. Maintain and touchup signs so signs are legible at all times.

D. Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Provide scaffolding as needed to complete the Work. Remove scaffolding at appropriate time when Work is complete and repair all marks and signs of scaffold installation in finished Work.

E. Provide facilities necessary for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

F. Provide lockable temporary weatherproof field office for IOR In location directed by IOR and maintain until directed by Owner. Provide office with natural and artificial light and ventilation. Provide electrical power, telephone service (non-pay phone) and heat.

3.4 Security And Protection Facilities Installation

A. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent unauthorized people and animals from easily entering site.
   1. Enclose project area to accommodate construction operations including office, storage and staging areas, but still allow required access to educational facilities occupied by students, faculty and administration. Coordinate with Owner to determine areas requiring access by Owner and students.
   2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
   3. Provide lockable entrances to work areas prevent unauthorized entrance, vandalism, theft, and similar violations of security.

C. Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting. Provide structurally adequate, protective, covered walkway for passage of individuals where hazardous operations may occur overhead.

D. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

E. Provide floor-to-ceiling temporary dustproof partitions to limit dust and dirt migration and to separate in-use occupied areas from fumes and noise.
1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, over 20 gauge metal studs 16” o.c. with fire-retardant plywood on construction operations side.
2. Insulate partitions.
3. Seal joints and perimeter.
4. Coordinate with Owner to determine occupied areas.

F. Provide and maintain temporary fire protection facilities of types needed to protect against reasonably predictable fire losses.

3.5 Operation, Termination, And Removal

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

B. Maintain facilities in good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

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

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements.

END OF SECTION 01500
SECTION 01524 - Construction Waste Management

PART 1 - General

1.1 Related Documents
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
B. Related Sections include:
   1. Section 01732 “Selective Demolition.”

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

1.3 Performance
A. The Owner has established that this Project shall generate the least amount of landfill waste possible and that processes that ensure the generation of as little landfill waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.
B. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.
C. Owner’s goal is to recycle as much nonhazardous demolition and construction waste as possible.
D. Field verify dimensions indicated on construction documents before confirming product orders or proceeding with Work, to minimize waste due to excessive materials.

1.4 Submittals
A. Submit six (6) copies of waste management plan to Architect within seven (7) days of receipt of Notice to Proceed and prior to any waste removal from the site.
B. Concurrent with each Application for Payment, submit three (3) copies of waste reduction progress report. Include the following information:
1. Material categories.
2. Total quantity of each waste item in tons, cubic feet or other appropriate unit of measure.
3. Quantity of waste salvaged, both estimated and actual measured units.
4. Quantity of waste recycled, both estimated and actual measured units.
5. Total quantity of waste recovered (salvaged plus recycled).
6. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
7. Include manifests, weight tickets, receipts and invoices to justify amounts indicated.

C. Before request for Substantial Completion, submit three (3) copies of the following records:

1. Calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
2. Receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
3. Receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
4. Receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices to justify amounts indicated.
5. Receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices to justify amounts indicated.

1.5 Quality Assurance

A. Conduct Waste Management Conference at project site.

B. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.6 Waste Management Plan

A. Develop waste management plan consisting of waste identification and waste reduction work plan. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan. Include separate sections in plan for demolition and construction waste, include cost/revenue analysis.

B. Indicate anticipated types and quantities of waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill. Include points of waste generation, total quantity of each type of waste and means of recovery, handling and transportation procedures.

1. Provide analysis of the proposed jobsite waste to be generated, including types and quantities. Provide a list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated net cost savings or additional costs resulting from separating and recycling (versus landfiling) each material. “Net” means that the following have been subtracted from the cost of separating and recycling:

   a. Revenue from the sale of recycled or salvaged materials.
   b. Landfill tipping fees saved due to diversion of materials from the landfill.

2. For materials that will be salvaged and reused in this Project, describe methods for collecting, preparing, transporting, and storing salvaged materials before incorporation into the Work.
3. Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers. Indicate procedures required by recycling facilities to store, handle and transport materials for recycling.

4. Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and disposal facility, tipping fees and projected cost of disposing of all Project waste in the landfill.

5. Include description of method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

D. Indicate total cost of waste disposal as if there was no waste management plan, and the net additional cost or net savings resulting from implementing waste management plan.

E. Include the following:

1. A description of the regular meetings to be held to address waste management. Refer to Section 01310 “Project Management and Coordination.”

2. A description of the means by which any waste materials, identified for salvage and recycling, will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.

3. A description of the means of sorting and transportation of the recyclable materials and destination of materials.

1.7 Delivery, Storage and Handling

A. Coordinate the schedule of product deliveries in order to minimize site storage time and potential damage to stored materials and to minimize waste due to excessive materials handling and misapplication.

B. Set aside and protect misdelivered and substandard products and materials and return to supplier for credit.

C. Store products and materials in a manner to prevent damage and contamination.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Plan Implementation

A. Implement waste management plan as approved by Architect and Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site. Distribute waste management plan to everyone concerned within 3 (three) days of submittal return. Review plan and procedures with all trades and workers.

C. Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

D. Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to maximize recyclability and salvageability of identified materials.
3.2 Recycling Waste

A. Arrange for timely pickups from the site and deliveries to recycling facility in order to prevent contamination of recyclable material.

B. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
   1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
   2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
   4. Store components off the ground and protect from the weather.
   5. Remove recyclable waste off Owner’s property and transport to recycling receiver or processor.

C. Sort and stack wood members according to size, type and length. Separate lumber, engineered wood products, panel products, and treated wood materials. Grind or chip lumber cut offs into small pieces. Bag sawdust that does not contain painted or treated wood and transport to recycling facility.

D. Separate metals by type:
   1. Structural Steel: Stack members according to size, type of member and length.
   2. Remove bolts, nuts, washers and other rough hardware.
   3. Sort and pile metal reinforcing.
   4. Sort and pile anchors, ties, clips and other miscellaneous metal items.

E. Separate asphalt felts. Remove and dispose of nails, staples, and accessories.

F. Stack large clean gypsum board pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners. Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

G. Stack large clean acoustical ceiling panels and tiles on wood pallets and store in a dry location. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.

H. Packaging:
   1. Break down packaging and cardboard into flat sheets. Bundle and store in a dry location.
   2. Separate and bag Polystyrene Packaging materials.
   3. As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
   4. Break down crates into component wood pieces and comply with requirements for recycling wood.
   5. Collect beverage containers and paper waste used by onsite workers and sort by material.

3.3 Disposal of Waste

A. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose in a landfill acceptable to authorities having jurisdiction.
   1. Do not allow landfill waste materials that are to be disposed of to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces, site areas, and routes of transport.
3. Transport landfill waste materials off Owner’s property and legally dispose of them.

B. Do not burn waste materials.

END OF SECTION 01524
SECTION 01600 - Product Requirements

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

   1. Section 01770 “Closeout Procedures.”

1.2 Definitions

A. Products: Items purchased for incorporating into the Work. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

C. Specific manufacturer names or product names noted as “or equal” are referenced to establish basis of design requirements for quality, properties, function, dimensions, instances, performance, physical properties, appearance, and other characteristics for the purposes of evaluating comparable products by other manufacturers. Comply with submittal requirements for submitting comparable products on an 'or equal' basis. Listed manufacturers are provided as a suggested guide and are not intended to limit Contractor’s choices of manufacturers. Contractor is responsible for providing products that meet the basis of design in every respect and providing required submittal information to demonstrate compliance.

1.3 Substitution Procedure

A. Indicate all proposed substitutions at time of bid and clearly identify in space provided on bid form.

B. Submit six copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

   1. Substitution Request Form: contractor to provide type written form showing substitution request identification number, summarize and list each item of content. Include statement on form that Contractor has reviewed contents of substitution request and has found it to be in compliance in all respects with the requirements of the Contract Documents including material and installation requirements. Contractor shall sign form.

   2. Show compliance with requirements for substitutions and the following, as applicable:

      a. Statement indicating why specified product or method cannot be provided.
      b. List of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable.
      f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

h. Research/evaluation reports acceptable to authority handling jurisdiction, evidencing compliance with building code in effect for Project.

i. Detailed evaluation of Construction Schedule showing effect on the overall Contract Time and individual tasks. If specified products are not available from manufacturer within scheduled construction time, provide written statement on manufacturer’s letterhead stating lack of availability or timing of delivery.

j. Cost implication, if any, in the Contract Sum.

k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. If necessary, Architect will request additional information or documentation for evaluation of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution. Use product specified if Architect cannot make a decision on use of a proposed substitution.

4. Do not install substituted products without acceptance from Owner and Architect.

5. Contractor is responsible for providing all necessary information including information requested by Architect to justify substitution.

