

SECTION 00 01 00

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SUBSTITUTION REQUEST FORM

Note: Failure to complete this form with complete and accurate information in a timely manner will nullify any request for substitution.

TO: _____

PROJECT: _____

We hereby submit for your consideration the following product(s), material(s), and/or detail(s) instead of the specified item per the contract documents for the above indicated project and the following specified reference:

<u>ITEM DESCRIPTION</u>	<u>SPEC SECTION</u>	<u>SPEC PARAGRAPH</u>	<u>DRAWINGS</u>
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Proposed Substitution: _____

- a. Attach complete technical data, including laboratory tests, if applicable.
- b. Include complete information on changes to Drawings and/or Specifications, which proposed substitution would require for its proper installation.
- c. Submit with this request all necessary samples and substantiating data to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature and test reports to indicated equality in performance.
- d. Upon submitting any substitution, the Contractor and/or Subcontractors certify that the substituted product does not contain detectable amounts of asbestiform minerals and/or lead compounds in concentrations greater than 1/10th of 1% (0.1%).

Fill in blanks below:

A. Does the proposed substitution affect dimensions indicated on Drawings?

Yes ___ No ___

Explanation: _____

B. Will the undersigned pay for changes to the building design, including design, engineering and processing costs caused by the proposed substitution?

Yes ___ No ___

Explanation: _____

C. Does the proposed substitution have an effect on other trades?

Yes ___ No ___

Explanation: _____

D. Does the proposed substitution have an effect on applicable code requirements?

Yes ___ No ___

Explanation: _____

E. Outline differences between proposed substitution and specified item:

F. Are the manufacturer's guarantees of the proposed substitution the same as the specified item?

Yes ___ No ___

Explanation: _____

G. Is the proposed substitution listed with and conform to the same requirements of the same testing agencies as the specified item, such as ICBO, ASTM, etc.?

Yes ___ No ___

Explanation: _____

Has the proposed substitution been accepted by DSA?

Yes ___ No ___

Explanation: _____

**CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY
FOR EQUAL PERFORMANCE BY CONTRACTOR**

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

Submitted By:

Signature Title

Name (print)

Firm Date

Telephone

Address

Remarks: _____



For Use By Design Consultant

_____ Accepted _____ Accepted As Noted _____ Not Accepted

_____ Received Too Late _____ Approved as Alternate – See Bid Form

DOCUMENT 00 11 13

NOTICE TO DESIGN-BUILD ENTITIES

NOTICE IS HEREBY GIVEN that the Contra Costa Community College District (“District”) of Martinez, California, acting through its Governing Board, hereinafter referred to as the District, will accept proposals for the award of a Design Build Project.

**CCCD PROJECT NO. D-628
ENGINEERING TECHNOLOGY RENOVATION PROJECT**

Each proposal must conform to and be responsive to the contract documents and be submitted on a form furnished by the District. Proposals can only be submitted by those Design-Build Entities who have been invited to submit proposals for this Project. The following firms are hereby invited to submit proposals:

1. Clark Sullivan Construction & JK Architecture Engineering
2. Flint & Steinberg Hart
3. Overaa Construction & HED

DETERMINATION OF BEST VALUE: The District will review proposals and request that the three (3) firms participate in an interview process. If the Contract is to be awarded, District will award the Contract to the responsive Design-Build Entity whose proposal is determined to provide the Best Value to the District. District shall provide Document 00 51 03 Notice of Award within one hundred twenty (120) calendar days of Proposal submission. District’s written decision shall support the award of the Contract by stating the basis of the award.

THIS IS A PROJECT STABILIZATION AGREEMENT PROJECT: This project is subject to the terms of the Project Stabilization Agreement (PSA) attached as Appendix G.

PREVAILING WAGE: The successful proposer shall be required to pay its workers on this project a sum not less than the general prevailing wage rate of per diem wages and not less than the general prevailing rate for holiday and overtime work for work of a similar character in the locality in which the project is performed as provided under California Labor Code section 1770 et sec. The District has determined the prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work in the locality in which this project is to be performed for each craft, classification or type of work needed to execute the work.

Design-Build Entity shall be required to post, at each job site, a copy of such prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations.

This project is a Public Works Project. All Contractors and Subcontractors must be registered with the California Department of Industrial Relations (DIR) pursuant to Labor Code Section 1773.3 for monitoring of labor compliance with DIR. For complete information, refer to the following link: www.dir.ca.gov/public-works/SB854.html

SUBSTITUTION OF SECURITIES: District will permit successful Proposer to substitute securities for retention monies withheld to ensure performance of Contract, as set forth in Document 00 57 00 (Escrow Agreement in Lieu of Retention), in accordance with California Public Contract Code, Section 22300. By this reference, Document 00 57 00 (Escrow Agreement in Lieu of Retention) is incorporated in full in this Document 00 11 13.

RESTRICTIONS ON SUBSTITUTIONS AND SOLE SOURCE ITEMS: As a limitation on Proposer's privilege to substitute "or equal" items, District has found that certain items are designated as District standards and certain items are designated to match existing items in use on a particular public improvement either completed or in the course of completion or are available from one source. As to such items, District will not permit substitution. Such items are described in the Bidding Documents.

The Contra Costa Community College District is an equal opportunity employer.

END OF DOCUMENT

SECTION 00 26 40

RULES AND PROCEDURES FOR DISCUSSIONS AND NEGOTIATIONS

PART 1 - GENERAL

1.1 SUMMARY

- 1.1.1 This section provides the rules and procedures by which the District will discuss and negotiate a design build contract with the Proposers whose proposals were determined to be the most advantageous pursuant to the best value method.
- 1.1.2 Pursuant to the Request for Proposal, the Proposers acknowledged and agreed that by signing their proposal, the District chooses to reserve for itself the right to discuss and negotiate a design build contract with the Proposers to determine which proposal is most advantageous to the District would be awarded the contract.
- 1.1.3 Upon reserving this right, District is required under California Education Code section 17250.25(a)(2)(C)(v) to provide the rules and procedures it shall observe to ensure that any discussions or negotiations to determine the most advantageous proposal are conducted in a fair and impartial manner.

1.2 RULES AND PROCEDURES

- 1.2.1 Preliminary Completeness Review. As part of the preliminary completeness review process the District may, in its sole discretion, discuss any apparently patently defective or non-responsive Proposal with the submitting Proposer to clarify or correct any errors by the District in reviewing the proposal, to request additional clarifying, instructive, advisory, or corrective information, and to otherwise determine whether a defect may be waived as inconsequential.
- 1.2.2. Technical Review. During the detailed technical review of Proposers' proposals the District may, in its sole discretion, submit written and/or oral questions to the Proposers regarding their proposals. Proposers must answer the District's questions in writing. The technical review question and answer process is not to be treated as an opportunity for Proposers to change or supplement their proposals; it is intended to make clear, refine or otherwise explain elements of the Proposers' technical proposals.
- 1.2.3. Technical Review Presentations. Should the District elect to require Proposers to make detailed technical presentations regarding the essential elements of their Proposals, on one or more Evaluation Factor Categories, the District may, in its sole discretion, ask questions of the presenters regarding the presentation topic and/or its relationship to other elements of the Proposal.
- 1.2.4. Requests for Supplemental Information and Proposals. The District has reserved the right to request supplemental information and proposals from the Proposers. If the District elects, in its sole discretion, to make a request for supplemental material from any Proposer, the District will make a similar request of all Proposers, with equal time for response given to all Proposers.

- 1.2.5. Best and Final Offer. The District may, at its sole option, either accept a Proposer's proposal by award of a contract or enter into further discussions with one or more Proposers whose proposals are deemed to be reasonably susceptible of being considered for award. After discussions are concluded or as part of on-going contract negotiations, the District may, in its sole discretion, request a "Best and Final Offer" from one or more Proposers for consideration by the District.
- 1.2.6. Proposal Evaluations. The District will evaluate responsive Proposers' written proposals and assign each proposal a score pursuant to the scoring criteria described in the Request for Proposal. If there is any conflict between these Rules and the Request for Proposals, the Request for Proposals shall prevail. Special attention should be noted that the following minimum factors collectively represent at least fifty percent (50%) of the total weight of consideration given to all criteria factors in this RFP. The proposals will be ranked from lowest to highest score based on the District's evaluation of all criteria.
- 1.2.7. Evaluation Panel(s). The District will assemble one or more Evaluation Panels to evaluate the technical components of the Proposals. Evaluation Panels may be composed of members of the Project's construction management team, District's designated contract negotiator(s), specialists from the District's Risk Management Department, the District's Legal Office or authorized Special Counsel to the District, and other qualified individuals whose participation the District determines is necessary or appropriate.
- 1.2.8. Interview/Presentation Panel. The District will assemble an Interview/Presentation Panel, whose members will be similar to that of the Evaluation Panel(s) and who will score the Proposers presentations of their Proposals. Interview/Presentation Panel members will not know the initial score or rankings of the proposals assigned by the Evaluation Panel(s); if such knowledge comes to them, they will be replaced on the panel by a person of equivalent or higher level. The Interview/Presentation Panel will meet separately with each Proposer for the presentation of their proposal. Each Proposer will be asked to give a short proposal overview. To the maximum extent practical, each Proposer will address the major concerns of the Interview/Presentation Panel, and should be prepared to answer any questions that may arise as a result of the presentation. The Proposers will be chosen by lot to determine the order of presentations. Proposers will bring no more than six (6) representatives to the panel. Proposers representatives will be comprised of the team as noted in the DBE proposal only. No management nor business developing personnel allowed on the presentation team. Proposer's representatives may make a visual presentation; they may bring copies of their proposal.
- 1.2.9. Interview/Presentation Panel Scoring. Upon completion of each interview/presentation, each member of the Evaluation Panel will separately and confidentially score each Proposer on all criteria. The District will receive the panel member's scores, and combine them with the Proposers' scores for all Evaluation Factor Categories to come to a total score. The proposals will be re-ordered, if necessary, from lowest to highest. Upon re-ordering, the Proposers with the two highest scores will be contacted, and negotiations may commence to determine which proposal is the most advantageous to the District. If there is a tie between the 2nd and 3rd proposals, then negotiations will commence by and among the top three proposals and the District.

1.2.10. Contract Negotiations. The District will assemble a Contract Negotiation Team to engage the Proposer with the highest ranked proposal. The District may, in its sole discretion, conduct concurrent negotiations with the Proposer having the second highest ranked proposal. Upon successful conclusion of negotiations, the District will notify the Proposer having the proposal that is the most advantageous to the District.

1.3. CONE OF SILENCE.

1.3.1 "Cone of Silence" means a prohibition on any communication, oral or written, regarding particular Requests for Proposals (RFP), bids, proposals, contract negotiations, or other competitive solicitations between:

1.3.1.1 Any person who seeks an award of the Project from the District, including a Proposer or Proposer's representative, and

1.3.1.2 Any person appointed to evaluate or recommend selection in such procurement process.

1.3.2 Notwithstanding the foregoing, the Cone of Silence shall not apply to communications with, among or between the Project Manager, Criteria Architect, Construction Manager, and District Special Counsel and their respective staff, or with designated staff who are not serving on an Evaluation Panel or the Interview/Presentation Panel, to obtain clarification or information concerning the subject solicitation. Further, nothing herein shall prohibit District employees or representatives from communicating with each other. For purposes of this section, "Proposer's representative" means an employee, partner, officer, or director of a Proposer, or consultant, lobbyist, or actual or potential subcontractor or sub-consultant of a Proposer.

1.3.3 A Cone of Silence applies to this procurement as of the date this section is issued conformed for release. The Cone of Silence shall terminate at the time the SFUSD Board of Education votes to award or approve a contract, to reject all bids or responses, or otherwise take action that ends the solicitation.

1.3.4 Nothing contained herein shall prohibit any prequalified Proposer or any Proposer's representative:

1.3.4.1 from making public presentations at duly noticed pre-bid conferences or before duly noticed Evaluation Panel and/or Interview/Presentation Panel meetings;

1.3.4.2 from engaging in contract negotiations with the District;

1.3.4.3 from making a public presentation to the Board of Trustees during any duly noticed public meeting; or

1.3.4.4 from communicating in writing with any District employee or official for purposes of seeking clarification or additional information, subject to the provisions of the applicable RFP, or bid documents.

- 1.3.5 Nothing contained herein shall prohibit the Project Manager or other respective staff from initiating contact with a prequalified Proposer or Proposer's representative and subsequent communications related thereto for the purpose of obtaining further information regarding the RFP, bid, or competitive solicitation or as otherwise permitted by this Section. For purposes of this Section and when not otherwise precluded by the operation of this Section from doing so, the Project Manager or designee shall accept communications from prequalified Proposers or Proposer's representatives while a Cone of Silence is applicable to this competitive solicitation. Such contact shall be in writing and shall be provided to the members of the applicable evaluation, including any response thereto.
- 1.3.6 The District's Legal Office shall be informed of any person who is alleged to have violated the requirements of this Section. In each such instance, an investigation may be performed and the results of each investigation including a determination of violation, if any, shall be compiled in a report.
- 1.3.6.1 If there is a determination of violation, the District reserves the right to reprimand, penalize in the form of lower ranking or points, or entirely disqualify the Proposer who committed the violation from further consideration for the pending competitive solicitation.
- 1.3.6.2 A copy of the report, including a determination of violation, if any, and notice of the penalty imposed as provided for in this Section, if any, shall be immediately furnished or mailed to the Proposer or person who has been investigated.

END OF SECTION

EXISTING SITE CONDITIONS

1. This document sets forth the terms and conditions under which a Proposer may review, study, use or rely upon geotechnical data for, or areas near, the Project site (the "Site"), and existing conditions information concerning existing conditions at the Site. This document, the available geotechnical data, and the supplied existing conditions information are not Contract Documents.
2. **REPORTS AND INFORMATION.**
 - 2.1 District, its consultants and prior contractors have collected documents that provide a general description of the Site and conditions of the Work. These documents may consist of geotechnical reports near and around the Site, contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding Underground Facilities. These reports, documents and other information are not part of the Contract Documents.
 - 2.2 Proposers must inspect all available geotechnical reports and all information regarding existing conditions provided by the District.
 - 2.3 The following reports and information regarding existing conditions and Underground Facilities at or contiguous to the Site are included with this RFP as reference documents: Refer to RFP document and District registry,
 - 2.4 The reports, documents, and information described herein are not part of the Contract Documents. However, for Proposer's convenience, copies of the documents have been provided with the Project Manual and Criteria Documents.
3. **USE OF INFORMATION ON EXISTING CONDITIONS.**
 - 3.1 Above-Ground Existing Conditions. Under no circumstances shall District be deemed to make a warranty or representation of visible existing above-ground conditions, as-built conditions, or other above-ground actual conditions verifiable by reasonable independent investigation. These conditions are verifiable by the Proposer by the performance of its own independent investigation, which the Proposer must perform prior to submitting a Proposal. The Proposer must not rely on the information supplied by District regarding existing above-ground conditions. By submitting a Proposal, Proposer represents and agrees it is not relying on any information regarding existing above-ground conditions supplied by District to the extent such conditions are verifiable by reasonable independent investigation.
 - 3.2 Underground Facilities. Information supplied regarding existing Underground Facilities at or contiguous to the Site is based on information furnished to District by others (e.g., the owners or builders of such Underground Facilities or others). For those Underground Facilities that are owned by District, District will be responsible for the accuracy of information regarding Underground Facilities and for any conditions that materially differ from those indicated in the information provided by the District, provided that Proposer has conducted an independent review of the information provided by the District and discrepancies were not apparent. Proposer is responsible for understanding and interpreting all information on Underground Facilities other than those owned by District and

District agrees that Proposer is not responsible for the accuracy of such information or reports. In reviewing any information regarding Underground Facilities, Proposer is responsible for making all reasonable interpretations and drawing all reasonable conclusions from that information but shall be solely responsible for any unreasonable interpretations or conclusions drawn therefrom. Compensation to the Design Builder for unknown differing site conditions shall be allowed as is provided for in the Contract Documents.

4. **LIMITED RELIANCE PERMITTED ON CERTAIN INFORMATION.**

- 4.1 Geotechnical Data. By submitting a Proposal, Proposer represents and agrees that in submitting its Proposal, it is not relying on any geotechnical data supplied by District, except as specifically set forth herein.
- 4.2 The Proposer may rely upon the accuracy of the “technical data” contained in the geotechnical reports and drawings identified above, but only insofar as it relates to subsurface conditions and only if Proposer has conducted a thorough review of such technical data and discrepancies were not apparent. The term “technical data” in the referenced reports and drawings shall be limited as follows:
 - 4.2.1 The term “technical data” shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration.
 - 4.2.2 The term “technical data” does not include, and the Proposer may not rely upon, any other data, interpretations, opinions, or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.
 - 4.2.3 The term “technical data” shall not include the location of Underground Facilities.
 - 4.2.4 The Proposer may not rely on the completeness of reports and drawings for design or construction. The Proposer may rely upon the general accuracy of the “technical data” contained in such reports or drawings.
 - 4.2.5 The Proposer is responsible for making reasonable interpretations of technical data and reports. The Proposer is solely responsible for any unreasonable interpretation or conclusion drawn from any “technical data” or any other data, interpretations, opinions or information contained in supplied geotechnical data. However, compensation for unknown differing site conditions shall be allowed as is provided for in the Contract Documents.

5. **INVESTIGATIONS.**

- 5.1 Before submitting a Proposal, each Proposer shall conduct its own visual inspection of the Site and will be responsible for performing its own Geotechnical Investigation and report all other investigations that Proposer deems are necessary to make its Proposal and for performing and furnishing Work in accordance with the time, price and other terms and conditions of the Contract Documents. Proposer may rely upon the geotechnical and existing conditions data provided by the District only to the extent the Proposer’s geotechnical engineer

deems appropriate in the exercise of its professional judgment. The design shall not be developed based solely upon the information provided by the District.

Each Proposer will be responsible for obtaining and reviewing such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site or otherwise, as deemed necessary by its geotechnical engineer, that may affect structural design, cost, progress, performance or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by the Proposer and safety precautions and programs incident thereto, and for performing reasonable on-site inspections for visible conditions, which the Proposer deems necessary to make its Bid and for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

Each Proposer shall conduct its own Hazardous Material Survey the Proposer deems necessary for the performance of its work.

6. ACCESS TO SITE.

6.1 Subject to District approval and reasonable scheduling, District will provide each Proposer access to the Site to conduct such examinations and investigations as each Proposer deems necessary for submission of its Proposal.

7. Section 01 88 20 (Miscellaneous Hazardous Materials Performance Requirements) describes hazardous material information included with the Request for Proposal Documents and use of data therein.

8. REPORTS AND INFORMATION.

8.1 The District, its consultants, Contractors, and agents have prepared and are preparing documents providing a general description of the Project Site and identifying locations of known or suspected hazardous materials. The existing documents consist of surveys included in the Project Manual. Additional documents may be provided to Proposers in an Addendum.

8.2 The Project Site consists of the following:

The Work generally consists of the to construct the Title IX Locker Room renovation at Laney College for the Peralta Community College District, to be located at 900 Fallon Street, Oakland, CA 94607. The building was constructed circa 1968. The proposed modernization includes the same 21,800 SF below grade locker room space but upgrading its entirety, including a new architectural layout of the rooms.