6. Do not resubmit rejected substitutions.

7. Use of approved substitution does not alleviate Contractor from complying with requirements of Contract Documents.

8. Allow for all substitution request and review times in construction schedule. Additional schedule time will not be granted for substitutions.

1.4 Quality Assurance

A. If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

B. Do not incorporate products that are provided prior to satisfactorily passing testing requirements.

C. Provide all products required for a complete and proper installation, even if not specifically indicated, at no additional cost to Owner.

D. Where inter-related, multiple components are required for a complete system provide components that are completely compatible and satisfy required warranties. Provide only one brand, kind or make of product for each purpose throughout Work.

E. For all products referred to in singular number, provide the quantity needed to complete the Work.

1.5 Product Delivery, Storage, And Handling

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions. Exercise special care to protect products that are sensitive to light, UV exposure, heat or moisture.

B. Delivery and Handling:

1. Schedule and sequence deliveries with construction schedule to minimize storage time at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Promptly inspect products on delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and properly protected.
5. Provide adequate equipment and personnel to properly handle, move and store products and materials to prevent damage, disfiguring or soiling.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, and UV exposure, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage. Comply with MSDS.
7. Protect stored products from damage and liquids from freezing.
8. Do not bring products to site until conditions match those recommended in writing by manufacturer.
9. Do not store products labeled flammable or toxic within the building.
10. Store products in a secure enclosure.
11. When approved by Owner, and when site constraints do not permit on-site storage, materials may be stored off site in a bonded warehouse approved by Owner, at no additional cost to Owner.
12. Store granular materials on a solid flat surface in a well drained area.
13. Arrange storage area to allow access for inspections and for logical sequencing with construction.

1.6 Product Warranties

A. Special warranties specified shall be in addition to manufacturer’s standard warranties or implied warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Where special warranties are required prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval as submittal. Even when not specifically indicated as a submittal within a specific Specification Section.

PART 2 - Products

2.1 Product Selection

A. Provide products that comply with the Contract Documents that are undamaged and new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
3. ‘Or Equal’ basis-of-design: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product that is equal in all respects. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
4. Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
5. Where Specifications include the phrase "as selected from manufacturer's colors, patterns, and textures" or a similar phrase, Architect will select color, pattern, density, or texture from manufacturer’s full range of products that includes both standard and premium items.
6. Where a conflict exists between two different products specified to the same piece of work, provide the more expensive product at no additional cost to Owner.
7. Where conflict exists between product requirements indicated and jurisdictional requirements provide for more expensive option at no additional cost to Owner.
8. Where conflict exists between specifications and drawings for product requirements provide more expensive product at no additional cost to Owner.

2.2 Product Substitutions

A. Architect will consider Contractor's request for substitution only when the following conditions are satisfied:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated by Contractor with other portions of the Work.
9. Requested substitution provides specified warranties.

B. Contractor is responsible for providing all information necessary and requested to justify substitution request.

C. Substitution requests and processing shall in no way justify additional time or money to the Contract.

D. Substitution requests that are denied shall in no way justify additional time or money to the Contract.

E. Approved substitutions shall in no way relieve Contractor from requirements and responsibilities of the Contract Documents.

F. Contractor assumes all costs associated with processing proposed substitutions and for installing approved substitutions.

G. Substitutions on the basis of unavailability of a product must be accompanied by letter on manufacturer’s letterhead stating lack of availability.
H. Contractor shall pay all professional fees, including Architect and Engineers, for time required for review and any redesign services associated with substitutions and for costs associated with re-approval by Government Authority. Costs shall be paid by deductive change order to Contract.

I. Substitutions will not be considered when they are indicated or implied on submittals. All proposed substitutions must be requested with separate written requests.

PART 3 - Execution (Not Used)

END OF SECTION 01600
SECTION 01700 - Execution Requirements

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01310 "Project Management and Coordination."
2. Section 01330 "Submittal Procedures."
3. Section 01731 "Cutting and Patching."
4. Section 01770 "Closeout Procedures."

1.2 Quality Assurance

A. Provide installers practicing the best methods known to each particular trade. Use adequate numbers of skilled, experienced workers who are adequately trained and completely familiar with the requirements and methods needed for completion of the Work.

B. Where required by warranty requirements provide approved fabricators and installers. Provide written evidence of such approval on manufacturer’s letterhead from manufacturer.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Examination

A. The existence and location of construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of electrical, mechanical, structural and architectural elements, systems and other construction affecting the Work. Before construction, verify the location and points of connection of utility services.

B. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. If requirements of Contract Documents create conditions which are detrimental to performance of the Work provide an RFI to the Architect.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers, curing compounds and other finishes and coatings. Assure that moisture content of substrate is within acceptable written recommended limits of manufacturer of material to be applied to substrate.
3. Examine and verify location of mechanical and electrical systems to verify actual locations before material installation.
4. Examine and verify suitability of walls, floors, roofs and other elements to accept application and installation of products and systems.
5. Verify that conditions do not negate required warranties.
6. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates Contractor’s acceptance of surfaces and conditions.
3.2 Preparation

A. Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before order and fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work. Immediately upon discovery of conflict submit written RFI to Architect for clarification.

B. Verify space requirements and dimensions of items shown diagrammatically on Drawings prior to order and fabrication. Immediately upon discovery of conflict submit written RFI to Architect for clarification.

C. Review field conditions with Contract Documents. Immediately on discovery of the need for clarification of the Contract Documents; submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 Construction Layout

A. Before proceeding to lay out the Work, verify project dimensions and location shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, provide and RFI to the Architect immediately.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings or use means to measure or obtain required dimensions from electronic drawings, use written dimensions only.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect with written RFI immediately when deviations from required lines and levels exceed allowable tolerances.

B. Locate and lay out control lines and levels for structures and roof levels. Transfer survey markings and elevations for use with control lines and levels.

C. Maintain a log of layout control work. Record deviations from required lines and levels. Make the log available for reference by Architect.

3.4 Field Engineering

A. Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points. Report in writing lost or destroyed permanent benchmarks or control points promptly.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

3.5 Installation

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated. Install products in a manner that satisfies warranty requirements and is recommended in writing by manufacturer.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion. Prepare substrates and surfaces as recommended in writing by manufacturer. Perform Work when existing and forecasted weather conditions are within limits recommended in writing by manufacturer. Comply with manufacturer’s written temperature and humidity requirements. Allow materials to adjust to ambient conditions as recommended by manufacturer in writing prior to installation.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Do not use tools or equipment that produce harmful noise levels to building occupants.

F. Obtain and distribute templates to parties involved for factory prepared and field installed Work. Check Shop Drawings and coordinate with other work to confirm that adequate provisions are made for locating and installing fabricated products.

G. Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Where mounting heights are not indicated, submit an RFI to verify mounting heights.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Make joints of uniform width. Where joint locations in exposed work are not indicated, submit RFI to verify joint location. Measure, layout, plan, cut and fit exposed connections together to form hairline joints.

I. Prior to applying finishes such as stains and paints, be sure that shrubbery is pulled back from face of building so that all surfaces are exposed for application of finishes.

J. After sub-contractors and trades have completed work, inspect work and adjacent areas and make any adjustments necessary.

K. Use products, cleaners, and installation materials that are not considered hazardous, and are fully compatible with installed products and finishes.

3.6 Progress Cleaning

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
   2. Do not hold waste materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
   4. Do not store flammable, unsafe, unsanitary or odorous waste in a manner or location that would adversely affect pedestrians, building occupants, adjacent buildings and occupants, and properties.

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B. Maintain Project site free of loose, scattered waste materials and debris.

C. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, vacuum the entire work area, as needed.

D. Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Remove debris from concealed spaces before enclosing the space.

F. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Burying or burning waste materials on-site is not permitted. Washing waste materials down sewers or into waterways is not permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 Starting And Adjusting

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.8 Protection of Installed Construction

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 Correction Of The Work
A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Section 01731 "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace entire area of finish materials that are exposed to view if damaged surfaces cannot be repaired without visible evidence of repair.

D. Remove and replace damaged substrates and base structure if damaged by construction operations.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01700
SECTION 01731 - Cutting and Patching

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 07841 “Through-Penetration Firestop Systems.”

1.2 Submittals

A. Submit a proposal describing procedures at least 10 (ten) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform the Work.
4. Indicate when cutting and patching will be performed.
5. List utility services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work. Do not cut and patch structural elements without approval from Architect.

1.3 Quality Assurance

A. Do not cut, drill or notch structural elements unless detailed on structural drawings or without prior written authorization from the Structural Engineer.

B. Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance, decreased operational life or safety, or voids required or implied warranties.

C. Do not cut and patch elements or related components in a manner that results in reducing their load carrying capacity, capacity to perform as intended, causes increased maintenance or decreased operational life or safety, or voids required or implied warranties.

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

E. Sloppy, careless or avoidable cutting and patching will not be tolerated and work affected will be replaced at no cost to Owner. An aesthetically pleasing overall appearance of finished surfaces is a
requirement of this Project. Make necessary preparations, and use recommended techniques with great
care to ensure that all finished surfaces are acceptable to Architect. Architect will be the sole judge of
visual acceptability.

F. Before cutting and patching meet at Project site with parties involved including mechanical and electrical
trades. Review areas of proposed cutting and patching, coordinate procedures and resolve conflicts
before proceeding.

1.4 Warranty

A. Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching
operations, by methods and with materials approved in writing by manufacturer’s of affected materials,
so as not to void warranties. Architect will be the sole judge of visual acceptability.

PART 2 - Products

2.1 Materials

A. Comply with requirements specified in other Sections.

B. Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-
place adjacent surfaces to the fullest extent possible. If identical materials are unavailable or cannot be
used, use materials that, when installed, will match the visual and functional performance of in-place
materials. Architect will be sole judge of visual acceptability.

PART 3 - Execution

3.1 Examination

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

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

3.2 Preparation

A. Provide temporary support of Work to be cut.

B. Protect in-place construction during cutting and patching to prevent damage. Provide protection from
adverse weather conditions for portions of Project that might be exposed during cutting and patching
operations.

C. Avoid interfering with use of adjoining areas or interrupting the free passage to adjoining areas.

D. Where existing utility services/systems are required to be removed, relocated, or abandoned, bypass such
services/systems before cutting to prevent interruption to occupied areas.

3.3 Performance

A. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest
feasible time, and complete without delay. Cut in-place construction to provide for installation of other
components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cut in-place construction by sawing, drilling, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.

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

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

1. Test and inspect patched areas after completion to demonstrate integrity of installation.
2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Provide an even surface of uniform finish, color, texture, and appearance. Remove finishes and replace with new materials, if necessary as determined by Architect, to achieve uniform color and appearance.
4. Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Patch exterior components in a manner that restores enclosure to a weathertight condition.
6. Where patching occurs on a painted surface, apply primer and intermediate coats over patched area. Apply final coat over entire surface containing patch. Provide additional finish coats over entire surface until patch blends with adjacent surface, at no additional cost to Owner.

D. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731
SECTION 01732 - Selective Demolition

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01322 “Photographic Documentation for Preconstruction Photos.”
   2. Section 01500 “Temporary Facilities and Controls.”
   3. Section 01524 “Construction Waste Management.”
   4. Section 02230 “Site Clearing.”

1.2 Definitions

A. Remove: Detach items from existing construction in their entirety as required for new construction and legally dispose of them off-site.

B. Salvage: Detach items from existing construction and deliver them to Owner.

C. Remove and Reinstall: Detach items from existing construction in their entirety as required for new construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and will remain functional.

E. Abandon: Existing items of construction that are to be disconnected, shutdown and left in place.

1.3 Quality Assurance

A. Provide the services of an experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Comply with all applicable storm water, erosion and air quality regulations.

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

D. Conduct Predemolition meeting at Project site. Review methods and procedures related to selective demolition. Issue meeting minutes.

1.4 Project Conditions

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
C. Compare existing conditions with Construction Documents before proceeding with selective demolition. Immediately provide written RFI to Architect for resolution of any conflicts found.

D. It is not expected that hazardous materials will be encountered in the Work.
   1. Known hazardous materials will be removed by Owner before start of the Work under a separate contract.
   2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner in writing. Owner will remove hazardous materials under a separate contract.

E. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations. Re-route utilities if necessary to maintain service, without disruption of service. Maintain fire-protection facilities in service during selective demolition operations.

F. Verify depth and locations of existing utilities to remain prior to start of selective demolition.

1.5 Warranty

A. Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Examination

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

B. Inventory and record the condition of items to be removed and reinstalled and items to be salvaged.

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

D. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations. If such condition exists submit written RFI to Architect immediately.

E. Record existing conditions by use of measured drawings, preconstruction photographs and templates. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, assembly, construction, connection and interface with other materials, as needed to make exact reproduction.

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

3.2 Mechanical/Electrical Systems

A. Maintain systems indicated to remain and protect them against damage during selective demolition operations.
3.3 Preparation

A. Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities.

C. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished. Strengthen or add supports when required to adequately support surrounding Work during progress of selective demolition.

3.4 Selective Demolition

A. Demolish and remove existing construction only to the extent indicated and as required by new construction. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations. Maintain adequate ventilation when using cutting torches.

4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

5. Dispose of demolished items and materials promptly. Remove decayed, infested, corroding or otherwise dangerous unsuitable materials promptly.

6. Remove structural framing members and lower to ground by method suitable to avoid free fall and prevent ground impact and dust generation.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.

2. Protect items from damage.

3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 Selective Demolition Procedures for Specific Materials

A. Demolish masonry in small sections. Cleanly cut masonry at junctures with construction to remain, then remove masonry between saw cuts.

B. Remove all existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight.
1. Remove existing roof membrane, flashings, copings, and roof accessories.

3.6 Disposal of Demolished Materials

A. Remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

B. Do not burn demolished materials.

C. Do not discard or bury demolished materials.

3.7 Cleaning

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

END OF SECTION 01732
SECTION 01770 - Closeout Procedures

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 01290 “Payment Procedures.”
2. Section 01322 “Photographic Documentation.”
3. Section 01781 “Project Record Documents.”
4. Section 01782 “Operation and Maintenance Data.”
5. Section 01820 “Demonstration and Training.”

1.2 Substantial Completion

A. Before requesting review for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected in a punch list format.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover for utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Submit a written request for Project Review for Substantial Completion. On receipt of request, Architect will either proceed with review or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after review or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request re-review when incomplete items are corrected.
2. Results of completed review will form the basis of requirements for Final Completion.
1.3 Final Completion

A. Before requesting final review for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment.
   2. Submit certified Substantial Completion punch list of items to be completed or corrected stating that each item has been completed or otherwise resolved.
   3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Submit pest-control final inspection report and warranty.
   5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Submit a written request for final review for acceptance. On receipt of request, Architect will either proceed with review or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after review or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Request re-review when the incomplete items are corrected.

1.4 Warranties

A. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
   1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
   2. Provide heavy paper dividers with tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
   3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, name and address of Contractor.

B. Provide 3 (three) copies of warranties.

PART 2 - Products

2.1 Materials

A. Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

B. Provide close out documents in appropriately sized 3-ring binder with transparent vinyl insert sleeve on both front cover and binding edge. Use multiple binders if necessary.

PART 3 - Execution

3.1 Final Cleaning

A. Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. Turn over Project in a “like new” condition.
B. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances. Remove and dispose all mock-ups that are not incorporated into Work.

   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

   d. Remove tools, construction equipment, machinery, and surplus material from Project site.

   e. Clean exposed exterior and interior hard surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

   f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

   g. Sweep concrete floors broom clean in occupied spaces. Vacuum all surfaces to remove fine dust.

   h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

   i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

   j. Remove labels that are not permanent.

   k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration. Do not paint over name plates, labels, and similar identification items on parts and equipment.

   l. Wipe surfaces of mechanical, electrical, piping and similar equipment.

   m. Replace parts subject to unusual operating conditions.

   n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

   o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

   p. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

D. Turn over all keys to Owner.

E. Turn over additional materials and products as required by Contract Documents.
SECTION 01781 - Project Record Documents

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 01782 “Operation and Maintenance Data.”

1.2 Submittals

A. Submit one (1) set of corrected Record Drawings and one (1) set of marked-up Record Prints.

B. Submit one (1) PDF copy of each Record Drawing whether or not changes and additional information were recorded.

C. Submit one (1) PDF copy of Project's Specifications, including addenda and contract modifications.

D. Submit one (1) PDF copy of each Product Data submittal.

PART 2 - Products

2.1 Record Drawings

A. Maintain one set of black-line on white record prints of the Contract Drawings.

   1. Mark Record Prints to show the actual installation where installation varies from that shown on the current Contract Documents.
      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

   2. Mark record sets with erasable, colored pencil. Use colors to distinguish between changes for different categories of the Work at same location. Establish legend to clearly define colors.

   3. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

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

   1. Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
   2. Scan each Record Drawing whether it contains marks or not and create a PDF of each drawing.
   3. Provide the following identification on each Record Drawing:
      a. Project name.
2.2 Record Specifications

A. Mark Specifications to indicate the actual product or method of installation that varies from that indicated in Contract Documents, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders.