The renovated building will promote interaction among the students, and the modernization of existing space will celebrate women and female athletes of Laney college, simplify access, reduce travel distance, improve security, support a diverse community, achieve Title IX compliance, and improve financial efficiency. The scope of work includes a new MEP system, HVAC system, fire protection system installation, and installation of new furniture, fixtures and equipment.

9. USE OF DATA

9.1 Data regarding the locations and types of hazardous materials was obtained for use of District and its consultants, Contractors, agents, and tenants for planning and design and are not part of the Contract Documents. Proposer may rely on this information for its accuracy regarding the locations of potentially hazardous materials related to the Work. The provisions of Section 4 (Limited Reliance Permitted on Certain Information) apply to any hazardous materials information. Compensation to the Design Builder for unknown differing site conditions, including conditions that differ materially from those indicated in the reports or surveys referred to herein, shall be allowed as provided in the Contract Documents.

9.2 District does not warrant and makes no representation regarding the accuracy, completeness or thoroughness of any information verifiable by visual inspection. By submitting a Proposal, Proposer represents and agrees that in submitting a Proposal it has reviewed the data regarding existing conditions supplied by District concerning the general location of potentially hazardous materials.

10. INVESTIGATIONS.

10.1 Before submitting a Proposal, each Proposer shall conduct its own visual inspection of the Site, and with the District's consent, shall perform other investigations that Proposer deems are necessary to make its Proposal and for performing and furnishing Work in accordance with the time, price and other terms and conditions of the Contract Documents.

END OF DOCUMENT

SECTION 00 35 00

LABOR COMPLIANCE PROGRAM

**SECTION I
PUBLIC WORKS SUBJECT TO PREVAILING WAGE LAWS**

State prevailing wage rates apply to all public works contracts as set forth in Labor Code Sections 1720 *et seq.*, and include, but are not limited to, such types of work as construction, alteration, demolition, repair, or maintenance work. The Division of Labor Statistics and Research (DLSR) predetermines the appropriate prevailing wage rates for particular construction trades and crafts by county.

1 A. Types of Contracts to Which Prevailing Wage Requirements Apply

As provided in California Labor Code sections 17250.30(d)(2) and (d)(3), the regulations adopted by the Department of Industrial Relations pursuant to subdivision (g) of Section 1771.5 of the Labor Code apply such that the District shall reimburse the department for its reasonable and directly related costs of performing prevailing wage monitoring and enforcement on public works projects pursuant to rates established by the department as set forth in subdivision (h) of Section 1771,5 of the Labor Code. In lieu of reimbursing the Department of Industrial Relations for its reasonable and directly related costs of performing, monitoring, and enforcement on public works projects, the District will continue operating its existing previously approved labor compliance program to monitor and enforce prevailing wage requirements on this project because the District entered into a collective bargaining agreement that binds all of the contractors performing work on the project and that includes a mechanism for resolving disputes about the payment of wages.

SECTION II

JOB START MEETING

After the District awards the contract, and prior to the commencement of the work, a Job Start meeting (Pre-Job conference) may be conducted by the Labor Compliance Officer (LCO) with the contractor and those subcontractors listed in its bid documents.

At that meeting, the LCO will discuss the federal and state labor law requirements applicable to the contract, including prevailing wage requirements, the respective record keeping responsibilities, the requirement for the submittal of certified payroll records to the District, and the prohibition against discrimination in employment.

The LCO will provide the contractor and each subcontractor with a Checklist of Labor Law Requirements and will discuss in detail the following checklist items:

1. The contractor's duty to pay prevailing wages (Labor Code Section 1770 et seq.);
2. The contractor's duty to employ registered apprentices (Labor Code Section 1777.5);
3. The penalties for failure to pay prevailing wages and to employ apprentices, including forfeitures and debarment (Labor Code Sections 1775, 1777.7, and 1813);
4. The requirement to maintain and submit copies of certified payroll records to the District, on a weekly basis, as required (Labor Code Section 1776), and penalties for failure to do so (Labor Code Section 1776(g)); the requirement includes and applies to all subcontractors performing work on the project even if their portion of the work is less than one-half of one percent (1/2 of 1%) of the total amount of the contract.
5. The prohibition against employment discrimination (Labor Code Sections 1735 and 1777.6; the Government Code; and Title VII of the Civil Rights Act of 1964, as amended);
6. The prohibition against taking or receiving a portion of an employee's wages (Labor Code Section 1778) (kickback);
7. The prohibition against accepting fees for registering any person for public works (Labor Code Section 1779) or for filing work orders on public works (Labor Code Section 1780);
8. The requirement to list all subcontractors that are performing one-half of one percent of the total amount of the contract (Public Contract Code Section 4100 et seq.);
9. The requirement to be properly licensed and to require all subcontractors to be properly licensed, and the penalty for employing workers while unlicensed (Labor Code Section 1021 and under California Contractors License Law, also, see Business and Professions Code Section 7000, et seq.);
10. The prohibition against unfair competition (Business and Professions Code Sections 17200-17208);
11. The requirement that the contractor and subcontractor be properly insured for Workers' Compensation (Labor Code Section 1861); and

12. The requirement that the contractor abide by the Occupational Safety and Health laws along with all regulations that apply to the project.

It will be the DBE's responsibility to provide copies of the LCP package to all listed subcontractors and to any substituted subcontractors.

SECTION III REVIEW OF CERTIFIED PAYROLL RECORDS

A. Certified Payroll Records Required

The DBE and each subcontractor shall maintain payrolls and basic records (timecards, canceled checks, cash receipts, trust fund forms, accounting ledgers, tax forms, superintendent and foreman daily logs, etc.) during the course of the work and shall preserve them for a period of three (3) years thereafter for all trades workers working on the project. Such records shall include the name, address, and social security number of each worker, his or her classification, a general description of the work each employee performed each day, the rate of pay (including rates of contributions for, or costs assumed to provide fringe benefits), daily and weekly number of hours worked, and actual wages paid.

1. Submittal of Certified Payroll Records

The DBE and each subcontractor shall maintain weekly certified payroll records for submittal to the Peralta Community College District LCO as required. The DBE shall be responsible for the submittal of payroll records of all its subcontractors. All certified payroll records shall be accompanied by a statement of compliance signed by the DBE or each subcontractor indicating that the payroll records are correct and complete, that the wage rates contained therein are not less than those determined by the Director of the Department of Industrial Relations, and that the classifications set forth for each employee conform with the work performed.

Time cards, front and back copies of cancelled checks, daily logs, employee sign-in sheets and/or any other record maintained for the purposes of reporting payroll may be requested by the Labor Compliance Officer at any time and shall be provided within 10 days following the receipt of the request.

2. Full Accountability

Each individual, laborer or craftsperson working on the project must appear on the payroll. The basic concept is that the employer who pays the trades worker must report that individual on its payroll. This includes individuals working as apprentices in an apprenticeable trade. Owner-operators are to be reported by the contractor employing them, rental equipment operators are to be reported by the rental company paying the workers' wages.

Sole owners and partners who work on a contract must also submit a certified payroll record listing the days and hours worked, and the trade classification descriptive of the work actually done.

The DBE shall provide the records required under this section to the District within five (5) days of each payday, and make them available for inspection by the Department of Industrial Relations, and shall permit representatives of each to interview trades workers during working hours on the project site.

3. Responsibility for Subcontractors

DBE shall be responsible for ensuring adherence to labor standards provisions by its subcontractors. Moreover, DBE is responsible for Labor Code violations of its subcontractors in accordance with Labor Code section 1775.

4. Payment to Employees

Employees must be paid unconditionally, and not less often than once each week, the full amounts, that are due and payable for the period covered by the particular payday. Thus, an employer must establish a fixed workweek (Sunday through Saturday, for example) and an established payday (such as every Friday or the preceding day should such payday fall on a holiday). On each and every payday, each worker must be paid all sums due as of the end of the preceding workweek and must be provided with an itemized wage statement.

If an individual is called a subcontractor, whereas, in fact, he/she is merely a journey level mechanic supplying only his/her labor, such an individual would not be deemed a bona fide subcontractor and must be reported on the payroll of the DBE as a trades worker. Moreover, any person who does not hold a valid contractor's license cannot be a subcontractor, and anyone hired by that person is the worker or employee of the general contractor for purposes of prevailing wage requirements, certified payroll reporting and workers' compensation laws.

The worker's rate for straight time hours must equal or exceed the rate specified in the contract by reference to the "Prevailing Wage Determinations" for the class of work actually performed. Any work performed on Saturday, Sunday, and/or on a holiday, or portion thereof, must be paid the prevailing rate established for those days regardless of the fixed workweek. The hourly rate for hours worked in excess of 8 hours in a day and 40 hours in a workweek shall be premium pay. All work performed on Saturday, Sunday and holidays shall be paid pursuant to the Prevailing Wage determination.

B. Apprentices

Apprentices shall be permitted to work as such only when they are registered, individually, under a bona fide apprenticeship program registered and approved by the State Division of Apprenticeship Standards. The allowable ratio of apprentices to journeypersons in any craft/classification shall not be greater than the ratio permitted to the DBE as to its entire workforce under the registered program.

Any worker listed on a payroll at an apprentice wage rate who is not registered shall be paid the journey level wage rate determined by the Department of Industrial Relations for the classification of the work he/she actually performed. Pre-apprentice trainees, trainees in non-apprenticeable crafts, and others who are not duly registered will not be permitted on the project unless they are paid full prevailing wage rates as journeypersons.

Compliance with California Labor Code Section 1777.5 requires all public works contractors and subcontractors to:

1. Submit contract award information to the apprenticeship committee for each apprenticeable

craft or trade in the area of the Project;

2. Request dispatch of apprentices from the applicable Apprenticeship Program(s) and employ apprentices on public works projects in a ratio to journeypersons which in no case shall be less than one (1) hour of apprentice work to each five (5) hours of journeyperson work; and
3. Contribute to the applicable Apprenticeship Program(s) or the California Apprenticeship Council in the amount identified in the prevailing wage rate publication for journeypersons and apprentices. If payments are not made to an Apprenticeship Program, they shall be made to the California Apprenticeship Council, Post Office Box 420603, San Francisco, CA 94142.

If the DBE is registered to train apprentices, it shall furnish written evidence of the registration (i.e., Apprenticeship Agreement or Statement of Registration) of its training program and apprentices, as well as the ratios allowed and the wage rates required to be paid thereunder for the area of construction, prior to using any apprentices in the contract work. It should be noted that a prior approval for a separate project does not confirm approval to train on any project. The DBE/subcontractor must check with the applicable Joint Apprenticeship Committee to verify status.

1 C. Audit of Certified Payroll Records

Audits shall be conducted by the LCO, and shall also be conducted at the request of the Labor Commissioner to determine whether all trades workers on project sites have been paid according to the prevailing wage rates.

END OF SECTION

00 45 10

CONTRACT DOCUMENTS

For the following design-build project:

[Name Of] Project
[Address]

By and between

Contra Costa Community College District

And

[Design/Builder]
[Address]

Dated as of _____, 20__

PAYMENT BOND
Design/Builder's Labor & Material Bond
(100% of Contract Price)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Contra Costa Community College District ("District") and [Design/Builder] ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

[Name Of] Project

("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to one hundred percent (100%) of the Contract price, to secure the claims to which reference is made in sections 9000 through 9510 and 9550 through 9566 of the Civil Code, and division 2, part 7, of the Labor Code.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ Dollars (\$_____), lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the Principal or any of its subcontractors, or their heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, 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 required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal or any of his or its subcontractors of any tier under Section 13020 of the Unemployment Insurance Code with respect to such work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under section 9100 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of Contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20__.

Principal

Surety

By

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone No. of California Agent of Surety

Design/Builder must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

PERFORMANCE BOND
(100% of Contract Price)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Contra Costa Community College District ("District") and [Design/Builder] ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

[Name Of] Project

("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, the Principal and _____
_____ ("Surety") are held
and firmly bound unto the Board of the District in the penal sum of

_____ Dollars (\$ _____), lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents, to:

- Promptly perform all the work required to complete the Project; and
- Pay to the District all damages the District incurs as a result of the Principal's failure to perform all the Work required to complete the Project.

Or, at the District's sole discretion and election, the Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the District of the lowest responsible bidder, arrange for a contract between such bidder and the District and make available as Work progresses sufficient funds to pay the cost of completion less the "balance of the Contract Price," and to pay and perform all obligations of Principals 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. District shall not be required or obligated to accept a tender of a completion contractor from the Surety for any or no reason.

The condition of the obligation is such that, if the above bound Principal, its 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 the Contract and any alteration thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship,

and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

Surety expressly agrees that the District may reject any contractor or subcontractor proposed by Surety to fulfill its obligations in the event of default by the Principal. Surety shall not utilize Principal in completing the Work nor shall Surety accept a Bid from Principal for completion of the Work if the District declares the Principal to be in default and notifies Surety of the District's objection to Principal's further participation in the completion of the Work.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety's obligation shall continue if Design/Builder shall fail to make full, complete, and satisfactory repair and replacements and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Design/Builder remains. Nothing herein shall limit the District's rights or the Design/Builder's or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond. The Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond by any overpayment or underpayment by the District that is based upon estimates approved by the Architect. The Surety does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20__.

Principal

Surety

By

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone No. of California Agent of Surety

Design/Builder must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

REGISTERED SUBCONTRACTORS LIST
(Labor Code Section 1771.1)

PROJECT: **[Name Of] Project**

Date Submitted (for Updates): _____

Design/Builder acknowledges and agrees that it must clearly set forth below the name and Department of Industrial Relations (DIR) registration number of each subcontractor **for all tiers** who will perform work or labor or render service to Design/Builder or its subcontractors in or about the construction of the Work **at least two (2) weeks before the subcontractor is scheduled to perform work**. This document is to be updated as all tiers of subcontractors are identified.

Design/Builder acknowledges and agrees that, if Design/Builder fails to list as to any subcontractor of any tier who performs any portion of Work, the Contract is subject is subject to cancellation and the Design/Builder will be subjected to penalty under applicable law.

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

**HAZARDOUS MATERIALS
PROCEDURES & REQUIREMENTS**

1. Summary

This document includes information applicable to hazardous materials and hazardous waste abatement.

2. Notice of Hazardous Waste or Materials

- a. Design/Builder shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following materials are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:
 - (1) Material that Design/Builder believes may be a material that is hazardous waste or hazardous material, as defined in section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law;
 - (2) Other material that may present a substantial danger to persons or property exposed thereto in connection with Work at the site.
- b. Design/Builder's written notice shall indicate whether the hazardous waste or material was shown or indicated in the Contract Documents to be within the scope of Work, and whether the materials were brought to the site by Design/Builder, its Subcontractors, suppliers, or anyone else for whom Design/Builder is responsible. As used in this section the term "hazardous materials" shall include, without limitation, asbestos, lead, Polychlorinated biphenyl (PCB), petroleum and related hydrocarbons, and radioactive material.
- c. In response to Design/Builder's written notice, the District shall investigate the identified conditions.
- d. If the District determines that conditions do not involve hazardous materials or that no change in terms of Contract is justified, the District shall so notify Design/Builder in writing, stating reasons. If the District and Design/Builder cannot agree on whether conditions justify an adjustment in Contract Price or Contract Time, or on the extent of any adjustment, Design/Builder shall proceed with the Work as directed by the District.
- e. If after receipt of notice from the District, Design/Builder does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume Work under special conditions, then District may order such portion of Work that is in connection with such hazardous condition or such affected area to be deleted from the Work, or performed by others, or District may invoke its rights to terminate the Contract in whole or in part. District will determine entitlement to or the amount or extent of an adjustment, if any, in

Contract Price or Contract Time as a result of deleting such portion of Work, or performing the Work by others.

- f. If Design/Builder stops Work in connection with any hazardous condition and in any area affected thereby, Design/Builder shall immediately redeploy its workers, equipment, and materials, as necessary, to other portions of the Work to minimize delay and disruption.

3. **Additional Warranties and Representations**

- a. Design/Builder represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training, and ability to comply fully with all applicable laws and contractual requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to address adequately the actual or potential dangers of Contract performance).
- b. Design/Builder represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.
- c. Design/Builder represents and warrants that it has studied carefully all requirements of the Specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract, and prior to submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Design/Builder accepts the risk that any specified procedure will result in a completed Project in full compliance with the Contract Documents.

4. **Monitoring and Testing**

- a. District reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, Work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor Contract requirements of safe and statutorily compliant work methods and (where applicable) safe re-entry level air standards under state and federal law upon completion of the job, and compliance of the work with periodic and final inspection by public and quasi-public entities having jurisdiction.
- b. Design/Builder acknowledges that District has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, that District shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of

the Work by Design/Builder. In the event District elects to perform these activities and tests, Design/Builder shall afford District ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Design/Builder will include the potential impact of these activities or tests by District in the Contract Price and the Scheduled Completion Date.

- c. Notwithstanding District's rights granted by this paragraph, Design/Builder may retain its own industrial hygiene consultant at Design/Builder's own expense and may collect samples and may perform tests including, but not limited to, pre-abatement, during abatement, and post-abatement personal air monitoring, and District reserves the right to request documentation of all such activities and tests performed by Design/Builder relating to the Work and Design/Builder shall immediately provide that documentation upon request.

5. **Compliance with Laws**

- a. Design/Builder shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the applicable law, and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.
- b. Design/Builder represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work relating to:
 - (1) The protection of the public health, welfare and environment;
 - (2) Storage, handling, or use of asbestos, PCB, lead, petroleum based products, radioactive material, or other hazardous materials;
 - (3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, radioactive material, or hazardous waste materials or other waste materials of any kind; and
 - (4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

6. **Disposal**

- a. Design/Builder has the sole responsibility for determining current waste storage, handling, transportation, and disposal regulations for the job Site and for each waste disposal facility. Design/Builder must comply fully at its sole cost and expense with these regulations and any applicable law. District may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.

- b. Design/Builder shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate "Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.
- c. Design/Builder shall provide District with the name and address of each waste disposal facility prior to any disposal, and District shall have the express right to reject any proposed disposal facility. Design/Builder shall not use any disposal facility to which District has objected. Design/Builder shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the District.

7. Permits

- a. Before performing any of the Work, and at such other times as may be required by applicable law, Design/Builder shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Design/Builder shall submit evidence satisfactory to District that it and any disposal facility:
 - (1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law; and
 - (2) are in compliance with all such permits, approvals and the regulations.

For example, before commencing any work in connection with the Work involving asbestos-containing materials, or PCBs, or other hazardous materials subject to regulation, Design/Builder agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to District. Design/Builder shall not conduct any Work involving asbestos-containing materials or PCBs unless Design/Builder has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds that are required by governmental or quasi-governmental authorities, and all fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities expenses necessary for the prosecution of the Work, shall be procured and paid for by Design/Builder. Design/Builder shall give all notices and comply with the all applicable laws bearing on the conduct of the Work as drawn and specified. If Design/Builder observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Design/Builder performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

- b. In the case of any permits or notices held in District's name or of necessity to be made in District's name, District shall cooperate with Design/Builder in securing the permit or giving the notice, but the Design/Builder shall prepare for District review and execution upon approval, all necessary applications, notices, and other materials.

8. Indemnification

To the fullest extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, a waste transporter, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. § 9601 *et seq.*).

9. Termination

District shall have an absolute right to terminate for default immediately without notice and without an opportunity to cure should Design/Builder knowingly or recklessly commit a material breach of the terms of the Contract Documents, or any applicable law, on any matter involving the exposure of persons or property to hazardous waste. However, if the breach of contract exposing persons or property to hazardous waste is due solely to an ordinary, unintentional, and non-reckless failure to exercise reasonable care, then the procedures for termination for cause shall apply without modification.