2.3 Record Product Data

A. Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications and Record Drawings where applicable.

2.4 Miscellaneous Record Submittals

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1. RFI's and RFI Log.
2. FCD's and FCD Log.
3. Change Orders.

PART 3 - EXECUTION

3.1 Recording and Maintenance

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

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

END OF SECTION 01781
SECTION 02230 - Site Clearing

PART 1 - General

1.1 Related Documents

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

1.2 Material Ownership

A. Except for stripped topsoil or other materials indicated to remain Owner's property, waste materials shall become Contractor's property and shall be removed from Project site. Benefits from recycled material belong to Owner.

1.3 Project Conditions

A. Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide owner with 1 week advanced notice of closure.

2. Provide alternate routes around closed or obstructed traffic ways.

B. Notify utility locator service in Project location and thoroughly investigate and verify location and depth of all on-site utilities and utility structures before site clearing.

C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Preparation

A. Locate and clearly flag trees and vegetation to remain or to be relocated.

B. Protect existing site improvements to remain from damage during clearing operations. Restore damaged improvements to their original condition, as acceptable to Architect.

3.2 Temporary Erosion and Sedimentation Control

A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

B. Inspect, repair, and maintain erosion and sedimentation control measures during construction.

C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
3.3 Utilities

A. Do not interrupt utilities serving occupied facilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than 7 (seven) days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner's written permission.

3.4 Clearing and Grubbing

A. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is required. Place fill material in horizontal layers not exceeding loose depth of 6 (six) inches and compact each layer to a density equal to adjacent original soil.

3.5 Site Improvements

A. Remove existing landscaping as indicated and as necessary to facilitate new landscaping. Fill holes and depressions with satisfactory soil material.

3.6 Disposal

A. Remove surplus soil material, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 02230
SECTION 05500 - Metal Fabrications

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:
   1. Section 09900 “Painting.”

1.2 Performance Requirements

A. Provide metal fabrications that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

   1. Temperature Change (Range): 120°F, ambient; 180°F, material surfaces.

1.3 Submittals

A. Product Data: For the following:
   1. Primer products.
   2. Grout.

B. Shop Drawings: Show fabrication and installation details for metal fabrications.

   1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
   2. Provide templates for anchors and bolts specified for installation under other Sections.
   3. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Welding certificates.

1.4 Quality Assurance

A. Welding: Qualify procedures and personnel according to the following:

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

1.5 Project Conditions

A. Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
1. Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

2. Provide allowance for trimming and fitting at site.

PART 2 - Products

2.1 Metals

A. Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 Ferrous Metals

A. Steel Plates, Shapes, and Bars: ASTM A 36.

B. Rolled-Steel Floor Plate: ASTM A 786, rolled from plate complying with ASTM A 36 or ASTM A 283, Grade C or D.

C. Steel Tubing: ASTM A 500, cold-formed steel tubing.

2.3 Fasteners

A. Unless otherwise indicated, provide Type 316 stainless-steel fasteners for exterior use and zinc-plated fasteners, nuts and washers with coating complying with ASTM B 633, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.


D. Provide expansion anchor bolt and sleeve assemblies with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.


2.4 Miscellaneous Materials

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Primer for Galvanized Coatings: Acid etch type primer.


2.5 Fabrication, General

A. Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form exposed work true to line and level with accurate angles and surfaces and straight edges.

D. Weld corners and seams continuously to comply with the following:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, grind and finish exposed welds and surfaces smooth and blended so no roughness or pitting shows after finishing and contour of welded surface matches that of adjacent surface.

E. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.

F. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

G. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

H. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

I. Galvanize and shop prime metal fabrication in exterior locations.

2.6 Miscellaneous Framing And Supports

A. Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items. Furnish inserts if units are installed after concrete is placed.

2.7 Loose Bearing And Leveling Plates

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchors and for grouting.

2.8 Finishes

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
B. Finish metal fabrications after assembly.

2.9 Finishes

A. Galvanized Fabrications:

1. Hot-dip galvanized items after fabrication to comply with ASTM A 123.
2. Solvent clean all surfaces. Wash all surfaces with etching solution such as Jasco Prep & Prime. Rinse and dry surfaces. Shop spray apply acid etching type primer to a dry film thickness recommended in writing by primer manufacturer, within 3 hours of washing with etching solution.

B. Stripe prime corners, crevices, bolts, welds, and sharp edges.

PART 3 - Execution

3.1 Installation

A. Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Comply with the following field welding requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

F. Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.2 Installing Miscellaneous Framing And Supports

A. Install framing and supports to comply with requirements of items being supported, including manufacturers’ written instructions and requirements indicated on Shop Drawings.

3.3 Installing Leveling Plates and Tube Steel Jambs

B. Set leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchors. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.

1. Use nonshrink nonmetallic grout, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations, unless otherwise indicated.
2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.
3. Pack grout solidly between CMU block surface and tube steel jambs to ensure that no voids remain.

3.4 Adjusting and Cleaning

A. Immediately after erection, clean field welds, bolted connections, and abraded areas. Touchup galvanized coatings in abraded areas.

B. Respray and touchup primer in abraded areas.

END OF SECTION 05500
SECTION 09900 - Painting

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 09963 “Elastomeric Coatings.”

1.2 Submittals

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.

1. Submit 7 (seven) samples on rigid backing, 8 inches square.
2. Step coats on samples to show each coat required for system including primer.
3. Label each coat of each sample with manufacturer and product designation name and number.

C. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

D. Submit manufacturer’s current written instructions and recommended methods of installation including substrate preparation and application rates.

E. Provide 100 S. F. full coat finish mockups on actual project substrates for all paint systems and colors indicated. Simulate finished lighting conditions for review.

1.3 Quality Assurance

A. MPI Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

B. Apply benchmark mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

   a. Wall and Ceiling Surfaces: Provide actual project paint mockups of at least 100 sq. ft.
b. Other Items: Architect will designate items or areas required.

2. Apply benchmark mockups after permanent lighting and other environmental services have been activated.

3. Final approval of color selections will be based on benchmark mockups. If preliminary color selections are not approved, apply additional benchmark mockups of additional colors selected by Architect at no added cost to Owner.

C. Provide painter with 10 (ten) years experience in the type of painting applications specified for this project.

D. Coordinate with other trades and Work of other Sections that will be applying primers to Work of those Sections, to ensure compatibility of the total paint system over substrate. Provide information on top coats to ensure use of compatible primers. Omit primer on metal surfaces that have been shop primed.

E. This Section includes painting of all Work, items and surfaces which are normally painted in a building of this type and level of quality, and shall be included in the Contract, whether or not painting of a specific item or surface is specifically called out and included in the drawings or mentioned in specifications.

F. Schedule indications on drawings are general and do not necessarily define the detail requirements. Include all detailed refinements for the required complete finishing of all spaces and rooms.

G. Include painting of all items and assemblies even if color is not yet indicated.

1.4 Delivery, Storage, And Handling

A. Deliver paint materials to project site in manufacturer’s original unopened containers bearing manufacturer’s label, with manufacturer’s name, logo, paint type, sheen, stock number, date of manufacture, contents by volume for pigment solids and vehicle constituents, thinning instructions, color name and number, and shelf life. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Place oily rags and waste in a metal container and remove from project site daily.

1.5 Project Conditions

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 55 and 95 deg F. Avoid painting surfaces when exposed to direct sunlight.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg. F above the dew point. Do not apply paint in damp or rainy conditions, or to damp or wet surfaces, or when inclement weather is expected within the drying /curing time recommended in writing by manufacturer.

C. Moisture test surfaces prior to applying any paint coatings. Verify that substrates have a maximum moisture content that complies with paint manufacturer’s written recommendations, and in no case higher than 12% maximum moisture content. Submit written test results.

D. Perform pH tests on concrete and masonry substrates. Verify pH levels are within paint manufacturer’s written recommendations, but in no case higher than 10. Submit written test results. If required by paint manufacturer’s written recommendations due to alkali content, apply a surface primer to concrete and masonry, such as Frazee 266 EPOTILT, or approved equal, prior to applying acrylic block filler.
E. Prior to applying finishes such as stains and paints, be sure that shrubbery is pulled back from face of building so that all surfaces are exposed for application of finishes.

1.6 Extra Materials

A. Furnish extra materials that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents. Furnish an additional 5 (five) percent, but not less than 5 gal. (5 gallons) of each material and color applied.

PART 2 - Products

2.1 Manufacturers

A. Subject to requirements, provide products by one of, or equal to, the following:

1. Benjamin Moore & Co.
2. Dunn-Edwards Corporation.
3. Frazee Paint.
5. Vista Paint.

2.2 Paint Materials

A. Provide materials for use within each paint system that are compatible with one another and compatible with substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

B. For each paint system, provide products recommended in writing by topcoat manufacturer for substrate indicated. Provide all products within a paint system by a single manufacturer including prep coats and primers.