END OF DOCUMENT

WORKERS' COMPENSATION CERTIFICATION

Labor Code section 3700, in relevant part, provides:

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

- a. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state; and/or
- b. By securing from the Director of Industrial Relations a certificate of consent to self-insure, 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 employees.

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

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

(In accordance with Labor Code sections 1860 and 1861, the above certificate must be signed and filed with the awarding body prior to performing any Work under this Contract.)

END OF DOCUMENT

**PREVAILING WAGE AND
RELATED LABOR REQUIREMENTS CERTIFICATION**

I hereby certify that I will conform to the State of California Public Works Contract requirements regarding prevailing wages, benefits, on-site audits with 48-hours' notice, payroll records, and apprentice and trainee employment requirements, for all Work on the above Project including, without limitation, labor compliance monitoring and enforcement by the Department of Industrial Relations.

I hereby certify that I will also conform to the Federal Labor Standards Provisions regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon and Related Act requirements, Contract Work Hours and Safety Standards Act requirements, and any and all other applicable requirements for federal funding for all Work on the above Project.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

**DISABLED VETERAN BUSINESS
ENTERPRISE PARTICIPATION CERTIFICATION**

GENERAL INSTRUCTIONS

Pursuant to Education Code section 71028 and Public Contract Code section 10115, the District has a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended each year on District projects. Therefore, the Design/Builder awarded the Contract must submit this document to the District with its executed Agreement, identifying the steps Design/Builder took to solicit DVBE participation in conjunction with this Contract.

PART I – Method of Compliance with DVBE Participation Goals. Check the appropriate box to indicate your method of committing the contract dollar amount.

YOUR BUSINESS ENTERPRISE IS:	AND YOU WILL	AND YOU WILL
<input type="checkbox"/> Disabled veteran owned and your forces will perform at least 3% of this Contract	Include a copy of your DVBE letter from Office of Small Business and Disabled Veterans Business Enterprise Services ("OSB")*	Complete Part 1 of this form and the Certification
<input type="checkbox"/> Disabled veteran owned but is unable to perform 3% of this Contract with your forces	Use DVBE subcontractors /suppliers to bring the Contract participation to at least 3%	Include a copy of each DVBE's letter from OSB (including yours, if applicable), and complete Part 1 of this form and the certification
<input type="checkbox"/> NOT disabled veteran owned	Use DVBE subcontractors /suppliers for at least 3% of this Contract	
<input type="checkbox"/> Unable to meet the required participation goals after good faith efforts	Make good faith efforts, including contacts, advertisement and DVBE solicitation	Complete all of this Certification form

* A DVBE letter from OSB is obtained from the participating DVBE.

You must complete the following table to show the dollar amount of DVBE participation:

	TOTAL CONTRACT PRICE
A. Prime Bidder, if DVBE (own participation)	\$
DVBE Subcontractor or Supplier	
Subtotal (A & B)	
Non-DVBE	
Total Bid	

PART II – Contacts. To identify DVBE subcontractors/suppliers for participation in your contract, you must contact each of the following categories. You should contact several DVBE organizations.

CATEGORY	TELEPHONE NUMBER	DATE CONTACTED	PERSON CONTACTED
The District, if any			*
OSB, which publishes a list of DVBE's; Internet Address: http://www.dgs.ca.gov/osbcr	(916) 323-5478 (916) 322-5060		*
DVBE Organization (List)			*

*Write "recorded message" in this column, if applicable.

PART III – Advertisement. You must advertise for DVBE participation in both a trade and focus paper. List the advertisement you place to solicit DVBE participation. Advertisements should be published at least fourteen (14) days prior to bid/proposal opening; if you cannot advertise fourteen (14) days prior, advertisements should be published as soon as possible. Advertisements must include that your firm is seeking DVBE participation, the project name and location, and you firm’s name, your contact person, and telephone number. Attach copies of advertisements to this form.

FOCUS/TRADE PAPER NAME	CHECK ONE		DATE OF ADVERTISEMENT
	TRADE	FOCUS	

PART IV – DVBE Solicitations. List DVBE subcontractors/suppliers that were invited to bid. Use the following instructions to complete the remainder of this section (read the three columns as a sentence from left to right). If you need additional space to list DVBE solicitations, please use a separate page and attach to this form.

IF THE DVBE.....	THEN.....	AND.....		
was selected to participate	Check "yes" in the "SELECTED" column	include a copy of their DVBE letter(s) from OSB		
was NOT selected to participate	Check "NO" in the "SELECTED" column	state why in the "REASON NOT SELECTED" column		
did not respond to your solicitation	Check the "NO RESPONSE" column.			
DISABLED VETERANS BUSINESS ENTERPRISES CONTACTED	SELECTED		REASON NOT SELECTED	NO RESPONSE
	YES	NO		

A copy of this form must be retained by you and may be subject to a future audit.

CERTIFICATION

I, _____ certify that I am the Design/Builder's _____ and that I have made a diligent effort to ascertain the facts with regard to the representations made herein. In making this certification, I am aware of section 12650 et seq. of the Government Code providing for the imposition of treble damages for making false claims.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DRUG-FREE WORKPLACE CERTIFICATION

This Drug-Free Workplace Certification form is required from the successful Bidder pursuant to Government Code section 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 or grant for the procurement of any property or service 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 or grant awarded by a state agency may be subject to suspension of payments or termination of the contract or grant, and the contractor or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

The District is not a "state agency" as defined in the applicable section(s) of the Government Code, but the District is a local agency and public school district under California law and requires all contractors on District projects to comply with the provisions and requirements of Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990.

Design/Builder 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 or grant be given a copy of the statement required above, and that, as a condition of employment on the contract or grant, 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 termination, suspension of payments, 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 the aforementioned Act.

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.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

TOBACCO-FREE ENVIRONMENT CERTIFICATION

Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq., Business and Professions Code section 22950 et seq., and District Board policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on District property. The prohibition on smoking includes the use of any electronic smoking device that creates an aerosol or vapor, in any manner or in any form, and the use of any oral smoking device for the purpose of circumventing the prohibition of tobacco smoking. Further, Health & Safety Code section 11362.3 prohibits the smoking or use of cannabis or cannabis products in any place where smoking tobacco is prohibited.

I acknowledge that I am aware of the District’s policy regarding tobacco-free environments at District sites, including the Project site and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm’s employees, agents, subcontractors, or my firm’s subcontractors’ employees or agents, to use tobacco and/or smoke on the Project site.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

HAZARDOUS MATERIALS CERTIFICATION

Design/Builder hereby certifies that no asbestos, or asbestos-containing materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations ("New Hazardous Material"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Design/Builder's work on the Project for District.

Design/Builder further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (0.1%) asbestos shall be defined as asbestos-containing material.

Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Design/Builder if the material is found to be New Hazardous Material.

All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing New Hazardous Material will be immediately rejected and this Work will be removed at Design/Builder's expense at no additional cost to the District.

Design/Builder has read and understood the document titled Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

LEAD-BASED MATERIALS CERTIFICATION

This certification provides notice to the Design/Builder that:

- (1) Design/Builder's work may disturb lead-containing building materials.
- (2) Design/Builder shall notify the District if any work may result in the disturbance of lead-containing building materials.
- (3) Design/Builder shall comply with the Renovation, Repair and Painting Rule, if lead-based paint is disturbed in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors.

1. Lead as a Health Hazard

Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburse when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Design/Builder and its employees will be providing services for the District, and because the Design/Builder's work may disturb lead-containing building materials, DESIGN/BUILDER IS HEREBY NOTIFIED of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1978 are presumed to contain some lead-based paint until sampling proves otherwise.

2. Overview of California Law

Education Code section 32240 et seq. is known as the Lead-Safe Schools Protection Act. Under this act, the Department of Health Services is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, lead-based paint, lead plumbing, and solders, or other potential sources of lead contamination, shall not be utilized in the construction of any new school facility or the modernization or renovation of any existing school facility. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to those regulations. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. Regulated work includes, but is not limited to, the following:

- a. Demolition or salvage of structures where lead or materials containing lead are present;
- b. Removal or encapsulation of materials containing lead;
- c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- d. Installation of products containing lead;
- e. Lead contamination/emergency cleanup;
- f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- g. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Design/Builder, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532.1).

Design/Builder shall notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials shall be coordinated through the District. A signed copy of this Certification shall be on file prior to beginning Work on the Project, along with all current insurance certificates.

3. Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act

The EPA requires lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint. Pursuant to the Renovation, Repair and Painting Rule (RRP), renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with training by a EPA-accredited training provider, and fully and adequately complying with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The RRP requirements apply to all contractors who disturb lead-based paint in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

4. Design/Builder's Liability

If the Design/Builder fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Design/Builder will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Design/Builder to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Design/Builder to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Design/Builder shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Design/Builder.

THE DESIGN/BUILDER HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT IT:

1. HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY;
2. IS KNOWLEDGEABLE REGARDING AND WILL COMPLY WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL, OF LEAD.

THE UNDERSIGNED WARRANTS THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE DESIGN/BUILDER. THE DISTRICT MAY REQUIRE PROOF OF SUCH AUTHORITY.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

IMPORTED MATERIALS CERTIFICATION

This form shall be executed by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials ("Fill") to the Project Site and shall be provided to the District at least ten (10) days before delivery. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000 et seq. of the Public Resources Code ("CEQA"), and all requirements of section 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control.

Certification of: Delivery Firm/Transporter Supplier Manufacturer
 Wholesaler Broker Retailer
 Distributor Other _____

Type of Entity Corporation General Partnership
 Limited Partnership Limited Liability Company
 Sole Proprietorship Other _____

Name of firm ("Firm"): _____

Mailing address: _____

Addresses of branch office used for this Project: _____

If subsidiary, name and address of parent company: _____

By my signature below, I hereby certify that I am aware of section 25260 of the Health and Safety Code and the sections referenced therein regarding the definition of hazardous material. I further certify on behalf of the Firm that all soils, aggregates, or related materials provided, delivered, and/or supplied or that will be provided, delivered, and/or supplied by this Firm to the Project Site are free of any and all hazardous material as defined in section 25260 of the Health and Safety Code. I further certify that I am authorized to make this certification on behalf of the Firm.

Date: _____

Name of Firm: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

By my signature below, I hereby certify that, to the best of my knowledge, the contents of this disclosure are true, or are believed to be true. I further certify on behalf of the Firm that I am aware of section 3000 et seq. of the California Public Contract Code, and the sections referenced therein regarding the penalties for providing false information or failing to disclose a financial relationship in this disclosure. I further certify that I am authorized to make this certification on behalf of the Firm.

Date: _____

Name of Firm: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

SKILLED AND TRAINED WORKFORCE CERTIFICATION

The undersigned does hereby certify to the governing board of the District as follows:

That I am a representative of the Design/Builder currently performing work on the Project; that I am familiar with the facts herein certified; and that I am authorized and qualified to execute this certificate on behalf of Design/Builder.

That Design/Builder and its subcontractors at every tier will use a Skilled and Trained Workforce to perform all work on the Contract or Project that falls within an apprenticeable occupation in the building and construction trades in accordance with Public Contract Code section 2600 et seq.

“Apprenticeable occupation” means an occupation for which the Chief of the Division of Apprenticeship Standards of the Department of Industrial Relations (“Chief”) had approved an apprenticeship program pursuant to Section 3075 of the Labor Code before January 1, 2014.

“Skilled and Trained Workforce” means a workforce that meets all of the following conditions:

1. All of the workers are either skilled journeypersons or apprentices registered in an apprenticeship program approved by the Chief.
2. The percentage of either (A) skilled journeypersons employed by the Design/Builder or subcontractor to perform work on the Contract or Project who are graduates of an apprenticeship program for the applicable occupation, or (B) hours of work performed by skilled journeypersons employed by Design/Builder or subcontractor to perform work on the Contract or Project who are graduates of an apprenticeship program for the applicable occupation, is at least equal to the percentages set forth in the following chart for the applicable month:

APPLICABLE DATES	% REQUIREMENT	EXCLUDED OCCUPATIONS
1/1/2016 – 12/31/2017	At least 30%	Teamster – 0%.
1/1/2018 – 12/31/2018	At least 40%	Teamster – 0%.
1/1/2019 – 12/31/2019	At least 50%	Acoustical installer, bricklayer, carpenter, cement mason, drywall installer or lather, marble mason, finisher, or setter, modular furniture or systems installer, operating engineer, pile driver, plasterer, roofer or waterproofer, stone mason, surveyor, terrazzo worker or finisher, and tile layer, setter, or finisher. - At least 30% for each trade.
1/1/20____ – 12/31/20____	At least 60%	

3. For an apprenticeable occupation in which no apprenticeship program has been approved by the Chief before January 1, 1995, up to one-half of the above graduation percentage requirements set forth in the above chart may be satisfied by skilled journeypersons who commenced working in the apprenticeable occupation before the Chief's approval of an apprenticeship program for that occupation in the county in which the Project is located.
4. The contractor or subcontractor need not meet the apprenticeship graduation requirements if:
 - a. During a calendar month, the Design/Builder or subcontractor employs skilled journeypersons to perform fewer than 10 hours of work on the Contract or Project; or
 - b. The subcontractor was not a listed subcontractor under Public Contract Code section 4104 or a substitute for a listed subcontractor and the subcontract does not exceed one-half of 1 percent of the price of the prime contract.

That Design/Builder and its subcontractors will demonstrate its compliance with the Skilled and Trained Workforce requirements by either of the following methods (check what applies):

- Using the form attached hereto, provide monthly reports to the District from the Design/Builder and its subcontractors demonstrating that they are complying with the requirements of Public Contract Code section 2600 et seq., which shall be a public record under California Public Records Act, Government Code section 6250 et seq.; or
- Provide evidence that Design/Builder and its subcontractors have agreed to be bound by: (1) a project labor agreement entered into by the District that binds all contractors and all its subcontractors at every tier performing work on the Project to use a skilled and trained workforce; (2) the extension or renewal of a project labor agreement entered into by the District prior to January 1, 2017; or (3) a project labor agreement that binds all contractors and all its subcontractors at every tier performing work on the Project to use a skilled and trained workforce.

I hereby certify that I am aware of the provisions of section 17407.5 of the Education Code and sections 2600 through 2602 of the Public Contract Code and will comply with such provisions during the performance of the Work of this Contract and will bind all of my subcontractors at every tier, with the exception of the subcontractors identified in Public Contract Code section 2602, to comply with such provisions.

Date: _____

Name of Design/Builder: _____

Signature: _____

Print Name: _____

Title: _____

**SKILLED AND TRAINED WORKFORCE
MONTHLY REPORT
(COVER PAGE)**

NAME OF PROJECT: _____

NAME OF CONTRACTOR: _____

FOR THE MONTH OF: _____ 20__

The undersigned hereby certifies that all the workers employed by the above-referenced contractor performing work in an apprenticeable occupation in the building and construction trades on the Project are either skilled journeypersons or apprentices registered in an apprenticeship program approved by the Chief of the Division of Apprenticeship Standards of the Department of Industrial Relations.

The undersigned further certifies that the percentage of either (A) skilled journeypersons employed by the above-referenced contractor to perform work on the Project who are graduates of an apprenticeship program for the applicable occupation, or (B) hours of work performed by skilled journeypersons employed by the above-referenced contractor to perform work on the Project who are graduates of an apprenticeship program for the applicable occupation, is at least equal to the apprenticeship graduation percentage required by Public Contract Code section 2601 for the particular calendar month.

The undersigned has demonstrated compliance with the apprenticeship graduation percentage by completing the accompanying Worksheet(s). A true and correct Worksheet for each apprenticeable occupation in the building and construction trades utilized by the above-referenced contractor for the particular calendar month is attached hereto, **totaling _____ attached page(s).**

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: _____

Signature: _____

Print Name: _____

Title: _____

**SKILLED AND TRAINED WORKFORCE
MONTHLY REPORT
(WORKSHEET)**

NAME OF PROJECT: _____

NAME OF CONTRACTOR: _____

FOR THE MONTH OF: _____ 20__

Page ___ of ___ (Duplicate as needed. Submit a separate Worksheet for each apprenticeable occupation in the building and construction trades utilized by contractor.)

***Apprenticeable occupation:** _____.

- A. If above-identified occupation is *acoustical installer, bricklayer, carpenter, cement mason, drywall installer or lather, marble mason, finisher, or setter, modular furniture or systems installer, operating engineer, pile driver, plasterer, roofer or waterproofer, stone mason, surveyor, terrazzo worker or finisher, and tile layer, setter, or finisher*, the apprenticeship graduation percentage requirement is at least 30 percent.
- B. If the above-identified occupation is any other apprenticeable occupation, *excluding teamsters and occupations listed in subparagraph A, above*, the apprenticeship graduation percentage requirement is at least at least 30 percent in 2017, 40 percent in 2018, 50 percent in 2019, 60 percent in 20____.

Demonstrate compliance for the above-identified occupation by either Number of Skilled Journeypersons or Number of Hours of Work Performed by Skilled Journeypersons. Check and complete the method of compliance that applies:

Number of Skilled Journeypersons:

- 1. Number of skilled journeypersons performing work in the apprenticeable occupation: _____
- 2. Number of skilled journeypersons who are graduates of an apprenticeship program for the applicable occupation: _____

Percentage of skilled journeypersons who are graduates of an apprenticeship program for the applicable occupation (divide line 2 by line 1): _____ %

Number of Hours of Work Performed by Skilled Journeypersons:

- 1. Number of hours of work performed by skilled journeypersons in the apprenticeable occupation: _____
- 2. Number of hours of work performed by skilled journeypersons who are graduates of an apprenticeship program for the applicable occupation: _____

Percentage of hours of work performed by skilled journeypersons who are graduates of an apprenticeship program for the applicable occupation (divide line 2 by line 1): _____ %

*This Worksheet incorporates by reference all definitions in Public Contract Code section 2601, including, without limitation, the definitions of "apprenticeable occupation," "graduate of an apprenticeship program," and "skilled journeypersons."

END OF DOCUMENT

ESCROW AGREEMENT IN LIEU OF RETENTION
Public Contract Code Section 22300

This Escrow Agreement ("Escrow Agreement") is made and entered into this _____ day of _____, 20____, by and between the Contra Costa Community College District ("District"), whose address is Department of General Services, 333 East 8th Street, Oakland, CA 94606, and _____ ("Design/Builder"), whose address is _____, and _____ ("Escrow Agent"), a state or federally chartered bank in the state of California, whose address is _____.

For the consideration hereinafter set forth, District, Design/Builder, and Escrow Agent agree as follows:

1. Pursuant to section 22300 of Public Contract Code of the State of California, which is hereby incorporated by reference, Design/Builder has the following two (2) options:
 - Deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract No. _____ entered into between District and Design/Builder for the _____ Project, in the amount of _____ Dollars (\$ _____) dated, _____, 20____, (the "Contract"); **or**
 - On written request of Design/Builder, District shall make payments of the retention earnings for the above referenced Contract directly to Escrow Agent.

When Design/Builder deposits the securities as a substitute for Contract earnings (first option), Escrow Agent shall notify District within ten (10) calendar days of the deposit. The market value of the securities at the time of substitution and at all times from substitution until the termination of the Escrow Agreement shall be at least equal to the cash amount then required to be withheld as retention under terms of Contract between District and Design/Builder.

Securities shall be held in name of Contra Costa Community College District, and shall designate Design/Builder as beneficial owner.

2. District shall make progress payments to Design/Builder for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified above.
3. When District makes payment of retention earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Design/Builder until the time that the escrow created under this Escrow Agreement is terminated. Design/Builder 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 District pays Escrow Agent directly.

4. Design/Builder shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of District. The District will charge Design/Builder \$_____ for each of District's deposits to the escrow account. These expenses and payment terms shall be determined by District, Design/Builder, and Escrow Agent.
5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Design/Builder and shall be subject to withdrawal by Design/Builder at any time and from time to time without notice to District.
6. Design/Builder 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 District to Escrow Agent that District consents to withdrawal of amount sought to be withdrawn by Design/Builder.
7. District shall have the right to draw upon the securities and/or withdraw amounts from the Escrow Account in the event of default by Design/Builder. Upon seven (7) days' written notice to Escrow Agent from District of the default, if applicable, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by District. Escrow Agent shall not be authorized to determine the validity of any notice of default given by District pursuant to this paragraph, and shall promptly comply with District's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand.
8. Upon receipt of written notification from District certifying that the Contract is final and complete, and that Design/Builder has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Design/Builder 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 written notifications from District and Design/Builder pursuant to Paragraphs 5 through 8, inclusive, of this Escrow Agreement and District and Design/Builder shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth above.

[REMAINDER OF PAGE INTENTIONALLY BLANK]

10. Names of persons who are authorized to give written notice or to receive written notice on behalf of District and on behalf of Design/Builder in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of District:

Title

Name

Signature

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

On behalf of Design/Builder:

Title

Name

Signature

Address

At the time that the Escrow Account is opened, District and Design/Builder shall deliver to Escrow Agent a fully executed copy of this Agreement.

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

On behalf of District:

Title

Name

Signature

Address

On behalf of Design/Builder:

Title

Name

Signature

Address

END OF DOCUMENT

WARRANTY FORM

_____ ("Contractor") hereby agrees that the _____
_____ ("Work" of Contractor) which Contractor has installed for the Contra Costa
Community College District ("District") for the following project:

[Name Of] Project

("Project" or "Contract") has been performed in accordance with the requirements of the
Contract Documents and that the Work as installed will fulfill the requirements of the
Contract Documents.

The undersigned agrees to repair or replace any or all of such Work that may prove to be
defective in workmanship or material together with any other adjacent Work that may be
displaced in connection with such replacement within a period of _____
year(s) from the date of completion as defined in Public Contract Code section 7107,
subdivision (c), ordinary wear and tear and unusual abuse or neglect excepted. The date of
completion is _____, 20____.

In the event of the undersigned's failure to comply with the above-mentioned conditions
within a reasonable period of time, as determined by the District, but not later than seven
(7) days after being notified in writing by the District, the undersigned authorizes the
District to proceed to have said defects repaired and made good at the expense of the
undersigned. The undersigned shall pay the costs and charges therefor upon demand.

Date: _____

Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

Representatives to be contacted for service subject to terms of Contract:

Name: _____

Address: _____

Phone NO.: _____

END OF DOCUMENT

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS

THIS AGREEMENT AND RELEASE OF CLAIMS ("Agreement and Release") IS MADE AND ENTERED INTO THIS _____ DAY OF _____, 20__ by and between the Contra Costa Community College District ("District") and _____ ("Design/Builder"), whose place of business is _____.

RECITALS

WHEREAS, District and Design/Builder entered into a Design-Build Contract for the following project: [Name Of] Project ("Contract" or "Project") in the County of Alameda, California.

WHEREAS, The Work under the Contract was completed on _____, 20__ and a Notice of Completion was recorded with the County Recorder on _____, 20__.

NOW, THEREFORE, it is mutually agreed between District and Design/Builder as follows:

AGREEMENT AND RELEASE

1. Design/Builder will only be assessed liquidated damages as detailed below:

Original Guaranteed Maximum Price	\$ _____
Modified Guaranteed Maximum Price	\$ _____
Payment to Date	\$ _____
Liquidated Damages	\$ _____
Payment Due Design/Builder	\$ _____

2. Subject to the provisions hereof, District shall forthwith pay to Design/Builder the undisputed sum of _____ Dollars (\$ _____) under the Contract, less any amounts represented by any notice to withhold funds on file with District as of the date of such payment.

3. Design/Builder acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against District arising from the performance of work under the Contract, except for the claims described in Paragraph 4 and continuing obligations described in Paragraph 6. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Design/Builder against District and all of its respective agents, employees, trustees, inspectors, assignees, consultants and transferees, except for any Disputed Claim that may be set forth in Paragraph 4 and the continuing obligations described in Paragraph 6 hereof.

4. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>	<u>Date Claim Submitted</u>
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____

[If further space is required, attach additional sheets showing the required information.]

5. Consistent with California Public Contract Code section 7100, Design/Builder hereby agrees that, in consideration of the payment set forth in Paragraph 2 hereof, Design/Builder hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Design/Builder, including without limitation the duty to defend, indemnify and hold harmless the District, shall remain in full force and effect as specified in the Contract Documents.
7. Design/Builder hereby waives the provisions of California Civil Code section 1542 which provides as follows:
- A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.
8. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal, or other law, ruling, or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

9. All rights of District shall survive completion of the Work or termination of Contract, and execution of this Release.

* * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * *

CONTRA COSTA COMMUNITY COLLEGE DISTRICT:

Signature: _____

Print Name: _____

Title: _____

DESIGN/BUILDER: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

NOTICE TO PROCEED WITH DESIGN

Dated: _____

TO: **[name of Design-Build Entity]**
(Design-Build Entity)

ADDRESS: **[address]**

PROJECT: **Engineering Technology Renovation Project**
CCCD Project No. D-628

You are notified that the Contract Time under the above Contract will commence to run on _____, 20____, for the Engineering Technology Renovation Project. By that date, you are to start performing your design obligations under the Contract Documents. In accordance with Paragraph 3.1 of Document 00 50 00 Agreement, the date of Substantial Completion of is _____, 20____, the date of Final Completion is _____, 20____.

Before you may start any Work at the site, you must:

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

By: _____
[Name of Project Manager]
Project Manager

END OF DOCUMENT

NOTICE TO PROCEED WITH CONSTRUCTION

Dated: _____

TO: **[name of Design-Build Entity]**
(Design-Build Entity)

ADDRESS: **[address]**

PROJECT: **Engineering Technology Renovation Project**
CCCD Project No. D-628

You are hereby authorized to start performing your construction obligations under the Contract Documents. In accordance with Paragraph 3.1 of Document 00 50 00 Form of Agreement, the date of Substantial Completion of [description of project increment] is _____, **20**____, the date of Final Completion is _____, **20**____.

Before you may start any Work at the site, you must:

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

By: _____
[Name of Project Manager]
Project Manager

END OF DOCUMENT

NOTICE OF AWARD

Dated _____

TO: _____

ADDRESS: _____

CONTRACT FOR:

**CCCD Project No. D-628
Engineering Technology Renovation Project**

The Contract Sum of your contract is _____ Dollars
(\$_____).

1. DBE shall provide the District with one (1) electronic copy of the DB documents.
2. You must comply with the following conditions by 2:00 p.m. on [**day**],
[**date**].
 - a. Deliver to District two fully executed counterparts of Section 00 50 00 (Form of Agreement).
 - b. Deliver to District one (1) original set of the insurance certificates with endorsements required under Article 15 of Section 00 50 00 (Agreement).
 - c. Project Stabilization Agreement (PSA): Agreed to Letter of Assent as set forth in Appendix G (Project Stabilization Agreement) in Section 00 50 00 (Form of Agreement). Submit one original.
3. Failure to comply with these conditions within the time specified will entitle District to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid security forfeited.
4. Within ten (10) Days after you comply with the conditions in paragraph 2 of this Section 00 51 03, District will return to you one fully executed copy of Section 00 50 00 (Form of Agreement) from the Contract Documents.
5. Upon commencement of the Work, you and each of your Subcontractors shall certify and make available for inspection payroll records on forms provided by the Division of Labor Standards Enforcement, in accordance with Section 1776 of the California Labor Code.
6. Send all of the required above listed items to:

CONTRA COSTA COMMUNITY COLLEGE
DISTRICT ("District")

BY: _____

END OF DOCUMENT

NOTICE OF INTENT TO AWARD DESIGN-BUILD CONTRACT

DATE POSTED: [insert date]

PROJECT NUMBER: **D-628**

PROJECT TITLE: **ENGINEERING TECHNOLOGY RENOVATION PROJECT**

_____, the _____ of the Contra Costa Community College District, intends to recommend to the Board of Trustees of the Contra Costa Community College District on [Month Day, Year] the award of the above-referenced Project to **[Name of Design-build Entity]**.

If approved, a formal Notice of Award will be issued.

SIGNATURE _____ DATE _____

[_____] ,
[Name]
[_____] ,
[Title]

END OF DOCUMENT

ESCROW BID DOCUMENTATION

1. Requirement to Escrow Bid Documentation

- a. Design Builder shall submit, within seven (7) days after the date of the Notice of Award, one copy of all documentary information received or generated by Design Builder in preparation of bid prices for this Contract, as specified herein. This material is referred to herein as "Escrow Bid Documentation." The Escrow Bid Documentation of the Design Builder will be held in escrow for the duration of the Contract.
- b. Design Builder agrees, as a condition of award of the Contract, that the Escrow Bid Documentation constitutes all written information used in the preparation of its bid, and that no other written bid preparation information shall be considered in resolving disputes or claims. Design Builder also agrees that nothing in the Escrow Bid Documentation shall change or modify the terms or conditions of the Contract Documents.
- c. The Escrow Bid Documentation will not be opened by District except as indicated herein. The Escrow Bid Documentation will be used only for the resolution of change orders and claims disputes.
- d. Design Builder's submission of the Escrow Bid Documentation, as with the bonds and insurance documents required, is considered an essential part of the Contract award. Should the Design Builder fail to make the submission within the allowed time specified above, District may deem the Design Builder to have failed to enter into the Contract, and the Design Builder shall forfeit the amount of its bid security, accompanying the Design Builder's bid, and District may award the Contract to the next most advantageous proposal.
- e. NO PAYMENTS WILL BE MADE, NOR WILL DISTRICT ACCEPT PROPOSED CHANGE ORDERS UNTIL THE ABOVE REQUIRED INFORMATION IS SUBMITTED AND APPROVED.
- f. The Escrow Bid Documentation shall be submitted in person by an authorized representative of the Design Builder to the District.

2. Ownership of Escrow Bid Documentation

- a. The Escrow Bid Documentation is, and shall always remain, the property of Design Builder, subject to review by District, as provided herein.
- b. Escrow Bid Documentation constitute trade secrets, not known outside Design Builder's business, known only to a limited extent and only by a limited number of employees of Design Builder, safeguarded while in Design Builder's possession, extremely valuable to Design Builder, and could be extremely valuable to Design Builder's competitors by virtue of it reflecting Design Builder's contemplated techniques of construction. Subject to the provisions herein, District agrees to safeguard the Escrow Bid Documentation, and all information contained therein, against disclosure to the fullest extent permitted by law.

3. Format and Contents of Escrow Bid Documentation

- a. Design Builder may submit Escrow Bid Documentation in its usual cost-estimating format; a standard format is not required. The Escrow Bid Documentation shall be submitted in English.
- b. Escrow Bid Documentation must clearly itemize the estimated costs of performing the work of each bid item contained in the bid schedule, separating bid items into sub-items as required to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documentation shall include all subcontractor bids or quotes, supplier bids or quotes, quantity takeoffs, crews, equipment, calculations of rates of production and progress, copies of quotes from subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by the Design Builder to arrive at the prices contained in the bid proposal. Estimated costs should be broken down into Design Builder's usual estimate categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials, and subcontract costs as appropriate. Plant and equipment and indirect costs should be detailed in the Design Builder's usual format. The Design Builder's allocation of indirect costs, contingencies, markup, and other items to each bid item shall be identified.
- c. All costs shall be identified. For bid items amounting to less than \$10,000, estimated unit costs are acceptable without a detailed cost estimate, provided that labor, equipment, materials, and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and markup, as applicable, are allocated.
- d. Bid Documentation provided by District should not be included in the Escrow Bid Documentation unless needed to comply with the following requirements.

4. Submittal of Escrow Bid Documentation

- a. The Escrow Bid Documentation shall be submitted by the Design Builder in a sealed container within seven (7) days after the date of the Notice of Award. The container shall be clearly marked on the outside with the Design Builder's name, date of submittal, project name and the words "Escrow Bid Documentation – Intended to be opened in the presence of Authorized Representatives of Both District and Design Builder".
- b. By submitting Escrow Bid Documentation, Design Builder represents that the material in the Escrow Bid Documentation constitutes all of the documentary information used in preparation of the bid and that the Design Builder has personally examined the contents of the Escrow Bid Documentation container and has found that the documents in the container are complete.
- c. If Design Builder's proposal is based upon subcontracting any part of the work, each subcontractor whose total subcontract price exceeds 5 percent of the total contract price proposed by Design Builder, shall provide separate Escrow Documents to be included with those of Design Builder. Those documents shall be opened and examined in the same manner and at the same time as the examination described above for Design Builder.
- d. If Design Builder wishes to subcontract any portion of the Work after award, District retains the right to require Design Builder to submit Escrow Documents for the subcontractor before the subcontract is approved.

5. Storage, Examination and Final Disposition of Escrow Bid Documentation

- a. The Escrow Bid Documentation will be placed in escrow, for the life of the Contract, in a mutually agreeable institution. The cost of storage will be paid by Design Builder for the duration of the project until final Contract payment. The storage facilities shall be the appropriate size for all of the Escrow Bid Documentation and located conveniently to both District's and Design Builder's offices.
- b. The Escrow Bid Documentation shall be examined by both District and Design Builder, at any time deemed necessary by either District or Design Builder, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. In the case of legal proceedings, Escrow Bid Documentation shall be used subject to the terms of an appropriate protective order if requested by Design Builder.

Examination of the Escrow Bid Documentation is subject to the following conditions:

- (1) As trade secrets, the Escrow Bid Documentation is proprietary and confidential to the extent allowed by law.

- (2) District and Design Builder shall each designate, in writing to the other party seven (7) days prior to any examination, the names of representatives who are authorized to examine the Escrow Bid Documentation. No other person shall have access to the Escrow Bid Documentation.
 - (3) Access to the documents may take place only in the presence of duly designated representatives of both District and Design Builder. **If Design Builder fails to designate a representative or appear for joint examination on seven (7) days notice, then the District representative may examine the Escrow Bid Documentation alone upon an additional three (3) days notice if a representative of Design Builder does not appear at the time set.**
- c. The Escrow Bid Documentation will be returned to Design Builder at such time as the Contract has been completed and final settlement has been achieved.

END OF SECTION

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GENERAL CONDITIONS

1. CONTRACT TERMS AND DEFINITIONS

1.1 Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

1.1.1 Adverse Weather: Shall be only weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, or extreme temperature conditions in excess of the norm for the location and time of year it occurred based on the closest weather station data averaged over the past five years, (2) that is unanticipated and would cause unsafe work conditions and/or is unsuitable for scheduled work that should not be performed during inclement weather (i.e., exterior finishes), and (3) at the Project.

1.1.2 Allowance Expenditure Directive: Written authorization for expenditure of allowance, if any.

1.1.3 Approval, Approved, and/or Accepted: Written authorization, unless stated otherwise.

1.1.4 Architect (or "Design Professional in General Responsible Charge"): The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect, who will have the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the Design Professional in General Responsible Charge as defined in DSA PR 13-02 on this Project or the Architect's authorized representative.

1.1.5 As-Builts: Reproducible blue line prints of drawings to be prepared on a monthly basis pursuant to the Contract Documents, that reflect changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed since the preceding monthly submittal. See **Record Drawings**.

1.1.6 Bidder: A contractor who intends to provide a proposal to the District to perform the Work of this Contract.

1.1.7 Change Order: A written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment in the Contract Price or Contract Time.

1.1.8 Claim: A Dispute that remains unresolved at the conclusion of the all the applicable Dispute Resolution requirements provided herein.

1.1.9 Construction Change Directive: A written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work.

1.1.10 Construction Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Construction Manager is used on the Project that is the subject of this Contract, then all references to Construction Manager herein shall be read to refer to District.

1.1.11 Construction Schedule: The progress schedule of construction of the Project as provided by Contractor and approved by District.

1.1.12 Contract, Contract Documents: The Contract consists exclusively of the documents evidencing the agreement of the District and Contractor, identified as the Contract Documents. The Contract Documents consist of the following documents:

- 1.1.12.1** Notice to Bidders
- 1.1.12.2** Instructions to Bidders
- 1.1.12.3** Bid Form and Proposal
- 1.1.12.4** Bid Bond
- 1.1.12.5** Designated Subcontractors List
- 1.1.12.6** Site Visit Certification
- 1.1.12.7** Non-Collusion Declaration
- 1.1.12.8** Notice of Award
- 1.1.12.9** Notice to Proceed
- 1.1.12.10** Agreement
- 1.1.12.11** Escrow of Bid Documentation
- 1.1.12.12** Escrow Agreement for Security Deposits in Lieu of Retention
- 1.1.12.13** Performance Bond
- 1.1.12.14** Payment Bond (Contractor's Labor & Material Bond)
- 1.1.12.15** General Conditions
- 1.1.12.16** Special Conditions
- 1.1.12.17** Project Labor Agreement
- 1.1.12.18** Hazardous Materials Procedures and Requirements
- 1.1.12.19** Workers' Compensation Certification
- 1.1.12.20** Prevailing Wage Certification
- 1.1.12.21** Disabled Veteran Business Enterprise Participation Certification
- 1.1.12.22** Drug-Free Workplace Certification
- 1.1.12.23** Tobacco-Free Environment Certification
- 1.1.12.24** Hazardous Materials Certification
- 1.1.12.25** Lead-Based Materials Certification
- 1.1.12.26** Imported Materials Certification
- 1.1.12.27** Sex Offender Registration Act Certification
- 1.1.12.28** Buy American Certification
- 1.1.12.29** Roofing Project Certification
- 1.1.12.30** Registered Subcontractors List
- 1.1.12.31** Iran Contracting Act Certification
- 1.1.12.32** Post Bid Interview
- 1.1.12.33** All Plans, Technical Specifications, and Drawings
- 1.1.12.34** Any and all addenda to any of the above documents

1.1.12.35 Any and all change orders or written modifications to the above documents if approved in writing by the District

1.1.13 Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.14 Contract Time: The time period stated in the Agreement for the completion of the Work.

1.1.15 Contractor: The person or persons identified in the Agreement as contracting to perform the Work to be done under this Contract, or the legal representative of such a person or persons.

1.1.16 Daily Job Report(s): Daily Project reports prepared by the Contractor's employee(s) who are present on Site, which shall include the information required herein.

1.1.17 Day(s): Unless otherwise designated, day(s) means calendar day(s).

1.1.18 Department of Industrial Relations (or "DIR"): is responsible, among other things, for labor compliance monitoring and enforcement of California prevailing wage laws and regulations for public works contracts.

1.1.19 Design Professional in General Responsible Charge: See definition of **Architect** above.

1.1.20 Dispute: A separate demand by Contractor for a time extension, or payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or Contractor is not otherwise entitled to; or an amount of payment disputed by the District.