C. Provide products that comply with jurisdictional requirements for VOC content, exclusive of colorants added to a tint base.

D. Provide paint that contains 30-45% solids, minimum.

E. In areas prone to mildew growth such as coastal areas or high humid environments, add a mildewcide to paint materials in quantities recommended in writing by manufacturer.

F. All paints and primers shall be ready mixed in original containers.

PART 3 - Execution

3.1 Examination

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content, pH levels and other conditions affecting performance of work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Unsatisfactory surfaces and materials must be corrected by applicable trade before painting.
D. In reconstruction areas where permanent installed items have been removed; provide textures, primers, and coatings as needed to eliminate ghosting, and to make surface visually indistinguishable in all respects to adjacent exposed surfaces.

E. Begin coating application only after unsatisfactory conditions have been corrected and are within manufacturer’s written recommendations and requirements of Contract documents. Architect shall be final judge on satisfactory conditions. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

F. Notify Architect with written RFI of any problems anticipated using paint materials specified over substrates indicated or project conditions. Failure to provide written RFI prior to starting painting operations constitutes Contractor’s acceptance of substrates and conditions.

3.2 Preparation

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual” for preparation of substrates indicated. Surfaces which cannot be prepared or painted as specified shall be immediately brought to the attention of the Architect in writing. Starting of Work without such written notification constitutes Contractor’s acceptance of substrates and conditions.

B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
3. Do not apply paint in areas where dust is being generated.

C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, dust, and incompatible paints and encapsulants.

1. Remove incompatible primers and coatings, and reprime substrate with compatible primers as required to produce paint systems indicated.
2. Prepare all surfaces per manufacturer’s written recommendation and per SSPC SP1, SP2 and SP3 as required by substrate and paint system requirements and as required by Contract documents.
3. Screen, cover or mask adjacent surfaces and materials which are not to receive paint or paint dust. Use appropriate light or medium tack masking tape.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions and Contract documents.

E. Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions, and requirements of contract documents.

F. Ferrous Metal Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer and requirements of contract documents. In severe exposure conditions such as coastal areas subject to salt water, humid environments, or environments with exposure to corrosive chemicals, apply two coats of primer to ferrous metals. Surfaces shall be primed within 3 hours after preparation.
G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal with a solvent or water based degreaser. To produce clean surfaces, prep cleaned galvanized metal surfaces with a prepping solution, such as Jasco Prep and Prime or approved equal before applying acid etch primer. Clean prep solution completely from surfaces. Apply Adoline 1201 or approved equal before applying primer. Prime surface within 3 hours of acid etching.

H. Aluminum Substrates: Remove surface oxidation to produce clean surfaces, prep cleaned aluminum surfaces with a prepping solution, such as Jasco Prep and Prime or approved equal before applying acid etch primer. Clean prep solution completely from surfaces. Apply Adoline 1201 or approved equal before applying primer. Prime surface within 3 hours of acid etching.

I. Wood Substrates:
   1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
   2. Sand surfaces that will be exposed to view, and dust off.
   3. Prime and backprime all surfaces of wood including cut and uncut edges, ends, faces, undersides, and backsides of wood including wood paneling, doors, windows, trim and cabinets. Use clear sealer to back prime wood receiving transparent finishes.
   4. For woods prone to tannin bleed (i.e., redwood and cedar,) apply 2 coats of primer.
   5. After priming, fill holes, cracks and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
   6. Fill all molding and trim joints and mortises completely and sand smooth prior to painting.

J. Plaster Substrates: Do not begin paint application until plaster is fully cured and dry.

K. Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

L. Existing surfaces to be recoated shall be thoroughly cleaned and prepared as recommended in writing by paint manufacturer. Patches and bare areas shall be spot primed with same primer as required for new surfaces.

3.3 Application

A. Coating systems specified indicate a minimum number of coats. Do not thin primers or paints; apply paint taken directly from manufacturer’s containers. Apply at coverage rates recommended by paint manufacturer. Apply primer coat as recommended by manufacturer to properly prepare surface for finish coats, one coat minimum. Apply additional primer coats, as necessary, to cover suction spots or unsealed areas, to properly prepare surface for finish coats at no additional cost to Owner. Apply finish coats as recommended by manufacturer, two coats minimum. Apply additional finish coats as needed to completely hide base substrates, primers, base coats, and achieve the desired consistency, uniformity in finish surface, and sheen at no additional cost to Owner.

B. Apply paints according to manufacturer's written instructions, with the following provisions:
   1. Flat and eggshell finishes may be rolled or brushed on drywall and plaster and spray applied on CMU. Spray-apply primer, intermediate and finish coats on all other surfaces.
   2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
   3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces. Paint inside surfaces of all panel covers and inside of all boxes. Do not paint inside of electrical boxes or panels.
C. Do not paint over dirt, rust, scale, grease, mildew, mold, moisture scuffed surfaces, or conditions detrimental to durable uniform paint film.

D. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. If undercoats or other conditions show through topcoat, apply additional coats until cured film as a uniform paint finish, color, and appearance. Comply with manufacturer’s written recommendations for drying times between succeeding coats.

E. Lightly sand and remove all dust between succeeding coats.

F. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

G. Painting Mechanical and Electrical Work: Paint the following:
   1. Uninsulated metal piping and conduit smaller than 2” diameter color to match adjacent surface – semi-gloss. 2” and larger use indicated color – semi-gloss.
   2. Uninsulated plastic piping.
   3. Pipe hangers and supports.
   4. Tanks that do not have factory-applied final finishes.
   5. Visible portions of internal surfaces of metal ducts to a point 3 feet back from duct outlet, without liner, behind air inlets and outlets.
   7. Paint all exposed surfaces in plenum spaces that can be visually seen through return and supply registers including; equipment, ductwork, piping and conduit.
   8. Paint all recessed fire sprinkler head cover plates, semi-recessed and exposed sprinkler head trims to match adjacent surfaces.

H. Do not paint over prefinished mechanical equipment, electrical switch covers, and transformers, UL labels, equipment and piping labels. Do not paint over fuseable links or sprinkler heads. Paint exposed pipes, ductwork, conduit and supporting hangers and suspension systems to match adjacent surfaces. Do not paint valve assemblies. Do not paint over piping insulation and metallic pipe coverings and wrappings.

I. Leave all parts of molding and ornaments clean and true to details with no undue amount of paint in corners and depressions.

J. Make edges of paint adjoining other material or color clean and sharp with no overlapping.

K. Refinish whole wall where portion of finish is deemed unacceptable by Architect.

L. All materials shall be spray-applied evenly with proper film thickness and free of runs, skips and other defects, except drywall, plaster and CMU with flat or eggshell finish.

M. Hardware, hardware accessories, plates, lighting fixtures and similar items in place shall be removed prior to painting and replaced upon completion of each space.

N. Heating and other equipment adjacent to walls shall be disconnected, using workmen skilled in appropriate trades, and moved to permit wall surfaces to be painted. Following completion of painting, expertly replace and reconnect.

O. Wash bare metal grilles and exposed ducts indicated to be painted with solvent, wash with etching solution then prime and paint as scheduled.
P. Paint doors on tops, bottoms and edges same as door faces after fitting.

Q. Paint backside and inside faces of access panels, cover doors, frames, and removable or hinge covers to match exposed fronts.

R. Provide wet paint signs, barricades, warning tape and other devices to protect newly finished surfaces. Remove after Work is completed and paint has thoroughly dried.

3.4 Field Quality Control

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.

2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint rejected surfaces. Contractor at Owner’s discretion shall remove rejected materials from previously painted surfaces prior to re-preparing surfaces and re-applying approved paint coating systems.

3.5 Cleaning And Protection

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces. Clean and repair blemishes to all surfaces caused by Work of this Section.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Leave surfaces in a first class condition.

E. Runs, sags, misses, holidays, stains and other defects in painted surfaces, including inadequate coverage, mil thickness, inconsistent sheen or uniformity of appearance shall be satisfactorily repainted as necessary. If a portion of a larger area is deemed unsatisfactory, the entire area of surface shall be stripped, re-prepared and re-painted with approved paint systems, as Owner’s discretion.

3.6 Painting Schedule

A. The following paint schedule is based upon Frazee Paint Systems as a basis of design; other paint systems may be proposed on an “approved equal” basis. Architect is sole judge of acceptability of paint system.

B. Exterior Paint Systems:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>100% Acrylic</td>
<td>1st Coating</td>
<td>262 Acrylic Block Filler</td>
</tr>
</tbody>
</table>

Painting
09900 - 7
2. Concrete and Plaster:

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>266P246 Acrylic/Epoxy Tilt-Up Primer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>209 Acri-Kote</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>209 Acri-Kote</td>
</tr>
</tbody>
</table>

3. Wood: Rough Sawn Wood and Siding

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>203 Duratec II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>203 Duratec II</td>
</tr>
</tbody>
</table>

4. Non-Ferrous Metal: Galvanized – Aluminum

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Gloss</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>561 Acrylic Metal Primer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>124 Mirro Glide SG</td>
</tr>
</tbody>
</table>

5. Ferrous Metal: Iron - Steel

<table>
<thead>
<tr>
<th>Finish</th>
<th>Resin</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-Gloss</td>
<td>100% Acrylic</td>
<td>1st Coat</td>
<td>561 Acrylic Metal Primer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Coat</td>
<td>124 Mirro Glide SG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Coat</td>
<td>124 Mirro Glide SG</td>
</tr>
</tbody>
</table>

END OF SECTION 09900
SECTION 09963 - Elastomeric Coatings

PART 1 - General

1.1 Related Documents

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

B. Related Sections include:

1. Section 09900 “Painting.”

1.2 Performance Requirements

A. Provide elastomeric coatings that comply with performance requirements specified in MPI 113.

B. Provide elastomeric coating systems with the following properties as determined by test methods indicated:

1. Elongation: Not less than 100 percent with a tensile strength of 200 psi and not less than 88 percent recovery after 1 hour and 90 percent recovery after 24 hours when tested according to ASTM D 2370 using parameters established by MPI 113.

2. Accelerated Weathering: No cracking, peeling, blistering, chalking, or visual deterioration after 1000 hours when tested according to procedures in ASTM G 155.

3. Low-Temperature Flexibility: No crack formation when tested according to ASTM D 1737.

4. Moisture-Vapor Transmission: Not less than 2.0 perms according to ASTM D 1653.

5. Wind-Driven Rain Resistance: No water penetration according to procedures in FS TT-C-555.

6. Minimum Solids Content by Volume: Not less than 45 percent.

1.3 Submittals

A. Product Data: For each elastomeric coating system specified. Include crack fillers, block fillers, and primers.

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference the specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.

2. Manufacturer's Information: Technical information including label analysis and instructions for handling, storing, and applying each coating material.

3. Certification by elastomeric coating manufacturer that products supplied complies with local VOC regulations.

B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of actual substrate.

1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.

2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.

3. Submit Samples on the following substrates for Architect's review of color and texture only:
Concrete, Exterior Plaster, and Stucco: 12-inch square Samples of actual substrate material for each color and texture.

Concrete Unit Masonry: 8 by 8 inch rectangular Samples of concrete masonry, with mortar joint in the center, for each color and texture.

Qualification Data: For Applicator.

Material Certificates: For each elastomeric coating material, signed by manufacturers.

1.4 Quality Assurance

A. Provide a firm or individual experienced in applying elastomeric coating systems similar in material and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance. Specification is written around NeoGard elastomeric coating as a campus standard. Product substitutions must be approved by Owner.

B. Source Limitations: Obtain crack fillers, block fillers, primers, and other undercoat materials from same manufacturer as finish coats.

C. Provide full-coat mockups for each type of coating on each substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample submittals.

1. Architect will select one exterior wall surface of each type of substrate to represent surfaces and conditions for application of elastomeric coatings. Prepare samples on at least 100 sq. ft. of wall surface.
2. Apply materials according to requirements for the completed Work. Provide required sheen, color, and texture on each surface.
3. Approved mockups will be used to evaluate coating systems.
5. Final approval of colors will be from mockups.

1.5 Delivery, Storage, and Handling

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Manufacturer's stock number and date of manufacture.
3. Contents by volume, for pigment and vehicle constituents.
4. Thinning instructions (if permitted).
5. Application instructions.
6. Color name and number.
7. Handling instructions and precautions.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue. Protect elastomeric coating materials from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.6 Project Conditions

A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 90 deg F, unless otherwise permitted by manufacturer's written instructions.
B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before starting or continuing coating operation. Remove all mold, algae and scale from surfaces to receive elastomeric coating.

C. Protection:

1. The overspray from coating material can carry considerable distances and care should be taken to do the following:
   a. Post warning signs a minimum of 100 feet from the work area.
   b. Cover all intake vents near the work area.
   c. Set up wind breaks when needed.
   d. Minimize or exclude all personnel not directly involved with coating application.
   e. Provide adequate ventilation.

2. Protect plants, vegetation and animals which might be affected by coating. Use drop cloths or masking as required.

D. Prior to applying finishes such as stains, paints, and elastomeric coatings, be sure that shrubbery is pulled back from face of building so that all surfaces are exposed for application of finishes.

1.7 Warranty

A. Elastomeric Coating Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace elastomeric coatings that fail within specified warranty period. Failures include, but are not limited to, water penetration through the coating.

B. Warranty Period for Elastomeric Coatings: 10 years from date of Substantial Completion.

1.8 Extra Materials

A. Furnish extra elastomeric coating materials from same production run as materials applied and in quantities described below. Package materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to Owner. Quantity: Furnish Owner with one extra case of each color and finish of elastomeric coating materials applied.
C. Colors and Textures: As selected by Architect from manufacturer’s full range.

2.3 Sealant
   A. NeoGard 70991.

2.4 Patching Compound
   A. NeoGard 7032 NeoFlex patching compound.

2.5 Primers
   A. Acrylic primer as recommended by manufacturer for substrate and application.

2.6 Elastomeric Finish-Coat Materials
   A. Smooth Elastomeric Finish: NeoGard 7100 Series Elastomeric Acrylic Coating.

PART 3 - Execution

3.1 Examination
   A. Examine substrates and conditions, with Manufacturer Applicator present, for compliance with requirements for coating application. Comply with procedures specified in PDCA P4.
      1. Proceed with coating application only after unsatisfactory conditions have been corrected and surfaces are thoroughly dry.
      2. Start of coating application will be construed as Contractor’s acceptance of surface conditions.

   B. Review other Sections in which primers are provided to ensure compatibility of total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers. Notify Architect in writing about anticipated problems when using coatings specified over substrates primed by others.

3.2 Preparation
   A. Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating. After completing coating operations, reinstall items removed, using workers skilled in trades involved.

   B. Before applying coatings or other surface treatments, clean substrates of substances that could impair bond of coating systems. Remove oil and grease before cleaning. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.

   C. Clean and prepare surfaces to be coated according to manufacturer's written instructions for particular substrate conditions and as specified.
      1. Provide barrier coats over incompatible primers or remove and reprime.
      2. Prepare brick, concrete, concrete unit masonry, stucco, and similar surfaces to receive elastomeric coatings. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar impediments to good adhesion by water blasting followed by a clear water rinse.
a. Remove mildew and neutralize surfaces according to manufacturer's written instructions before patching materials are applied.
b. Roughen as required to remove glaze. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
c. If hardeners or sealers have been used to improve concrete curing, use mechanical methods for surface preparation.
d. Determine alkalinity and moisture content of surfaces to be coated by performing appropriate tests. If surfaces are sufficiently alkaline to cause finish paint to blister and burn, correct this condition before application. Do not apply coatings over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.

3. Fill cracks according to manufacturer's written instructions before coating surfaces. Remove dust and dirt from around cracks. Remove mildew by sterilizing before filling. Apply manufacturer's recommended primer to cracks before patching. If shrinkage occurs after applying crack filler, apply additional filler material to cracks before initial application of elastomeric coatings.

a. Cracks up to 1/16 inch: Clean surface around cracks. Apply crack filler primer penetrating cracks as deeply as possible, overflowing crack 2 inches on each side. When crack filler primer is dry, apply manufacturer's recommended sealant, forced well into cracks using a brush, putty knife, or trowel. Smooth edges of primed area around cracks. Allow for sealant shrinkage when applying.
b. Cracks up to 3/8 inch: Open cracks to ¼ to 3/8 inch wide and 1/8 inch deep. Clean cracks and surrounding area removing dust, dirt, and other impurities. Apply crack filler primer recommended by manufacturer with a brush to obtain uniform coverage and spread approximately 2 inches on each side of cracks. Fill cracks with manufacturer's recommended crack filler applied with a putty knife or trowel, and allow for shrinkage. If excessive shrinkage occurs, reapply crack filler.