1.1.21 District: The public agency or the district for which the Work is performed. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract. The District may, at any time,

1.1.21.1 Direct the Contractor to communicate with or provide notice to the Construction Manager or the Architect on matters for which the Contract Documents indicate the Contractor will communicate with or provide notice to the District; and/or

1.1.21.2 Direct the Construction Manager or the Architect to communicate with or direct the Contractor on matters for which the Contract Documents indicate the District will communicate with or direct the Contractor.

1.1.22 Drawings (or "Plans"): The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the work, generally including plans, elevations, sections, details, schedules, sequence of operation, and diagrams.

1.1.23 DSA: Division of the State Architect.

1.1.24 Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific portion of work or before the Contractor prepares a price for a specific portion of work and whereby the Contractor performs the work as indicated herein on a time and materials basis.

1.1.25 Job Cost Reports: Any and all reports or records detailing the costs associated with work performed on or related to the Project that Contractor shall maintain for the Project. Specifically, Job Cost Reports shall contain, but are not limited by or to, the following information: a description of the work performed or to be performed on the Project; quantity, if applicable, of work performed (hours, square feet, cubic yards, pounds, etc.) for the Project; Project budget; costs for the Project to date; estimated costs to complete the Project; and expected costs at completion. The Job Cost Reports shall also reflect all Contract cost codes, change orders, elements of non-conforming work, back charges, and additional services.

1.1.26 Labor Commissioner's Office (or "Labor Commissioner", also known as the Division of Labor Standards Enforcement ("DLSE")): Division of the DIR responsible for adjudicating wage claims, investigating discrimination and public works complaints, and enforcing Labor Code statutes and Industrial Welfare Commission orders.

1.1.27 Municipal Separate Storm Sewer System (or "MS4"): A system of conveyances used to collect and/or convey storm water, including, without limitation, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

1.1.28 Plans: See **Drawings**.

1.1.29 Premises: The real property owned by the District on which the Site is located.

1.1.30 Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.31 Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

1.1.32 Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for Project that is the subject of this Contract, then all references to Project Manager herein shall be read to refer to District.

1.1.33 Project: The planned undertaking as provided for in the Contract Documents.

1.1.34 Project Inspector (or "Inspector"): The individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project.

1.1.35 Project Labor Agreement (or "PLA"): a prehire collective bargaining agreement in accordance with Public Contract Code section 2500 *et seq.* that establishes terms and conditions of employment for a specific construction project or projects and/or is an agreement described in Section 158(f) of Title 29 of the United States Code.

1.1.36 Proposed Change Order (or "PCO"): a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

1.1.37 Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.38 Qualified SWPPP Practitioners (or "QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.

1.1.39 Record Drawings: Reproducible drawings (or Plans) prepared pursuant to the requirements of the Contract Documents that reflect all changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed upon completion of the Project. See also **As-Builts**.

1.1.40 Request for Information (or "RFI"): A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address problems that have arisen under field conditions.

1.1.41 Request for Substitution for Specified Item: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.42 Safety Orders: Written and/or verbal orders for construction issued by the California Division of Occupational Safety and Health ("CalOSHA") or by the United States Occupational Safety and Health Administration ("OSHA").

1.1.43 Safety Plan: Contractor's safety plan specifically adapted for the Project. Contractor's Safety Plan shall comply with all provisions regarding Project safety, including all applicable provisions in these General Conditions.

1.1.44 Samples: Physical examples that illustrate materials, products, equipment, finishes, colors, or workmanship and that, when approved in accordance with the Contract Documents, establish standards by which portions of the Work will be judged.

1.1.45 Shop Drawings: All drawings, prints, diagrams, illustrations, brochures, schedules, and other data that are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, that illustrate how specific portions of the Work shall be fabricated or installed.

1.1.46 Site: The Project site as shown on the Drawings.

1.1.47 Specifications: That portion of the Contract Documents, Division 1 through Division 49, and all technical sections, and addenda to all of these, if any, consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

1.1.48 State: The State of California.

1.1.49 Storm Water Pollution Prevention Plan (or "SWPPP"): A document which identifies sources and activities at a particular facility that may contribute pollutants to storm water and contains specific control measures and time frames to prevent or treat such pollutants.

1.1.50 Subcontractor: A contractor and/or supplier who is under contract with the Contractor or with any other subcontractor, regardless of tier, to perform a portion of the Work of the Project.

1.1.51 Submittal Schedule: The schedule of submittals as provided by Contractor and approved by District.

1.1.52 Surety: The person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond, and must be a California admitted surety insurer as defined in the Code of Civil Procedure section 995.120.

1.1.53 Work: All labor, materials, equipment, components, appliances, supervision, coordination, and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and completion of the Project.

1.2 Laws Concerning the Contract

Contract is subject to all provisions of the Constitution and laws of California and the United States governing, controlling, or affecting District, or the property, funds, operations, or powers of District, and such provisions are by this reference made a part hereof. Any provision required by law to be included in this Contract shall be deemed to be inserted.

1.3 No Oral Agreements

No oral agreement or conversation with any officer, agent, or employee of District, either before or after execution of Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract.

1.4 No Assignment

Contractor shall not assign this Contract or any part thereof including, without limitation, any Work or money to become due hereunder without the prior written consent of the District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to become due under this Contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under this Contract in favor of all persons, firms, or corporations rendering services or supplying material to the extent that claims are filed pursuant to the Civil Code, Code of Civil Procedure, Government Code, Labor Code, and/or Public Contract Code, and shall also be subject to deductions for liquidated damages or withholding of payments as determined by District in accordance with this Contract. Contractor shall not assign or transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5 Notice and Service Thereof

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

1.5.1.1 If notice is given by personal delivery thereof, it shall be considered delivered on the day of delivery.

1.5.1.2 If notice is given by overnight delivery service, it shall be considered delivered one (1) day after date deposited, as indicated by the delivery service.

1.5.1.3 If notice is given by depositing same in United States mail, enclosed in a sealed envelope, it shall be considered delivered three (3) days after date deposited, as indicated by the postmarked date.

1.5.1.4 If notice is given by registered or certified mail with postage prepaid, return receipt requested, it shall be considered delivered on the day the notice is signed for.

1.5.1.5 Electronic mail may be used for convenience but is not a substitute for the notice and service requirements herein.

1.6 No Waiver

The failure of District in any one or more instances to insist upon strict performance of any of the terms of this Contract 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. No action or failure to act by the District, Architect, or Construction Manager shall constitute a waiver of any right or duty afforded the District under the Contract, nor shall any action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

1.7 Substitutions for Specified Items

Unless the Special Conditions contain different provisions, Contractor shall not substitute different items for any items identified in the Contract Documents without prior written approval of the District.

1.8 Materials and Work

1.8.1 Except as otherwise specifically stated in this Contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, supervision, temporary constructions of every nature, and all other services, management, and facilities of every nature whatsoever necessary to execute and complete this Contract, in a good and workmanlike manner, within the Contract Time.

1.8.2 Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and grades as noted or specified, workmanship shall be of good quality, and Contractor shall use all diligence to inform itself fully as to the required manufacturer's instructions and to comply therewith.

1.8.3 Materials shall be furnished in ample quantities and at such times as to ensure uninterrupted progress of Work and shall be stored properly and protected from the elements, theft, vandalism, or other loss or damage as required.

1.8.4 For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized here in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

1.8.5 Contractor shall, after award of Contract by District and after relevant submittals have been approved, 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 five (5) days' demand from District, present documentary evidence showing that orders have been placed.

1.8.6 District reserves the right but has no obligation, in response to Contractor's neglect or failure in complying with the above instructions, to place orders for such materials and/or equipment as the District may deem advisable in order that the Work may be completed at the date specified in the Contract, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by Contractor or deducted from payment(s) to Contractor.

1.8.7 Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver the Site to District, together with all improvements and appurtenances constructed or placed thereon by it, and 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 the Contract shall have any right to lien any portion of the Premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivision, 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.

1.8.7.1 If a lien or a claim based on a stop payment notice of any nature should at any time be filed against the Work or any District property, by any entity that has supplied material or services at the request of the Contractor, Contractor and Contractor's Surety shall promptly, on demand by District and at Contractor's and Surety's own expense, take any and all action necessary to cause any such lien or a claim based on a stop payment notice to be released or discharged immediately therefrom.

1.8.7.2 If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop payment notice has been so released, discharged, or secured, the District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract.

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

1.8.9 Title to new materials and/or equipment for the Work of this Contract and attendant liability for its protection and safety shall remain with Contractor until incorporated in the Work of this Contract and accepted by District. No part of any materials and/or equipment shall be removed from its place of storage except for immediate installation in the Work of this Contract. Should the District, in its discretion, allow the Contractor to store materials and/or equipment for the Work off-site, Contractor will store said materials and/or equipment at a bonded warehouse and with appropriate insurance coverage at no cost to District. Contractor shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to District or its authorized representative and shall, at the District's request, forward it to the District.

2. [RESERVED]

3. ARCHITECT

3.1 The Architect shall represent the District during the Project and will observe the progress and quality of the Work on behalf of the District. Architect shall have the authority to act on behalf of District to the extent expressly provided in the Contract Documents and to the extent determined by District. Architect shall have authority to

reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to ensure the proper execution of the Contract.

3.2 Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

3.3 Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.

3.4 Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

4.1 **The** Construction Manager used on this Project ("Construction Manager" or "CM"), is Swinerton Management Company. The Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.

4.2 The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to: the Contractor; any Subcontractor; the Contractor or Subcontractor's respective agents, employees; or other persons performing any of the Work. The Construction Manager shall have free access to any or all parts of Work at any time.

4.3 INSPECTOR, INSPECTIONS, AND TESTS

4.4 Project Inspector

4.4.1 One or more Project Inspector(s), including special Project Inspector(s), as required, will be assigned to the Work by District, in accordance with requirements of title 24, part 1, of the California Code of Regulations, to enforce the building code and monitor compliance with Plans and Specifications for the Project previously approved by the DSA. Duties of Project Inspector(s) are specifically defined in section 4-342 of said part 1 of title 24.

4.4.2 No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to any or all parts of Work at any time. Contractor shall furnish Project

Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials, including, but not limited to, submission of form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector at least 48 hours in advance of the commencement and completion of construction of each and every aspect of the Work. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>. Inspection of Work shall not relieve Contractor from an obligation to fulfill this Contract. Project Inspector(s) and the DSA are authorized to suspend work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

4.4.3 If Contractor and/or any Subcontractor requests that the Project Inspector(s) perform any inspection off-site, this shall only be done if it is allowable pursuant to applicable regulations and DSA approval, if the Project Inspector(s) agree to do so, and at the expense of the Contractor.

4.5 Tests and Inspections

4.5.1 Tests and Inspections shall comply with title 24, part 1, California Code of Regulations, group 1, article 5, section 4-335, and with the provisions of the Specifications.

4.5.2 The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

4.5.3 The Contractor shall notify the District's representative a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents, which must by terms of the Contract Documents be tested, in order that the District may arrange for the testing of same at the source of supply. This notice shall be provided, at a minimum, seventy-two (72) hours prior to the manufacture of the material that needs to be tested.

4.5.4 Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated into and/or onto the Project.

4.5.5 The District will select the testing laboratory and pay for the costs of all tests and inspections, excepting those inspections performed at Contractor's request and expense. Contractor shall reimburse the District for any and all laboratory costs or other testing costs for any materials found to be not in compliance with the Contract Documents. At the District's discretion, District may elect to deduct laboratory or other testing costs for noncompliant materials from the Contract Price, and such deduction shall not constitute a withholding.

4.6 Costs for After Hours and/or Off Site Inspections

If the Contractor performs Work outside the Inspector's regular working hours or requests the Inspector to perform inspections off Site, costs of any inspections required outside regular working hours or off Site shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

5. CONTRACTOR

Contractor shall construct and complete, in a good and workmanlike manner, the Work for the Contract Price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits (excluding DSA), fees, licenses, facilities, transportation, taxes, bonds and insurance, and services necessary for the proper execution and completion of the Work, except as indicated herein.

5.1 Status of Contractor

5.1.1 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 and its Subcontractors perform the services required of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees. Contractor assumes exclusively the responsibility for the acts of its agents, and employees as they relate to the services to be provided during the course and scope of their employment. Contractor, its Subcontractors, agents, and its employees shall not be entitled to any rights or privileges of District employees. District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of this Contract.

5.1.2 As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractors State License Board, 9821 Business Park Drive, Sacramento, California 95827, <http://www.cslb.ca.gov>.

5.1.3 As required by law, Contractor and all Subcontractors shall be properly registered as public works contractors by the Department of Industrial Relations at: <https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRRegistrationForm> or current URL.

5.1.4 Contractor represents that it has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of the Work required under this Contract and that no person having any such interest shall be employed by Contractor.

5.2 Project Inspection Card(s)

Contractor shall verify that forms DSA 152 (or the current version applicable at the time the Work is performed) are issued for the Project prior to the commencement of construction.

5.3 Contractor's Supervision

5.3.1 During progress of the Work, Contractor shall keep on the Premises, and at all other locations where any Work related to the Contract is being performed, an experienced and competent project manager and construction superintendent who are employees of the Contractor, to whom the District does not object and at least one of whom shall be fluent in English, written and verbal.

5.3.2 The project manager and construction superintendent shall both speak fluently the predominant language of the Contractor's employees.

5.3.3 Before commencing the Work herein, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District. If the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, or to District, any of the District's employees, agents, the Construction Manager, or the Architect, the unsatisfactory project manager and/or construction superintendent shall be replaced. However, Contractor shall notify District in writing before any change occurs, but no less than two (2) business days prior. Any replacement of the project manager and/or construction superintendent shall be made promptly and must be satisfactory to the District. The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

5.3.4 Contractor shall give efficient supervision to Work, using its best skill and attention. Contractor shall carefully study and compare all Contract Documents, Drawings, Specifications, and other instructions and shall at once report to District, Construction Manager, and Architect any error, inconsistency, or omission that Contractor or its employees and Subcontractors may discover, in writing, with a copy to District's Project Inspector(s). The Contractor shall have responsibility for discovery of errors, inconsistencies, or omissions.

5.4 Duty to Provide Fit Workers

5.4.1 Contractor and Subcontractor(s) shall at all times enforce strict discipline and good order among their employees and shall not employ or work any unfit person or anyone not skilled in work assigned to that person. It shall be the responsibility of Contractor to ensure compliance with this requirement. District may require Contractor to permanently remove unfit persons from Project Site.

5.4.2 Any person in the employ of Contractor or Subcontractor(s) whom District may deem incompetent or unfit shall be excluded from working on the Project and shall not again be employed on the Project except with the prior written consent of District.

5.4.3 The Contractor shall furnish labor that can work in harmony with all other elements of labor employed or to be employed in the Work.

5.4.4 If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District in writing prior to

making any contemplated change. The District shall determine in writing if Contractor's intended change is permissible while performing this Contract.

5.5 Field Office

5.5.1 Contractor shall provide a temporary office on the Site for the District's use exclusively, during the term of the Contract.

5.6 Purchase of Materials and Equipment

The Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to assure that there will be no delays.

5.7 Documents on Work

5.7.1 Contractor shall at all times keep on the Site, or at another location as the District may authorize in writing, one (1) legible copy of all Contract Documents, including Addenda and Change Orders, and Titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the Uniform Building Code, all approved Drawings, Plans, Schedules, and Specifications, and all codes and documents referred to in the Specifications, and made part thereof. These documents shall be kept in good order and available to District, Construction Manager, Architect, Architect's representatives, the Project Inspector(s), and all authorities having jurisdiction. Contractor shall be acquainted with and comply with the provisions of these titles as they relate to this Project. (See particularly the duties of Contractor, Title 24, Part 1, California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project, particularly Titles 8 and 17. Contractor shall coordinate with Architect and Construction Manager and shall submit its verified report(s) according to the requirements of Title 24.

5.7.2 Daily Job Reports.

5.7.2.1 Contractor shall maintain, at a minimum, at least one (1) set of Daily Job Reports on the Project. These must be prepared by the Contractor's employee(s) who are present on Site, and must include, at a minimum, the following information:

- 5.7.2.1.1** A brief description of all Work performed on that day.
- 5.7.2.1.2** A summary of all other pertinent events and/or occurrences on that day.
- 5.7.2.1.3** The weather conditions on that day.
- 5.7.2.1.4** A list of all Subcontractor(s) working on that day, including DIR registration numbers.
- 5.7.2.1.5** A list of each Contractor employee working on that day and the total hours worked for each employee.
- 5.7.2.1.6** A complete list of all equipment on Site that day, whether in use or not.
- 5.7.2.1.7** A complete list of all materials, supplies, and equipment delivered on that day.

5.7.2.1.8 A complete list of all inspections and tests performed on that day.

5.7.2.2 Each day Contractor shall provide a copy of the previous day's Daily Job Report to the District or the Construction Manager.

5.8 Preservation of Records

Contractor shall maintain, and District shall have the right to inspect, Contractor's financial records for the Project, including, without limitation, Job Cost Reports for the Project in compliance with the criteria set forth herein. The District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, Job Cost Reports, payroll, payment, timekeeping and tracking documents; all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. The Contractor shall make available at its office at all reasonable times the materials described in this paragraph for the examination, audit, or reproduction until three (3) years after final payment under this Contract. Notwithstanding the provisions above, Contractor shall provide any records requested by any governmental agency, if available, after the time set forth above.

5.9 Integration of Work

5.9.1 Contractor shall do all cutting, fitting, patching, and preparation of Work as required to make its several parts come together properly, to fit it to receive or be received by work of other contractors, and to coordinate tolerances to various pieces of work, showing upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and shall conform them as District and/or Architect may direct.

5.9.2 Contractor shall make its own layout of lines and elevations and shall be responsible for the accuracy of both Contractor's and Subcontractors' work resulting therefrom.

5.9.3 Contractor and all Subcontractors shall take all field dimensions required in performance of the Work, and shall verify all dimensions and conditions on the Site. All dimensions affecting proper fabrication and installation of all Work must be verified prior to fabrication by taking field measurements of the true conditions. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the Work, Contractor shall bring such discrepancies to the attention of the District and Architect for adjustment before proceeding with the Work. In doing so, it is recognized that Contractor is not acting in the capacity of a licensed design professional, and that Contractor's examination is made in good faith to facilitate construction and does not create an affirmative responsibility of a design professional to detect errors, omissions or inconsistencies in the Contract Documents or to ascertain compliance with applicable laws, building codes or regulations.

However, nothing in this provision shall abrogate Contractor's responsibilities for discovering and reporting any error, inconsistency, or omission pursuant to the Contract within the Contractor's standard of care including, without limitation, any applicable laws, ordinance, rules, or regulations. Following receipt of written notice from Contractor, the District and/or Architect shall inform Contractor what action, if any, Contractor shall take with regard to such discrepancies.

5.9.4 All costs caused by noncompliant, defective, or delayed Work shall be borne by Contractor, inclusive of repair work.

5.9.5 Contractor shall not endanger any work performed by it or anyone else by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with consent of District.

5.10 Notifications

5.10.1 Contractor shall notify the Architect and Project Inspector, in writing, of the commencement of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>.

5.10.2 Contractor shall notify the Architect and Project Inspector, in writing, of the completion of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or current version) to the Project Inspector.

5.11 Obtaining of Permits, Licenses and Registrations

Contractor shall secure and pay for all permits (except DSA), licenses, registrations, approvals and certificates necessary for prosecution of Work, including but not limited to those listed in the Special Conditions, if any, before the date of the commencement of the Work or before the permits, licenses, registrations, approvals and certificates are legally required to continue the Work without interruption. The Contractor shall obtain and pay, only when legally required, for all licenses, registrations, approvals, permits, inspections, and inspection certificates required to be obtained from or issued by any authority having jurisdiction over any part of the Work included in the Contract. All final permits, licenses, registrations, approvals and certificates shall be delivered to District before demand is made for final payment.

5.12 Royalties and Patents

5.12.1 Contractor shall obtain and pay, only when legally required, all royalties and license fees necessary for prosecution of Work before the earlier of the date of the commencement of the Work or the date that the license is legally required to continue the Work without interruption. Contractor shall defend suits or claims of infringement of patent, copyright, or other rights and shall hold the District, the Architect, and the Construction Manager harmless and indemnify them from loss on account thereof except when a particular design, process, or make or model of product is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process, or product is an infringement of a patent or copyright, the Contractor shall indemnify and defend the District,

Architect and Construction Manager against any loss or damage unless the Contractor promptly informs the District of its information.

5.12.2 The review by the District or Architect of any method of construction, invention, appliance, process, article, device, or material of any kind shall be only its adequacy for the Work and shall not approve use by the Contractor in violation of any patent or other rights of any person or entity.

5.13 Work to Comply With Applicable Laws and Regulations

5.13.1 Contractor shall give all notices and comply with the following specific laws, ordinances, rules, and regulations and all other applicable laws, ordinances, rules, and regulations bearing on conduct of Work as indicated and specified, including but not limited to the appropriate statutes and administrative code sections. If Contractor observes that Drawings and Specifications are at variance therewith, or should Contractor become aware of the development of conditions not covered by Contract Documents that may result in finished Work being at variance therewith, Contractor shall promptly notify District in writing and any changes deemed necessary by District shall be made as provided in Contract for changes in Work.

5.13.1.1 National Electrical Safety Code, U. S. Department of Commerce

5.13.1.2 National Board of Fire Underwriters' Regulations

5.13.1.3 International Building Code, latest addition, and the California Code of Regulations, title 24, and other amendments

5.13.1.4 Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America

5.13.1.5 Industrial Accident Commission's Safety Orders, State of California

5.13.1.6 Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes

5.13.1.7 Americans with Disabilities Act

5.13.1.8 Education Code of the State of California

5.13.1.9 Government Code of the State of California

5.13.1.10 Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies

5.13.1.11 Public Contract Code of the State of California

5.13.1.12 California Art Preservation Act

5.13.1.13 U. S. Copyright Act

5.13.1.14 U. S. Visual Artists Rights Act

5.13.2 Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act (Public Resources Code section 21000 et seq.).

5.13.3 If Contractor performs any Work that it knew, or through exercise of reasonable care should have known, to be contrary to any applicable laws, ordinance, rules, or regulations, Contractor shall bear all costs arising therefrom and arising from the correction of said Work.

5.13.4 Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies applicable at the time the Work is performed, and as determined by those bodies or agencies.

5.14 Safety/Protection of Persons and Property

5.14.1 The Contractor will be solely and completely responsible for conditions of the Site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours.

5.14.2 The wearing of hard hats will be mandatory at all times for all personnel on Site. Contractor shall supply sufficient hard hats to properly equip all employees and visitors.

5.14.3 Any construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the Site.

5.14.4 Implementation and maintenance of safety programs shall be the sole responsibility of the Contractor.

5.14.5 The Contractor shall furnish to the District a copy of the Contractor's safety plan within the time frame indicated in the Contract Documents and specifically adapted for the Project.

5.14.6 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 Contract and shall take all necessary measures and be responsible for the proper care and completion and final acceptance by District. All Work shall be solely at Contractor's risk with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105.

5.14.7 Contractor shall take, and require Subcontractors to take, all necessary precautions for safety of workers on the Project 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 premises where Work is being performed and to provide a safe and healthful place of employment. Contractor shall furnish, erect, and properly maintain at all times, all necessary safety devices, safeguards, construction canopies, signs, 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.

5.14.8 Hazards Control – Contractor shall store volatile wastes in covered metal containers and remove them from the Site daily. Contractor shall prevent accumulation of wastes that create hazardous conditions. Contractor shall provide adequate ventilation during use of volatile or noxious substances.

5.14.9 Contractor shall designate a responsible member of its organization on the Project, 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 to District by Contractor.

5.14.10 Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, Contractor shall correct such violation promptly.

5.14.11 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

5.14.12 In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its discretion, to prevent such threatened loss or injury. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

5.14.13 All salvage materials will become the property of the Contractor and shall be removed from the Site unless otherwise called for in the Contract Documents. However, the District reserves the right to designate certain items of value that shall be turned over to the District unless otherwise directed by District.

5.14.14 All connections to public utilities and/or existing on-site services shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

5.14.15 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, such as extreme heat, cold, rain, snow, dry winds, flooding, or dampness.

5.14.16 The Contractor shall protect and preserve the Work from all damage or accident, providing any temporary roofs, window and door coverings, boxings, or other construction as required by the Architect. The Contractor shall be responsible for existing structures, walks, roads, trees, landscaping, and/or improvements in working areas; and shall provide adequate protection therefore. If temporary removal is necessary of any of the above items, or damage occurs due to the Work, the Contractor shall replace same at its expense with same kind, quality, and size of Work or item damaged. This shall include any adjoining property of the District and others.

5.14.17 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.

5.14.18 Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of Architect, and shall not interfere with the Work or unreasonably encumber Premises or overload any structure with materials. Contractor shall enforce all instructions of District and Architect regarding signs, advertising, fires, and smoking, and require that all workers comply with all regulations while on Project Site.

5.14.19 Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. No verbal or physical contact with neighbors, students, and faculty, profanity, or inappropriate attire or behavior will be permitted. District may require Contractor to permanently remove non-complying persons from Project Site.

5.14.20 Contractor shall take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed, Contractor shall have a civil engineer, registered as a professional engineer in California, replace them at no cost to District.

5.14.21 In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

5.15 Working Evenings and Weekends

Contractor may be required to work increased hours, evenings, and/or weekends at no additional cost to the District. Contractor shall give the District seventy-two (72) hours' notice prior to performing any evening and/or weekend work. Contractor shall perform all evening and/or weekend work only upon District's approval and in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations. Contractor shall reimburse the District for any increased or additional Inspector charges as a result of Contractor's increased hours, or evening and/or weekend work.

5.16 Cleaning Up

5.16.1 The Contractor shall provide all services, labor, materials, and equipment necessary for protecting and securing the Work, all school occupants, furnishings, equipment, and building structure from damage until its completion and final acceptance by District. Dust barriers shall be provided to isolate dust and dirt from construction operations. At completion of the Work and portions thereof, Contractor

shall clean to the original state any areas beyond the Work area that become dust laden as a result of the Work. The Contractor must erect the necessary warning signs and barricades to ensure the safety of all school occupants. The Contractor at all times must maintain good housekeeping practices to reduce the risk of fire damage and must make a fire extinguisher, fire blanket, and/or fire watch, as applicable, available at each location where cutting, braising, soldering, and/or welding is being performed or where there is an increased risk of fire.

5.16.2 Contractor at all times shall keep Premises, including property immediately adjacent thereto, free from debris such as waste, rubbish (including personal rubbish of workers, e.g., food wrappers, etc.), and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises (or surrounding property or neighborhood), but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for continued operations. Contractor shall comply with all related provisions of the Specifications.

5.16.3 If the Construction Manager, Architect, or District observes the accumulation of trash and debris, the District will give the Contractor a 24-hour written notice to mitigate the condition.

5.16.4 Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District may, at its sole discretion, then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price.

6. SUBCONTRACTORS

6.1 Contractor shall provide the District with information for all Subcontracts as indicated in the Contractor's Submittals and Schedules Section herein.

6.2 No contractual relationship exists between the District and any Subcontractor, supplier, or sub-subcontractor by reason of this Contract.

6.3 Contractor agrees to bind every Subcontractor by terms of this Contract as far as those terms that are applicable to Subcontractor's work including, without limitation, all labor, wage & hour, apprentice and related provisions and requirements. If Contractor shall subcontract any part of this Contract, 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, including Subcontractor caused Project delays, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications and/or the arrangement of

the drawings are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

6.4 District's consent to, or approval of, or failure to object to, any Subcontractor under this Contract shall not in any way relieve Contractor of any obligations under this Contract and no such consent shall be deemed to waive any provisions of this Contract.

6.5 Contractor is directed to familiarize itself with sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and to comply with all applicable requirements therein. In addition, Contractor is directed to familiarize itself with sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and to comply with all applicable requirements therein including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

6.6 No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100 et seq. of the Public Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, and section 1771.1 of the Labor Code, either:

6.6.1 Substitute any person as a Subcontractor in place of the Subcontractor designated in the original Bid; or

6.6.2 Permit any Subcontract to be assigned or transferred, or allow any portion of the Work to be performed by anyone other than the original Subcontractor listed in the Bid; or

6.6.3 Sublet or subcontract any portion of the Work in excess of one-half of one percent (0.5%) of the Contractor's total bid as to which its original bid did not designate a Subcontractor.

6.7 The Contractor shall be responsible for the coordination of the trades, Subcontractors, sub-subcontractors, and material or equipment suppliers working on the Project.

6.7.1 Contractor is responsible for ensuring that all Subcontractors are properly registered as public works contractors by the Department of Industrial Relations.

6.8 Contractor is solely responsible for settling any differences between the Contractor and its Subcontractor(s) or between Subcontractors.

6.9 Contractor must include in all of its subcontracts the assignment provisions as indicated in the Termination section of these General Conditions.

7. OTHER CONTRACTS/CONTRACTORS

7.1 District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with the Project. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly coordinate and connect Contractor's Work with the work of other contractors.

7.2 In addition to Contractor's obligation to protect its own Work, Contractor shall protect the work of any other contractor that Contractor encounters while working on the Project.

7.3 If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and, before proceeding with its Work, promptly report to the District in writing any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work and not caused by execution of Contractor's Work.

7.4 To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District in writing any discrepancy between that executed work and the Contract Documents.

7.5 Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or 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 Contract in light of the other contracts, if any.

7.6 Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Site, the Premises, or of the Project. Contractor shall not cause any unnecessary hindrance or delay to the use and/or operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or Premises operation is likely to cause interference with performance of Contractor's Contract, Contractor shall coordinate with

those contractor(s), person(s), and/or entity(s) and shall notify the District of the resolution.

8. DRAWINGS AND SPECIFICATIONS

8.1 A complete list of all Drawings that form a part of the Contract is to be found as an index on the Drawings themselves, and/or may be provided to the Contractor and/or in the Table of Contents.

8.2 Materials or Work described in words that so applied have a well-known technical or trade meaning shall be deemed to refer to recognized standards, unless noted otherwise.

8.3 Trade Name or Trade Term. It is not the intention of this Contract 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 "trade name" or "trade term" shall be considered a sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

8.4 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 therefor, as per best practices of the trade(s) involved, unless specifically noted otherwise.

8.5 Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and Specifications are in conflict with the Contract Documents, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

8.6 In the case of discrepancy or ambiguity in the Contract Documents, the order of precedence in the Agreement shall prevail. However, in the case of discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

8.7 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 Contract Documents, the laws, ordinances, rules, and regulations shall be considered as a part of the Contract within the limits specified. Contractor shall bear all expense of correcting work done contrary to said laws, ordinances, rules, and regulations.

8.9 As required by Section 4-317(c), Part 1, Title 24, CCR: "Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the DSA-approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a

separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work.”

9.9 Ownership of Drawings

All copies of Plans, Drawings, Designs, Specifications, and copies of other incidental architectural and engineering work, or copies of other Contract Documents furnished by District, are the property of District. They are not to be used by Contractor in other work and, with the exception of signed sets of Contract Documents, are to be returned to District on request at completion of Work, or may be used by District as it may require without any additional costs to District. Neither the Contractor nor any Subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect. District hereby grants the Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings prepared for the Project in the execution of their Work under the Contract Documents.

9. CONTRACTOR’S SUBMITTALS AND SCHEDULES

Contractor’s submittals shall comply with the provisions and requirements of the Specifications including, without limitation Submittals.

9.01 Budgets

9.01.1 Within TEN (10) calendar days of the date of the Notice to Proceed the Contractor shall prepare and submit to the District for review and approval, in a form supported by sufficient data to substantiate its accuracy as the District may require, a detailed project **target budget**. This target budget shall be broken down by CSI section, with quantities and pricing for all labor, material & equipment shown. The target budget shall include line items for “Design contingency” and “Contractor contingency” below to cost of work subtotal.

9.01.2 Budget Updates shall be provided by DBE for District review and approval at 100% Schematic Design, 100% Design Development, 50% Construction Documents and 100% Construction Documents.

9.1 Schedule of Work, Schedule of Submittals, and Schedule of Values

9.1.1 Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Specifications), the Contractor shall prepare and submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

9.1.1.1 Preliminary Schedule. A preliminary schedule of construction indicating the starting and completion dates of the various stages of the Work, including any information and following any form as may be specified in the Specifications. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project’s critical path with a specific determination of the start and completion of each critical path task as well as all Contract milestones and each milestone’s completion date(s) as may be required by the District.

9.1.1.1.1 The District is not required to approve a preliminary schedule of construction with early completion, i.e., one that shows early completion dates for the Work and/or milestones. Contractor shall not be entitled to extra compensation if the District approves a Construction Schedule with an early completion date and Contractor completes the Project beyond the date shown in the schedule but within the Contract Time. A Construction Schedule showing the Work completed in less than the Contract Time, the time between the early completion date and the end of the Contract Time shall be Float

9.1.1.2 Preliminary Schedule of Values. A preliminary schedule of values for all of the Work, which must include quantities and prices of items aggregating the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Unless the Special Conditions contain different limits, this preliminary schedule of values shall include, at a minimum, the following information and the following structure:

9.1.1.2.1 Divided into at least the following categories:

- 9.1.1.2.1.1** Overhead and profit;
- 9.1.1.2.1.2** Supervision;
- 9.1.1.2.1.3** General conditions;
- 9.1.1.2.1.4** Layout;
- 9.1.1.2.1.5** Mobilization;
- 9.1.1.2.1.6** Submittals;
- 9.1.1.2.1.7** Bonds and insurance;
- 9.1.1.2.1.8** Close-out/Certification documentation;
- 9.1.1.2.1.9** Demolition;
- 9.1.1.2.1.10** Installation;
- 9.1.1.2.1.11** Rough-in;
- 9.1.1.2.1.12** Finishes;
- 9.1.1.2.1.13** Testing;
- 9.1.1.2.1.14** Punchlist and District acceptance.

9.1.1.2.2 And also divided by each of the following areas:

- 9.1.1.2.2.1** Site work;
- 9.1.1.2.2.2** By each building;
- 9.1.1.2.2.3** By each floor.

9.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

- 9.1.1.2.3.1** Mobilization and layout combined to equal not more than 1%;
- 9.1.1.2.3.2** Submittals, samples and shop drawings combined to equal not more than 3%;
- 9.1.1.2.3.3** Bonds and insurance combined to equal not more than 2%.
- 9.1.1.2.3.4** Closeout documentation shall have a value in the preliminary schedule of not less than 5%.

9.1.1.2.4 Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision, general conditions costs, and profit, as reflected in the Cost Breakdown, shall be paid based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

9.1.1.2.5 Contractor shall certify that the preliminary schedule of values as submitted to the District is accurate and reflects the costs as developed in preparing Contractor's bid. For example, without limiting the foregoing, Contractor shall not "front-load" the preliminary schedule of values with dollar amounts greater than the value of activities performed early in the Project.

9.1.1.2.6 The preliminary schedule of values shall be subject to the District's review and approval of the form and content thereof. In the event that the District objects to any portion of the preliminary schedule of values, the District shall notify the Contractor, in writing, of the District's objection(s) to the preliminary schedule of values. Within five (5) calendar days of the date of the District's written objection(s), Contractor shall submit a revised preliminary schedule of values to the District for review and approval. The foregoing procedure for the preparation, review and approval of the preliminary schedule of values shall continue until the District has approved the entirety of the preliminary schedule of values.

9.1.1.2.7 Once the preliminary schedule of values is approved by the District, this shall become the Schedule of Values. The Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole discretion of the District.

9.1.1.3 Preliminary Schedule of Submittals. A preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule. Upon request by the District, Contractor shall provide an electronic copy of all submittals to the District. All submittals shall be submitted no later than 90 days after the Notice to Proceed.

9.1.1.4 Safety Plan. Contractor's Safety Plan specifically adapted for the Project. Contractor's Safety Plan shall comply with the following requirements:

9.1.1.4.1 All applicable requirements of California Division of Occupational Safety and Health ("CalOSHA") and/or of the United States Occupational Safety and Health Administration ("OSHA").

9.1.1.4.2 All provisions regarding Project safety, including all applicable provisions in these General Conditions.

9.1.1.4.3 Contractor's Safety Plan shall be in English and in the language(s) of the Contractor's and its Subcontractors' employees.

9.1.1.5 Complete Registered Subcontractors List. The name, address, telephone number, facsimile number, California State Contractors License number, classification, DIR registration number and monetary value of all Subcontracts of any tier for parties furnishing labor, material, or equipment for completion of the Project.

9.1.2 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

9.1.3 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

9.1.4 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

9.1.5 All submittals and schedules must be approved by the District before Contractor can rely on them as a basis for payment.

9.2 Monthly Progress Schedule(s)

9.2.1 Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed as well as updating the Registered Subcontractors List. The monthly Progress Schedule shall be sent within the timeframe requested by the District and shall be in a format acceptable to the District and contain a written narrative of the progress of work that month and any changes, delays, or events that may affect the work. The process for District approval of the Monthly Progress Schedule shall be the same as the process for approval of the Construction Schedule.

9.2.2 Contractor shall submit Monthly Progress Schedule(s) with all payment applications.

9.2.3 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

9.2.4 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

9.2.5 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

9.2.6 All submittals and schedules must be approved by the District before Contractor can rely on them as a basis for payment.

9.3 Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Site for any material requiring a Material Safety Data Sheet per the federal "Hazard Communication" standard, or employees' "right to know" law. The Contractor is also required to ensure proper labeling on substances brought onto the job site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

10. SITE ACCESS, CONDITIONS, AND REQUIREMENTS

10.1 Site Investigation

Before bidding on this Work, Contractor shall make a careful investigation of the Site and thoroughly familiarize itself with the requirements of the Contract. By the act of submitting a bid for the Work included in this Contract, Contractor shall be deemed to have made a complete study and investigation, and to be familiar with and accepted the existing conditions of the Site.

Prior to commencing the Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey. This electronic record shall serve as a basis for determining any damages caused by the Contractor during the Project. The Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

10.2 Soils Investigation Report

10.2.1 When a soils investigation report obtained from test holes at Site or for the Project is available, that report may be available to the Contractor but shall not be a part of this Contract and shall not alleviate or excuse the Contractor's obligation to perform its own investigation. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of this Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it has made visual examination of Site and has made whatever tests Contractor deems appropriate to determine underground condition of soil. Although any such report is not a part of this Contract, recommendations from the report may be included in the Drawings, Specifications, or other Contract Documents. It is Contractor's sole responsibility to thoroughly review all Contract Documents, Drawings, and Specifications.