D. Mask all control joints.

E. Mix and prepare materials according to coating manufacturer's written instructions.

1. Maintain containers used in mixing and applying elastomeric coatings in a clean condition, free of foreign materials and residue.
2. Stir materials before application to produce a mixture of uniform density. Stir as required during application. If surface film forms, do not stir film into material. If necessary, remove film and strain coating material before using.
3. Do not thin material unless specifically required by manufacturer’s written instructions.

F. Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match color of finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 Application

A. Apply elastomeric coatings according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Colors, surface treatments, and finishes are indicated in coating schedule.
2. Do not paint over conditions detrimental to formation of a durable coating film, such as dirt, rust, scale, grease, moisture, and scuffed surfaces.
3. Provide finish coats compatible with primers used.
B. Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

C. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Number of coats and film thickness required are same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
2. If undercoats or other conditions show through final coat, apply additional coats until coating film is of uniform finish, color, and appearance. Ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat does not cause undercoat to lift or lose adhesion.

D. Apply elastomeric coatings by spray according to manufacturer's written instructions. Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

E. Apply each material no thinner than manufacturer’s recommended spreading rate to achieve dry film thickness as recommended by manufacturer. For spray application, apply each coat to provide equivalent hiding of brush-applied coats. Do not double back with spray equipment, building up film thickness of two coats in one pass.

F. Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

G. Apply a primer to material being coated before applying finish coats.

H. Match approved samples for color, texture, and coverage. Remove, refinish, or recoat work not complying with specified requirements.

3.4 Field Quality Control

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during coating operations:

1. Owner will engage a qualified independent testing agency to sample coating material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will perform appropriate tests for the following characteristics as required by Owner:
   a. Elongation.
   b. Accelerated weathering.
   c. Low-temperature flexibility.
   d. Moisture-vapor transmission.
   e. Wind-driven rain resistance.
   f. Minimum solids content by volume.
3. Owner may direct Contractor to stop coating application if test results show materials being used do not comply with requirements. Contractor shall remove noncomplying materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. If necessary, Contractor may be required to remove rejected materials from previously coated surfaces if, on recoating with specified materials, the two coatings are not compatible.
3.5 Cleaning

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site. After completing coating work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods, being careful not to scratch or damage adjacent finished surfaces.

3.6 Protection

A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating. Leave in an undamaged condition.

B. Provide "Wet Paint" signs to protect newly coated finishes. Remove temporary protective wrappings provided by others to protect their work after completing coating operations. After construction activities of other trades are complete, touch up and restore damaged or defaced coated surfaces. Comply with procedures specified in PDCA P1.

END OF SECTION 09963
SECTION 09965 – Vertical Surface Concrete and Masonry Stain

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 03300 “Cast-In-Place Concrete.”
2. Section 09220 “Exterior Plaster.”

1.2 References


1.3 Submittals

A. Product Data: For each stain system indicated, including:

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer’s catalog number and general classification.
2. Preparation instructions and recommendations.
3. Provide manufacturer’s technical information, including label analysis and instructions for handling, storing and applying each stain material.

B. Verification Samples: For each finish product specified, minimum 12 inches x 12 inches square, actual base material representing actual product, color, and patterns.

1.4 Quality Assurance

A. Provide a firm or individual experienced in applying stains similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Provide products from a manufacturer with minimum 10 years successful experience with stains specified in this Section. Obtain primers and stains for each system from the same manufacturer.

C. Stain exposed masonry surfaces. If an item or a surface is not specifically mentioned, include staining of the item or surface the same as similar adjacent materials or surfaces, at no additional cost to Owner. If a color or finish is not indicated, Architect will select from colors and finishes available.

D. Provide a mockup for evaluation of surface preparation techniques and application workmanship.

1. Do not proceed with remaining work until workmanship and color are approved by Architect.
2. Refinish mockup area as required to produce acceptable work.

Vertical Surface Masonry Stain
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1.5 Delivery, Storage and Handling

A. Deliver materials to Project site in manufacturer’s original, unopened packages and containers bearing manufacturer’s name and label.

B. Store materials in tightly covered containers in a well-ventilated, cool area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue. Keep product and containers out of direct sunlight, protect from freezing.

1.6 Project Conditions

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer in writing for optimum results. Do not install products under environmental conditions outside manufacturer’s absolute written limits.

B. Unless indicated otherwise apply stains only when temperatures of surfaces to be stained and surrounding air are between 50 and 90 deg F.

C. Do not apply stain in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

D. Apply stains to surfaces and substrates that have moisture and pH levels within manufacturer’s written recommendation.

E. Do not apply stain when inclement weather, rain or water exposure is expected within 24 hours.

PART 2 - Products

2.1 Manufacturers

A. R-Crete, Inc.

2.2 Stain Materials

A. Provide R-Crete, Inc. silica shield stain to match adjacent conditions.

B. VOC Classification: Provide masonry stain materials, including primers that have a VOC classification meeting jurisdictional requirements.

C. Color: As selected by Architect from manufacturer’s full range of colors including custom colors.

2.3 Surface Preparation Materials

A. Mildew Remover: Pittsburgh Paints Mildew Check Multi Purpose Wash 18-1.

PART 3 - Execution

3.1 Examination

A. Review substrate conditions and correct any deficiencies prior to starting Work. Do not begin installation until substrates have been properly prepared. Proceeding with installation indicates Contractor’s acceptance of substrate.
3.2 Preparation

A. Remove lighting fixtures, signs, registers, and similar items already installed that are not to be stained. If removal is impractical or impossible because of size or weight of the item, provide surface-applied masking and protection before surface preparation and staining. Mask all glass and metal surfaces to prevent adverse reactions to surfaces such as staining and etching.

B. Before applying stain, power wash and clean substrates of substances that could impair bond of the various coatings. Remove soil and grease before cleaning. Schedule cleaning and staining so dust and other contaminants from the cleaning process will not foul surrounding area and surfaces.

C. Clear and pull plants, brush and limbs away from building so all surfaces can be stained.

D. Clean and prepare surfaces to be stained according to manufacturer’s written instructions for each particular substrate condition and as specified.

1. Clean all surfaces of dirt, grease, form oil and wax. Remove loose or chalky deposits, parting membranes and efflorescence. Point cracks, voids and surface fissures.
2. Point cracks, fissures and cold joints and non-working joints with patching compound recommended by substrate manufacturer.
3. Surfaces must be clean, dry, fully cured, and free from efflorescence, scale, chalk, dust, dirt, grease, oils, release agents or other foreign materials which may inhibit penetration and bond of stain.
4. All cracks and damaged surfaces and masonry should be repaired, patched and fully cured prior to application of stain.
5. Allow all wet and washed surfaces to thoroughly dry and test for acceptable moisture content before applying stain.
6. Substrate should be dry and absorbent.
7. Remove all fungi, algae or mold.

E. Prepare concrete, concrete masonry units, and cement plaster surfaces to be stained. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.

1. Use abrasive blast-cleaning methods if recommended in writing by stain manufacturer.
2. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application.
3. Do not coat surfaces if moisture content exceeds that permitted in manufacturer’s written instructions.

F. Carefully prepare stain materials according to manufacturer’s written instructions.

1. Maintain containers used in staining in a clean condition, free of foreign materials and residue.
2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
3. Use only the type of thinners approved by manufacturer and only within recommended limits.
4. Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.
Vertical Surface Masonry Stain

3.3 Application

A. Apply stain by spray according to manufacturer’s written instructions. Use applicators and techniques best suited for the material being applied. Do not apply masonry stain over dirt, rust, scale, grease, moisture, scuffed surfaces, organic matter, or conditions detrimental to forming a durable coating film. Always test a small portion of wall prior to full application of wall.

B. Match approved samples for color, texture, and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.

C. Do not allow spray mist or liquid to drift onto surrounding properties or parking lots. Coordinate with Owner to provide staining and spraying operations at times when nearby parking is minimal.

D. Protect all adjacent shrubs and materials from overspray.

E. Do not apply in direct sunlight and heat which may cause curing time to speed up.

F. Do not allow material to puddle.

G. If recoating is indicated or needed to achieve desired results, wait a minimum of 1-2 hours between coats.

3.4 Field Quality Control

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when stain is being applied.

1. Owner will engage a qualified independent testing agency to sample stain material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.

2. Owner may direct Contractor to stop staining if test results show material being used does not comply with specified requirements. Contractor shall remove non-complying stain from Project site, pay for testing, and re-stain surfaces previously coated with the non-complying stain. If necessary, Contractor may be required to remove non-complying stain from previously stained surfaces if, on re-staining with specified stain, the two coatings are incompatible.

B. After masonry stain has fully cured, verify color uniformity, and reapply stain as needed to make surface uniform in color and appearance.

3.5 Cleaning

A. After completing staining, clean glass and stain-splattered surfaces. Remove spattered stain by washing and scraping without scratching or damaging adjacent finished surfaces. Reinstall items removed using workers skilled in trades involved.