10.2.2 Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages if, during progress of Work, Contractor encounters subsurface or latent conditions at Site materially

differing from those shown on Drawings or indicated in Specifications, or for unknown conditions of an unusual nature that differ materially from those ordinarily encountered in the work of the character provided for in Plans and Specifications, except as indicated in the provisions of these General Conditions regarding trenches, trenching, and/or existing utility lines.

10.3 Access to Work

District and its representatives shall at all times have access to Work wherever it is in preparation or progress, including storage and fabrication. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

10.4 Layout and Field Engineering

10.4.1 All field engineering required for layout of this Work and establishing grades for earthwork operations shall be furnished by Contractor at its expense. This Work shall be done by a qualified, California-registered civil engineer approved in writing by District and Architect. Any required Record and/or As-Builts of Site development shall be prepared by the approved civil engineer.

10.4.2 The Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the Site and for having satisfied itself as to the conditions under which the Work is to be performed. Contractor shall follow best practices, including but not limited to potholing to avoid utilities. District shall not be liable for any claim for allowances because of Contractor's error, failure to follow best practices, or negligence in acquainting itself with the conditions at the Site.

10.4.3 Contractor shall protect and preserve established benchmarks and monuments and shall make no changes in locations without the prior written approval of District. Contractor shall replace any benchmarks or monuments that are lost or destroyed subsequent to proper notification of District and with District's approval.

10.5 Utilities

Utilities shall be provided as indicated in the Specifications.

10.6 Sanitary Facilities

Sanitary facilities shall be provided as indicated in the Specifications.

10.7 Surveys

Contractor shall provide surveys done by a California-licensed civil engineer surveyor to determine locations of construction, grading, and site work as required to perform the Work.

10.8 Regional Notification Center

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor. Any delays caused by failure to make appropriate notification shall be at the sole risk of the Contractor and shall not be considered for an extension of the Contract Time.

10.9 Existing Utility Lines

10.9.1 Pursuant to Government Code section 4215, District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction Site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

10.9.2 Locations of existing utilities provided by District shall not be considered exact, but approximate within a reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care or costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating and repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment necessarily idle during such work.

10.9.3 No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Work. Nothing in this Article shall be deemed to require District to indicate the presence of existing service laterals, appurtenances, or other utility lines, within the exception of main or trunk utility lines or whenever the presence of these utilities on the Site of the construction Project 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.

10.9.4 If Contractor, while performing Work under this Contract, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

10.10 Notification

Contractor understands, acknowledges and agrees that the purpose of prompt notification to the District pursuant to these provisions is to allow the District to

investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

10.11 Hazardous Materials

Contractor shall comply with all provisions and requirements of the Contract Documents related to hazardous materials including, without limitation, Hazardous Materials Procedures and Requirements.

10.12 No Signs

Neither the Contractor nor any other person or entity shall display any signs not required by law or the Contract Documents at the Site, fences trailers, offices, or elsewhere on the Site without specific prior written approval of the District.

11. TRENCHES

11.1 Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds \$25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan, stamped by a licensed engineer retained by the Contractor, showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

11.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but 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 the District or by the person to whom authority to accept has been delegated by the District.

11.3 No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

11.4 No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CalOSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

11.5 Discovery of Hazardous Waste and/or Unusual Conditions

11.5.1 Pursuant to Public Contract Code section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the Surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:

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

11.5.1.2 Subsurface or latent physical conditions at the Site differing from those indicated.

11.5.1.3 Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

11.5.2 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 herein.

11.5.3 In the event that a dispute arises between 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 Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law that pertain to the resolution of disputes and protests.

12. INSURANCE AND BONDS

12.1 Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be at least as broad as the amounts and include the provisions set forth herein.

12.1.1 Commercial General Liability and Automobile Liability Insurance

12.1.1.1 Contractor shall procure and maintain, during the life of this Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from, or in connection with, operations under this Contract. This coverage shall be provided in a form at least as broad as Insurance Services (ISO) Form CG 0001 11188. Contractor shall ensure that Products Liability and Completed Operations

coverage, Fire Damage Liability coverage, and Automobile Liability Insurance coverage including owned, non-owned, and hired automobiles, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

12.1.1.2 Contractor's deductible or self-insured retention for its Commercial General Liability Insurance policy shall not exceed \$25,000 unless approved in writing by District.

12.1.1.3 All such policies shall be written on an occurrence form.

12.1.2 Excess Liability Insurance

12.1.2.1 If Contractor's underlying policy limits are less than required, subject to the District's sole discretion, Contractor may procure and maintain, during the life of this Contract, an Excess Liability Insurance Policy to meet the policy limit requirements of the required policies in order to satisfy, in the aggregate with its underlying policy, the insurance requirements herein.

12.1.2.2 There shall be no gap between the per occurrence amount of any underlying policy and the start of the coverage under the Excess Liability Insurance Policy. Any Excess Liability Insurance Policy shall be written on a following form and shall protect Contractor, District, State, Construction Manager(s), Project Manager(s), and Architect(s) in amounts and including the provisions as set forth in the Supplementary Conditions (if any) and/or Special Conditions, and that complies with all requirements for Commercial General Liability and Automobile Liability and Employers' Liability Insurance.

12.1.2.3 The District, in its sole discretion, may accept an Excess Liability Insurance Policy that brings Contractor's primary limits to the minimum requirements herein.

12.1.3 Subcontractor(s): Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Excess Liability Insurance (if Subcontractor elects to satisfy, in part the insurance required herein by procuring and maintaining an Excess Liability Insurance Policy) with forms of coverage and limits equal to the amounts required of the Contractor.

12.1.4 Workers' Compensation and Employers' Liability Insurance

12.1.4.1 In accordance with provisions of section 3700 of the California Labor Code, the Contractor and every Subcontractor shall be required to secure the payment of compensation to its employees.

12.1.4.2 Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in work under this Contract, on/or at the Site of the Project. This coverage shall cover, at a minimum, medical and surgical treatment, disability benefits, rehabilitation therapy, and survivors' death benefits. Contractor shall require its Subcontractor(s), if any, to procure and maintain Workers' Compensation Insurance and Employers' Liability Insurance for all

employees of Subcontractor(s). Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employee engaged in Work under this Contract, on or at the Site of the Project, is not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

12.1.5 Builder's Risk Insurance: Builder's Risk "All Risk" Insurance

Contractor shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work of the Project included within the Contract Documents. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, civil authority, theft, sonic disturbance, earthquake, flood, collapse, wind, rain, dust, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

12.1.6 Pollution Liability Insurance

12.1.6.1 Contractor shall procure and maintain Pollution Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, including natural resource damage, cleanup costs, removal, storage, disposal, and/or use of the pollutant arising from operations under this Contract, and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims. Coverage shall apply to sudden and/or gradual pollution conditions resulting from the escape or release of smoke, vapors, fumes, acids, alkalis, toxic chemicals, liquids, or gases, natural gas, waste materials, or other irritants, contaminants, or pollutants, including asbestos. This coverage shall be provided in a form at least as broad as Insurance Services Offices, Inc. (ISO) Form CG 2415, or Contractor shall procure and maintain these coverages separately.

12.1.6.2 Contractor warrants that any retroactive date applicable to coverage under the policy shall predate the effective date of the Contract and that continuous coverage will be maintained or an extended reporting or discovery period will be exercised for a period of three (3) years, beginning from the time that the Work under the Contract is completed.

12.1.6.3 If Contractor is responsible for removing any pollutants from a site, then Contractor shall ensure that Any Auto, including owned, non-owned, and hired, is included within the above policies and at the required limits, to cover its automobile exposure from transporting the pollutants from the site to an

approved disposal site. This coverage shall include the Motor Carrier Act Endorsement, MCS 90.

12.1.7 Proof of Insurance and Other Requirements: Endorsements and Certificates

12.1.7.1 Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until Contractor and its Subcontractor(s) have procured all required insurance and Contractor has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

12.1.7.2 Endorsements, certificates, and insurance policies shall include the following:

12.1.7.2.1 A clause stating the following, or other language acceptable to the District:

“This policy shall not be canceled until written notice to District, Architect, and Construction Manager stating date of the cancellation by the insurance carrier. Date of cancellation may not be less than thirty (30) days after date of mailing notice.”

12.1.7.2.2 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.

12.1.7.2.3 All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance.

12.1.7.2.4 All endorsements shall waive any right to subrogation against any of the named additional insureds.

12.1.7.2.5 Contractor's and Subcontractors' insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s), and/or Architect(s).

12.1.7.2.6 Contractor's insurance limit shall apply separately to each insured against whom a claim is made or suit is brought.

12.1.7.3 No policy shall be amended, canceled or modified, and the coverage amounts shall not be reduced, until Contractor or Contractor's broker has provided written notice to District, Architect(s), and Construction Manager(s) stating date of the amendment, modification, cancellation or reduction, and a

description of the change. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.

12.1.7.1 Insurance written on a "claims made" basis shall be retroactive to a date that coincides with or precedes Contractor's commencement of Work, including subsequent policies purchased as renewals or replacements. Said policy is to be renewed by the Contractor and all Subcontractors for a period of five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the Contractor and all Subcontractors for all claims made.

12.1.7.2 Unless otherwise stated in the Special Conditions, all of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than **A: VII**.

12.1.7.3 The insurance requirements set forth herein shall in no way limit the Contractor's liability arising out of or relating to the performance of the Work or related activities.

12.1.7.4 Failure of Contractor and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Contract.

12.1.8 Insurance Policy Limits

12.1.8.1 Unless different limits are indicated in the Special Conditions, the limits of insurance shall not be less than the following amounts:

Professional Liability		\$5,000,000
Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	\$5,000,000 per occurrence; \$10,000,000 aggregate
Automobile Liability – Any Auto	Combined Single Limit	\$2,000,000
Workers' Compensation		Statutory limits pursuant to State law
Employers' Liability		\$5,000,000
Builder's Risk (Course of Construction)		Replacement Cost

Pollution Liability		\$1,000,000 per claim; \$2,000,000 aggregate
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12.1.8.2 If Contractor normally carries insurance in an amount greater than the minimum amounts required by District, that greater amount shall become the minimum required amount of insurance for purposes of the Contract. Therefore, Contractor hereby acknowledges and agrees that all insurance carried by it shall be deemed liability coverage for all actions it performs in connection with the Contract.

12.2 Contract Security - Bonds

12.2.1 Contractor shall furnish two surety bonds issued by a California admitted surety insurer as follows:

12.2.1.1 Performance Bond: A bond in an amount at least equal to one hundred percent (100%) of Contract Price as security for faithful performance of this Contract.

12.2.1.2 Payment Bond: A bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for payment of persons performing labor and/or furnishing materials in connection with this Contract.

12.2.2 Cost of bonds shall be included in the Bid and Contract Price.

12.2.3 All bonds related to this Project shall be in the forms set forth in these Contract Documents and shall comply with all requirements of the Contract Documents, including, without limitation, the bond forms.

13. WARRANTY/GUARANTEE/INDEMNITY

13.1 Warranty/Guarantee

13.1.1 The Contractor shall obtain and preserve for the benefit of the District, manufacturer’s warranties on materials, fixtures, and equipment incorporated into the Work.

13.1.2 In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work furnished on the job against all defects for a period of **ONE (1)** year after the later of the following dates, unless a longer period is provided for in the Contract Documents:

13.1.2.1 The acceptance by the District’s governing board of the Work, subject to these General Conditions, or

13.1.2.2 The date that commissioning for the Project, if any, was completed.

At the District’s sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **ONE (1)** year period from

date of completion as defined above, unless a longer period is provided for in the Contract Documents, without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within ten (10) days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

13.1.3 If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of District operations, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make any and all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in this Contract.

13.1.4 The above provisions do 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 as indicated in the Specifications or upon request by District.

13.1.5 Nothing herein shall limit any other rights or remedies available to District.

13.2 Indemnity and Defense

13.2.1 To the furthest extent permitted by California law, the Contractor shall indemnify, keep and hold harmless the District, the Architect(s), and the Construction Manager(s), their respective consultants, separate contractors, board members, officers, representatives, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, injury, damages, losses, and expenses ("Claims"), including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, the Contractor's indemnification and hold harmless obligation shall be reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent the Claim(s) is/are caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. This indemnification and hold harmless obligation of the Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist or arise as to Indemnitee or other person described herein. This indemnification and hold harmless obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR.

13.2.2 To the furthest extent permitted by California law, Contractor shall also defend Indemnitees, at its own expense, including but not limited to attorneys' fees and costs, against all Claims caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, without impacting Contractor's obligation to provide an immediate and ongoing defense of Indemnitees, the Contractor's defense obligation shall be retroactively reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the Indemnitees. If any Indemnitee provides its own defense due to failure to timely respond to tender of defense, rejection of tender of defense, or conflict of interest of proposed counsel, Contractor shall reimburse such Indemnitee for any expenditures. Contractor's defense obligation shall not be construed to negate, abridge, or otherwise reduce any right or obligation of defense that would otherwise exist as to any Indemnitee or other person described herein. Contractor's defense obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR. The Contractor shall give prompt notice to the District in the event of any Claim(s).

13.2.3 Without limitation of the provisions herein, if the Contractor's obligation to indemnify and hold harmless the Indemnitees or its obligation to defend Indemnitees as provided herein shall be determined to be void or unenforceable, in whole or in part, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of the Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein. Further, the Contractor shall be and remain fully liable on its agreements and obligations herein to the fullest extent permitted by law.

13.2.4 Pursuant to Public Contract Code section 9201, the District shall provide timely notification to Contractor of the receipt of any third-party claim relating to this Contract. The District shall be entitled to recover its reasonable costs incurred in providing said notification.

13.2.5 In any and all claims against any of the Indemnitees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the Contractor's indemnification obligation herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

13.2.6 The District may retain so much of the moneys due the Contractor as shall be considered necessary, until disposition of any such Claims or until the District, Architect(s) and Construction Manager(s) have received written agreement from the Contractor that they will unconditionally defend the District, Architect(s) and

Construction Manager(s), their respective officers, agents and employees, and pay any damages due by reason of settlement or judgment.

13.2.7 The Contractor's defense and indemnification obligations hereunder shall survive the completion of Work, the warranty/guarantee period, and the termination of the Contract.

14. TIME

14.1 Notice to Proceed

14.1.1 District may issue a Notice to Proceed within one hundred twenty (120) days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.

14.1.2 In the event that the District desires to postpone issuing the Notice to Proceed beyond One hundred twenty (120) days from the date of the Notice of Award, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed.

14.1.3 If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, Contractor may terminate the Contract. Contractor's termination due to a postponement shall be by written notice to District within ten (10) days after receipt by Contractor of District's notice of postponement. It is further understood by Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement. Should Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.

14.2 Computation of Time / Adverse Weather

14.2.1 The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor in compliance with the time extension request procedures and only if all of the following conditions are met:

14.2.1.1 The weather conditions constitute Adverse Weather, as defined herein and further specified in the Special Conditions;

14.2.1.2 Contractor can verify that the Adverse Weather caused delays in excess of five (5) hours of the indicated labor required to complete the scheduled tasks of Work on the day affected by the Adverse Weather;

14.2.1.3 The Contractor's crew is dismissed as a result of the Adverse Weather;

14.2.1.4 Said delay adversely affects the critical path in the Construction Schedule; and

14.2.1.5 Exceeds twelve (36) days of delay per year.

14.2.2 If the aforementioned conditions are met, a non-compensable day-for-day extension will only be allowed for those days in excess of those indicated in the Special Conditions.

14.2.3 The Contractor shall work seven (7) days per week, if necessary, irrespective of inclement weather, to maintain access and the Construction Schedule, and to protect the Work under construction from the effects of Adverse Weather, all at no further cost to the District.

14.2.4 The Contract Time has been determined with consideration given to the average climate weather conditions prevailing in the County in which the Project is located.

14.3 Hours of Work

14.3.1 Sufficient Forces

Contractor and Subcontractors shall continuously furnish sufficient and competent work forces with the required levels of familiarity with the Project and skill, training and experience to ensure the prosecution of the Work in accordance with the Construction Schedule.

14.3.2 Performance During Working Hours

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies.

14.3.3 No Work during Testing

Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking tests. The District or District's Representative will provide Contractor with a schedule of test dates concurrent with the District's issuance of the Notice to Proceed, or as soon as test dates are made available to the District.

14.4 Progress and Completion

14.4.1 Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

14.4.2 No Commencement Without Insurance or Bonds

The Contractor shall not commence operations on the Project or elsewhere prior to the effective date of insurance and bonds. The date of commencement of the Work shall not be changed by the effective date of such insurance or bonds. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District claim for damages.

14.5 Schedule

Contractor shall provide to District, Construction Manager, and Architect a schedule in conformance with the Contract Documents and as required in the Notice to Proceed and the Contractor's Submittals and Schedules section of these General Conditions.

14.6 Expeditious Completion

The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

15. EXTENSIONS OF TIME – LIQUIDATED DAMAGES

15.1 Liquidated Damages

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. If the Work is not completed within the time specified in the Contract Documents, it is understood that the District will suffer damage. It being impractical and unfeasible to determine the amount of actual damage, it is agreed the Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the amount set forth in the Agreement for each calendar day of delay in completion. Contractor and its Surety shall be liable for the amount thereof pursuant to Government Code section 53069.85.

Liquidated damages are \$4,000/calendar day after substantial completion.

15.2 Excusable Delay

15.2.1 Contractor shall not be charged for liquidated damages because of any delays in completion of Work which are not the fault of Contractor or its Subcontractors, including acts of God as defined in Public Contract Code section 7105, acts of enemy, epidemics, and quarantine restrictions. Contractor shall, within five (5) calendar days of beginning of any delay, notify District in writing of causes of delay including documentation and facts explaining the delay and the direct correlation between the cause and effect. District shall review the facts and extent of any delay and shall grant extension(s) of time for completing Work when, in its judgment, the findings of fact justify an extension. Extension(s) of time shall apply only to that portion of Work affected by delay, and shall not apply to other portions of Work not so affected. An extension of time may only be granted if Contractor has timely submitted the Construction Schedule as required herein.

15.2.2 Contractor shall notify the District pursuant to the claims provisions in these General Conditions of any anticipated delay and its cause. Following

submission of a claim, the District may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work might be delayed thereby.

15.2.3 In the event the Contractor requests an extension of Contract Time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work. When requesting time, requests must be submitted with full justification and documentation. If the Contractor fails to submit justification, it waives its right to a time extension at a later date. Such justification must be based on the official Construction Schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the Scope of Work. Any claim for delay must include the following information as support, without limitation:

15.2.3.1 The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform the activities within the stated duration.

15.2.3.1 Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. In particular, Contractor must show an actual impact to the schedule, after making a good faith effort to mitigate the delay by rescheduling the work, by providing an analysis of the schedule ("Time Impact Analysis"). Such Time Impact Analysis shall describe in detail the cause and effect of the delay and the impact on the critical dates in the Project schedule. (A portion of any delay of seven (7) days or more must be provided.)

15.2.3.2 A recovery schedule must be submitted within twenty (20) calendar days of written notification to the District of causes of delay.

15.3 No Additional Compensation for Delays Within Contractor's Control

15.3.1 Contractor is aware that governmental agencies, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies may have to approve Contractor-prepared drawings or approve a proposed installation. Accordingly, Contractor shall include in its bid, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Thus, Contractor is not entitled to make a claim for damages or delays arising from the review of Contractor's drawings.