3.6 Protection

A. Protect work of other trades, whether being stained or not, against damage from staining. Correct damage by cleaning, repairing or replacing, and re-staining, as approved by Architect.

B. Provide “Wet Paint” signs to protect newly stained finishes. After completing staining operations, remove temporary protective wrappings provided by others to protect their work.

C. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces.
Vertical Surface Masonry Stain
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SECTION 10605 - Wire Mesh Partitions

PART 1 - General

1.1 Related Documents

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

B. Related Sections include the following:

1. Section 09900 "Painting."

1.2 Definitions

A. Terms used in this Section shall be as defined in ASTM E 2016:

1.3 Performance Requirements

A. Provide exterior wire mesh partitions capable of withstanding the effects of gravity loads and the wind loads based on uniform pressure as indicated on Drawings.

B. Provide wire mesh partitions capable of withstanding the effects of earthquake motions determined according to Title 24 California Building Code.

C. Provide exterior wire mesh items that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures of 120 deg F, ambient, 180 deg F, material surfaces, to prevent buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects caused by thermal stress. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1.4 Submittals

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for wire mesh items.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Samples: 12-by-12-inch panel constructed of specified frame members and wire mesh. Show method of connecting, fabricating, and finishing members at intersections and corners. Demonstrate connection between mesh and framing member.

D. Qualification Data: For installer.

E. Maintenance Data: For wire mesh partition door hardware to include in maintenance manuals.

1.5 Quality Assurance

A. Provide an installer who has a minimum 5 years experience with installation of wire mesh partitions and gate openings.

B. Obtain wire mesh items through one source from a single manufacturer.
C. Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel."
2. AWS D1.3, "Structural Welding Code--Sheet Steel."

D. Conduct pre-installation meeting at Project site to comply with requirements in Section 01310 "Project Management and Coordination."

1.6 Delivery, Storage, and Handling

A. Deliver wire mesh items with cardboard protectors on perimeters of panels and doors and with posts wrapped and palleted to provide protection during transit and Project-site storage. Do not use nonvented plastic.

B. Inventory wire mesh partitions and hardware on receipt to ensure complete delivery and provide secure lockup for wire mesh partition door hardware delivered to Project site. Tag each item with identification and include basic installation instructions with each item or package.

C. Deliver keys to Owner.

1.7 Project Conditions

A. Verify actual locations of construction contiguous with wire mesh items by field measurements before fabrication and indicate measurements on Shop Drawings. Where field measurements cannot be made without delaying the Work, coordinate with necessary trades to establish location dimensions and proceed with fabricating wire mesh items without field measurements. Coordinate with ongoing construction to ensure that actual location dimensions correspond to established dimensions.

PART 2 - Products

2.1 Manufacturers

A. Subject to requirements, provide products by one of, or equal to, the following:

1. Acorn Wire & Iron Works, Inc.
5. Wire Crafters, Inc.

2.2 Materials

A. Steel Wire: ASTM A 510.

B. Steel Plates, Channels, Angles, and Bars: ASTM A 36.

C. Cold-Rolled Steel Sheet: ASTM A 1008, Commercial Steel (CS), Type B.

D. Metallic-Coated Steel Sheet: ASTM A 653, Commercial Steel (CS), Type B; with G60 galvanized coating.

E. Provide manufacturer’s panel-to-panel standard steel bolt fasteners.
F. Provide postinstalled expansion anchors in concrete, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

1. Provide stainless-steel components complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 for bolts and nuts; ASTM A 666 or ASTM A 276, Type 304, for anchors.
2. Provide postinstalled anchors in concrete, with capability to sustain, without failure, a load equal to 4 times the loads imposed.
3. Provide postinstalled anchors in grouted masonry units, with capability to sustain, without failure, a load equal to 6 times the loads imposed.

G. Provide galvanized metal for all components, framing mesh and fasteners for wire mesh partitions located in exterior locations.

2.3 Paint

A. Provide shop primer where field finish painting is indicated to comply with applicable requirements in Section 09900 “Painting.”

2.4 Wire Mesh Partitions

A. Mesh: 0.192-inch-diameter, intermediate-crimp steel wire woven into 2-inch diamond mesh.

B. Vertical and Horizontal Panel Framing: 1-1/2-by-3/4-by-0.0966-inch cold-rolled, C-shaped steel channels; with 3/8-inch-diameter bolt holes spaced not more than 18 inches o.c. along center of framing.

C. Horizontal Panel Stiffeners: 1-1/2-by-3/4-by-1/8-inch cold-rolled steel channels with wire woven through, or two 1-by-1/2-by-1/8-inch cold-rolled steel channels bolted or riveted toe to toe through mesh.

D. Top Capping Bars: 3-inch-by-4.1-lb hot-rolled steel channels.

E. Posts for Other-Than-90-Degree Corners: Steel 2-inch-OD pipe or tubing with 3/8-inch-diameter bolt holes aligning with bolt holes in vertical framing.

F. Line Posts: 3-inch-by-4.1-lb or 3-1/2-by-1-1/4-by-0.1265-inch steel channels; with 5-by-18-by-1/4-inch steel base plates punched for attachment to floor.

G. Swinging Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/2-by-3/4-by-1/8-inch steel channels or C-channels, banded with 1-1/2-by-1/8-inch flat steel bar cover plates on 3 sides, and with 1/8-inch-thick angle strike bar and cover on strike jamb.

1. Hinges: Stanley BB855 5x6 or equal; spray primed; sufficient size to allow 180-degree swing of gate; welded to gate and jamb framing.
2. Panic hardware: Precision 2103 X 1703C
3. Deadlock: Best Access Systems 48H-7K STD
4. Lock Boxes: Keedex K-BXMORE-BST38HM, Keedex K-BX515175
5. Rim Cylinder: Best Access Systems, 1E-72 PATD
6. Inactive Leaf Hardware: Cane bolt at bottom.

2.5 Fabrication

A. Fabricate wire mesh items from components of sizes not less than those indicated. Use larger-size components as recommended in writing by wire mesh item manufacturer. Provide bolts, hardware, and accessories as required for complete installation. Fabricate wire mesh items to be readily disassembled. Weld corner joints of framing and grind smooth, leaving no evidence of joint.

B. Fabricate wire mesh partitions with cutouts for pipes, ducts, beams, and other items indicated. Finish edges of cutouts with a neat, protective edge.
   1. Securely weld mesh to framing.
   2. Fabricate framing with mortise and tenon corner construction.
      a. Provide horizontal stiffeners as required by panel height as recommended in writing by wire mesh partition manufacturer. Weld horizontal stiffeners to vertical framing.
      b. Fabricate partition and door framing with slotted holes for connecting adjacent panels.
   3. Fabricate wire mesh partitions with 3 inches of clear space between finished floor and bottom horizontal framing.
   4. Align bottom of door with bottom of adjacent panels. For doors that do not extend full height of partition, provide transom over door fabricated from same mesh and framing as partition panels.
   5. Mortise, reinforce, drill, and tap doors and framing as required to install hardware.

C. Fabricate wire mesh partitions with cutouts for pipes, ducts, beams, and other items indicated. Finish edges of cutouts with a neat, protective edge.
   1. Securely weld mesh to framing.
   2. Fabricate framing with mortise and tenon corner construction. Provide stiffeners as required by panel span as recommended in writing by wire mesh ceiling manufacturer. Weld stiffeners to framing.

2.6 Finishes

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish wire mesh items after shop assembly. Variations in appearance of abutting or adjacent pieces are not acceptable. Noticeable variations in the same piece are not acceptable. Variations in appearance of non-adjacent components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

B. Where required, hot-dip galvanize wire mesh items to comply with ASTM A 123. Hot-dip galvanize hardware for hot-dip galvanized wire mesh items to comply with ASTM A 153.

PART 3 - Execution

3.1 Examination

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Examine floors for suitable conditions where wire mesh items will be installed. Examine walls and ceilings to which wire mesh items will be attached for properly located blocking, grounds, and other solid backing for attachment of support fasteners.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with installation constitutes Contractor’s acceptance of substrate conditions.
3.2 Erection

A. Wire Mesh Partitions:
   1. Anchor wire mesh partitions to tube steel posts at 12 inches o.c. through panel framing.
   2. Install doors complete with door hardware.
   3. Bolt accessories to wire mesh partition framing.

3.3 Adjusting and Cleaning

A. Adjust doors to operate easily without binding.

B. Check and readjust operating hardware items just before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work including doors and framing that are warped, bowed, or otherwise unacceptable.

C. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint; paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas; repair galvanizing to comply with ASTM A 780.

END OF SECTION 10605