15.3.2 Contractor shall only be entitled to compensation for delay when all of the following conditions are met:

15.3.2.1 The District is responsible for the delay;

15.3.2.2 The delay is unreasonable under the circumstances involved;

15.3.2.3 The delay was not within the contemplation of the District and Contractor;

15.3.2.4 The delay could not have been avoided or mitigated by Contractor's reasonable diligence; and

15.3.2.5 Contractor timely complies with the claims procedure of the Contract Documents.

15.4 Float or Slack in the Schedule

Float or slack is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the District or the Contractor, but its use shall be determined solely by the District.

16. CHANGES IN THE WORK

16.1 No Changes Without Authorization

16.1.1 There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Construction Change Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive in advance of the changed Work being performed. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted and approved in writing in the Change Order or Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

16.1.2 Contractor shall perform immediately all work that has been authorized by a fully executed Change Order or Construction Change Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work.

16.1.3 Should any Change Order result in an increase in the Contract Price or extend the Contract Time, the cost of or length of extension in that Change Order shall be agreed to, in writing, by the District in advance of the Work by Contractor, and shall be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District or Construction Change Directive, Contractor waives any claim of additional compensation or time for that additional work. Under no circumstances shall Contractor be entitled to any claim of additional compensation or time not expressly requested by Contractor in a Proposed Change Order or approved by District in an executed Change Order.

16.1.4 A Change Order or Construction Change Directive will become effective when approved by the Board, notwithstanding that Contractor has not signed it. A Change Order or Construction Change Directive will become effective without Contractor's signature provided District indicates it as a "Unilateral Change Order". Any dispute as to the adjustment in the Contract Price or Contract Time, if any, of the Unilateral Change Order shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

16.1.5 Contractor understands, acknowledges, and agrees that the reason for District authorization is so that District may have an opportunity to analyze the Work and decide whether the District shall proceed with the Change Order or alter the Project so that a change in Work becomes unnecessary.

16.2 Architect Authority

The Architect will have authority to order minor changes in the Work not involving any adjustment in the Contract Price, or an extension of the Contract Time, or a change that is inconsistent with the intent of the Contract Documents. These changes shall be effected by written Change Order, Construction Change Directive, by Architect's response(s) to RFI(s), or by Architect's Supplemental Instructions ("ASI").

16.3 Change Orders

16.3.1 A Change Order is a written instrument prepared and issued by the District and/or the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, the Architect, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

16.3.1.1 A description of a change in the Work;

16.3.1.2 The amount of the adjustment in the Contract Price, if any; and

16.3.1.3 The extent of the adjustment in the Contract Time, if any.

16.4 Construction Change Directives

16.4.1 A Construction Change Directive is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work. The District may, as provided by law, by Construction Change Directive and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. The adjustment to the Contract Price or Time, if any, is subject to the provisions of this section regarding Changes in the Work. If all or a portion of the Project is being funded by funds requiring approval by the State Allocation Board ("SAB"), these revisions may be subject to compensation once approval of same is received and funded by the SAB, and funds are released by the Office of Public School Construction ("OPSC"). Any dispute as to the adjustment in the Contract Price, if any, of the Construction Change Directive or timing of payment shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

16.4.2 The District may issue a Construction Change Directive in the absence of agreement on the terms of a Change Order.

16.5 Force Account Directives

16.5.1 When work, for which a definite price has not been agreed upon in advance, is to be paid for on a force account basis, all direct costs necessarily incurred and paid by the Contractor for labor, material, and equipment used in the performance of that Work, shall be subject to the approval of the District and compensation will be determined as set forth herein.

16.5.2 The District will issue a Force Account Directive to proceed with the Work on a force account basis, and a not-to-exceed budget will be established by the District.

16.5.3 All requirements regarding direct cost for labor, labor burden, material, equipment, and markups on direct costs for overhead and profit described in this section shall apply to Force Account Directives. However, the District will only pay for actual costs verified in the field by the District or its authorized representative(s) on a daily basis.

16.5.4 The Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overhead and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive, and Contractor shall not be entitled to separately recover additional amounts for overhead and/or profit.

16.5.5 The Contractor shall notify the District or its authorized representative(s) at least twenty-four (24) hours prior to proceeding with any of the force account work. Furthermore, the Contractor shall notify the District when it has consumed eighty percent (80%) of the budget, and shall not exceed the budget unless specifically authorized in writing by the District. The Contractor will not be compensated for force account work in the event that the Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

16.5.6 The Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report on a form supplied by the District no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. The District will review the information contained in the reports, and sign the reports no later than the next work day, and return a copy of the report to the Contractor for their records. The District will not sign, nor will the Contractor receive compensation for work the District cannot verify. The Contractor will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

16.5.7 In the event the Contractor and the District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account

Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

16.6 Price Request

16.6.1 Definition of Price Request

A Price Request ("PR") is a written request prepared by the Architect requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

16.6.2 Scope of Price Request

A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. The Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

16.7 Proposed Change Order

16.7.1 Definition of Proposed Change Order

A Proposed Change Order ("PCO") is a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

16.7.2 Changes in Contract Price

A PCO shall include breakdowns and backup documentation pursuant to the revisions herein and sufficient, in the District's judgment, to validate any change in Contract Price. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional compensation for Change Order Work.

16.7.3 Changes in Time

A PCO shall also include any changes in time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Construction Schedule as defined in the Contract Documents. The Contractor shall justify the proposed change in time by submittal of a schedule analysis that accurately shows the impact of the change on the critical path of the Construction Schedule ("Time Impact Analysis"). If Contractor fails to request a time extension in a PCO, including the Time Impact Analysis then the Contractor is thereafter precluded from requesting, and waives any right to request, additional time and/or claim a delay. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional time for Change Order Work. A PCO that leaves the amount of time requested blank, or states that such time requested is "to be determined", is not permitted and shall also constitute a waiver of any right to request additional time and/or claim a delay.

16.7.4 Unknown and/or Unforeseen Conditions

If there is an Allowance, then Contractor must submit a Request for Allowance Expenditure Directive, including supporting documentation as described below, to receive authorization for the release of funds from the Allowance. Allowance Expenditure Directives shall be based on Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from this Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive. If cost of the unforeseen condition(s) exceed the Allowance, Contractor must submit a PCO for amounts in excess of the Allowance requesting an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO as unsubstantiated, and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

16.7.5 Time to Submit Proposed Change Order

Contractor shall submit its PCO within five (5) working days of the date Contractor discovers, or reasonably should have discovered, the circumstances giving rise to the PCO, unless additional time to submit a PCO is granted in writing by the District. Time is of the essence in Contractor's submission of PCOs so that the District can promptly investigate the basis for the PCO. Accordingly, if Contractor fails to submit its PCO within this timeframe, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time based on circumstances giving rise to the PCO

16.7.6 Proposed Change Order Certification

In submitting a PCO, Contractor certifies and affirms that the cost and/or time request is submitted in good faith, that the cost and/or time request is accurate and in accordance with the provisions of the Contract Documents, and the Contractor submits the cost and/or request for extension of time recognizing the significant civil penalties and treble damages which follow from making a false claim or presenting a false claim under Government Code section 12650 et seq.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

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16.8 Format for Proposed Change Order

16.8.1 The following format shall be used as applicable by the District and the Contractor (e.g. Change Orders, PCO’s) to communicate proposed additions and deductions to the Contract, supported by attached documentation. Any spaces left blank will be deemed no change to cost or time.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers’ invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully encumbered)		
(c)	<u>Add Equipment</u> (attach suppliers’ invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (f)		
(h)	<u>Subtotal</u>		
(i)	<u>Add Bond and Insurance</u> , not to exceed one and a half percent (1.5%) of Item (h)		
(j)	<u>TOTAL</u>		
(k)	<u>Time</u> (zero unless indicated; “TBD” not permitted)	<u> </u> Calendar Days	

	<u>WORK PERFORMED BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully encumbered)		
(c)	<u>Add Equipment</u> (attach suppliers’ invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add Overhead and Profit for Contractor</u> , not to exceed fifteen percent (15%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add Bond and Insurance</u> , not to exceed one and a half percent (1.5%) of Item (f)		
(h)	<u>TOTAL</u>		
(i)	<u>Time</u> (zero unless indicated; “TBD” not permitted)	<u> </u> Calendar Days	

16.8.2 Labor. Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Work. Such labor costs shall be the actual cost, not to exceed prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Work, 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. Labor costs shall exclude costs incurred by the Contractor in preparing estimate(s) of the costs of the change in the Work, in the maintenance of records relating to the costs of the change in the Work, coordination and assembly of materials and information relating to the change in the Work or performance thereof, or the supervision and other overhead and general conditions costs associated with the change in the Work or performance thereof, including but not limited to the cost for the job superintendent.

16.8.3 Materials. Contractor shall be compensated for the costs of materials necessarily and actually used or consumed in connection with the performance of the change in the Work. Costs of materials may include reasonable costs of transportation from a source closest to the Site of the Work and delivery to the Site. If discounts by material suppliers are available for materials necessarily used in the performance of the change in the Work, they shall be credited to the District. If materials necessarily used in the performance of the change in the Work are obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefor shall not exceed the current wholesale price for such materials. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials in connection with any change in the Work are excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials from its supplier or vendor of the same, the costs of such materials and the District's obligation to pay for the same shall be limited to the then lowest wholesale price at which similar materials are available in the quantities required to perform the change in the Work. The District may elect to furnish materials for the change in the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials or any mark-up thereon.

16.8.4 Equipment. As a precondition for the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of \$500.00 or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of

Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

16.8.5 Overhead and Profit. The phrase "Overhead and Profit" shall include field and office supervisors and assistants, watchperson, use of small tools, consumable, insurance other than construction bonds and insurance required herein, general conditions costs and home office expenses.

16.9 Change Order Certification

16.9.1 All Change Orders and PCOs include the following certification by the Contractor, either in the form specifically or incorporated by this reference:

16.9.1.1 The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

16.9.1.2 It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

16.9.2 Accord and Satisfaction: Contractor's execution of any Change Order shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim.

16.10 Determination of Change Order Cost

16.10.1 The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

16.10.1.1 District acceptance of a PCO;

16.10.1.2 By unit prices contained in Contractor's original bid;

16.10.1.3 By agreement between District and Contractor.

16.11 Deductive Change Orders

All deductive Change Order(s) must be prepared pursuant to the provisions herein. Where a portion of the Work is deleted from the Contract, the reasonable value of the deducted work less the value of work performed shall be considered the appropriate deduction. The value submitted on the Schedule of Values shall be used to calculate the credit amount unless the bid documentation is being held in escrow as part of the Contract Documents. Unit Prices, if any, may be used in District's discretion in calculating reasonable value. If Contractor offers a proposed amount for a deductive Change Order(s), Contractor shall include a minimum of five percent (5%) total profit and overhead to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) profit and overhead to be deducted with the amount of its deducted work. Any deviation from this provision shall not be allowed.

16.12 Addition or Deletion of Alternate Bid Item(s)

If the Bid Form and Proposal includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add or delete any such Alternate Bid Item(s) if not included in the Contract at the time of award. If the District elects to add or delete Alternate Bid Item(s) after Contract award, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Bid Form and Proposal unless the parties agree to a different price and the Contract Time shall be adjusted by the number of days allocated in the Contract Documents. If days are not allocated in the Contract Documents, the Contract Time shall be equitably adjusted.

16.13 Discounts, Rebates, and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omission in the Work as provided herein.

16.14 Accounting Records

With respect to portions of the Work performed by Change Orders and Construction Change Directives, the Contractor shall keep and maintain cost-accounting records satisfactory to the District, including, without limitation, Job Cost Reports as provided in these General Conditions, which shall be available to the District on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents. Such records shall include without limitation hourly records for Labor and Equipment and itemized records of materials and Equipment used that day in connection with the performance of any Work. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect or the Project Inspector upon request. In the event that the Contractor fails or refuses, for any reason, to maintain or make available for inspection, review and/or reproduction such

records, the District's reasonable good faith determination of the extent of adjustment to the Contract Price shall be final, conclusive, dispositive and binding upon Contractor.

16.15 Notice Required

If the Contractor desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the provisions herein, including the Article on Claims and Disputes. No claim shall be considered unless made in accordance with this subparagraph. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such claim shall be authorized by a Change Order.

16.16 Applicability to Subcontractors

Any requirements under this Article shall be equally applicable to Change Orders or Construction Change Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

16.17 Alteration to Change Order Language

Contractor shall not alter Change Orders or reserve time in Change Orders. Change Orders altered in violation of this provision, if in conflict with the terms set forth herein, shall be construed in accordance with the terms set forth herein. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

16.18 Failure of Contractor to Execute Change Order

Contractor shall be in default of the Contract if Contractor fails to execute a Change Order when the Contractor agrees with the addition and/or deletion of the Work in that Change Order.

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17. REQUEST FOR INFORMATION

17.1 Any Request for Information shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. The Contractor shall make suggestions and interpretations of the issue raised by each Request for Information. A Request for Information cannot modify the Contract Price, Contract Time, or the Contract Documents. Upon request by the District, Contractor shall provide an electronic copy of the Request for Information in addition to the hard copy.

17.2 The Contractor shall be responsible for any costs incurred for professional services that District may deduct from any amounts owing to the Contractor, if a Request for Information requests an interpretation or decision of a matter where the information sought is equally available to the party making the request. District, at its sole discretion, shall deduct from and/or invoice Contractor for all the professional services arising herein.

18. PAYMENTS

18.1 Contract Price

The Contract Price is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents.

18.2 Applications for Progress Payments

18.2.1 Procedure for Applications for Progress Payments

18.2.1.1 Application for Progress Payment

18.2.1.1.1 Not before the fifth (5th) day of each calendar month during the progress of the Work, Contractor shall submit to the District and the Architect an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

18.2.1.1.1.1 The amount paid to the date of the Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

18.2.1.1.1.2 The amount being requested under the Application for Payment by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;

18.2.1.1.1.3 The balance that will be due to each of such entities after said payment is made;

18.2.1.1.1.4 A certification that the As-Builts and annotated Specifications are current;

18.2.1.1.1.5 Itemized breakdown of work done for the purpose of requesting partial payment;

18.2.1.1.1.6 An updated and acceptable construction schedule in conformance with the provisions herein;

18.2.1.1.1.7 The additions to and subtractions from the Contract Price and Contract Time;

18.2.1.1.1.8 A total of the retentions held;

18.2.1.1.1.9 Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

18.2.1.1.1.10 The percentage of completion of the Contractor's Work by line item;

18.2.1.1.1.11 Schedule of Values updated from the preceding Application for Payment;

18.2.1.1.1.12 A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132 from the Contractor and each subcontractor of any tier and supplier to be paid from the current progress payment;

18.2.1.1.1.13 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payment(s); and

18.2.1.1.1.14 A certification by the Contractor of the following:

The Contractor warrants title to all Work performed as of the date of this payment application has been completed in accordance with the Contract Documents for the Project. The Contractor further warrants that all amounts have been paid for work which previous Certificates for Payment were issued and payments received and all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.

18.2.1.1.1.15 The Contractor shall be subject to the False Claims Act set forth in Government Code section 12650 et seq. for information provided with any Application for Progress Payment.

18.2.1.1.1.16 All remaining certified payroll records ("CPR(s)") for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment. As indicated herein, the District shall not make any payment to Contractor until:

18.2.1.1.1.16.1 Contractor and/or its Subcontractor(s) provide electronic CPRs weekly for all weeks any journeyman, apprentice, worker or other employee was employed in connection with the Work directly to the DIR, or within ten (10) days of any request by the District or the DIR, and

18.2.1.1.1.16.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs in a timely manner may directly delay the Contractor's payment.

18.2.1.1.2 Applications received after June 20th will not be paid until the second week of July and applications received after December 12th will not be paid until the first week of January.

18.2.2 Prerequisites for Progress Payments

18.2.2.1 First Payment Request: The following items, if applicable, must be completed before the District will accept and/or process the Contractor's first payment request:

18.2.2.1.1 Installation of the Project sign;

18.2.2.1.2 Installation of field office;

18.2.2.1.3 Installation of temporary facilities and fencing;

18.2.2.1.4 Schedule of Values;

18.2.2.1.5 Contractor's Construction Schedule;

18.2.2.1.6 Schedule of unit prices, if applicable;

18.2.2.1.7 Submittal Schedule;

18.2.2.1.8 Receipt by Architect of all submittals due as of the date of the payment application;

18.2.2.1.9 Copies of necessary permits;

18.2.2.1.10 Copies of authorizations and licenses from governing authorities;

18.2.2.1.11 Initial progress report;

18.2.2.1.12 Surveyor qualifications;

18.2.2.1.13 Written acceptance of District's survey of rough grading, if applicable;

18.2.2.1.14 List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;

18.2.2.1.15 All bonds and insurance endorsements; and

18.2.2.1.16 Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

18.2.2.2 Second Payment Request: The District will not process the second payment request until and unless all submittals and Shop Drawings have been accepted for review by the Architect.

18.2.2.3 No Waiver of Criteria: Any payments made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers. Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

18.3 Progress Payments

18.3.1 District's Approval of Application for Payment

18.3.1.1 Upon receipt of an Application for Payment, The District shall act in accordance with both of the following:

18.3.1.1.1 Each Application for Payment shall be reviewed by the District as soon as practicable after receipt for the purpose of determining that the Application for Payment is a proper Application for Payment.

18.3.1.1.2 Any Application for Payment determined not to be a proper Application for Payment suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. An Application for Payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the Application for Payment is not proper. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

18.3.1.1.3 An Application for Payment shall be considered properly executed if funds are available for payment of the Application for Payment, and payment is not delayed due to an audit inquiry by the financial officer of the District.

18.3.1.2 The District's review of the Contractor's Application for Payment will be based on the District's and the Architect's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the District's and the Architect's knowledge,

information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to:

18.3.1.2.1 Observation of the Work for general conformance with the Contract Documents,

18.3.1.2.2 Results of subsequent tests and inspections,

18.3.1.2.3 Minor deviations from the Contract Documents correctable prior to completion, and

18.3.1.2.4 Specific qualifications expressed by the Architect.

18.3.1.3 District's approval of the certified Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid certified Application for Payment.

18.3.2 Payments to Contractor

18.3.2.1 Within thirty (30) days after approval of the Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in said estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's right to enforce each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

18.3.2.2 The Contractor shall not be entitled to have any payment requests processed, or be entitled to have any payment made for Work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.

18.3.2.3 If the District fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment from the Contractor, the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

18.3.3 No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct or require correction of any error subsequent to any payment.

18.4 Decisions to Withhold Payment

18.4.1 Reasons to Withhold Payment

The District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, the representations to the District required herein cannot be made. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to any of the following:

18.4.1.1 Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor.

18.4.1.2 Stop Payment Notices or other liens served upon the District as a result of the Contract. Contractor agrees that the District may withhold up to 125% of the amount claimed in the Stop Payment Notice to answer the claim and to provide for the District's reasonable cost of any litigation pursuant to the stop payment notice.

18.4.1.3 Liquidated damages assessed against the Contractor.

18.4.1.4 The cost of completion of the Contract if there exists a reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the completion date.

18.4.1.5 Damage to the District or other contractor(s).

18.4.1.6 Unsatisfactory prosecution of the Work by the Contractor.

18.4.1.7 Failure to store and properly secure materials.

18.4.1.8 Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports.

18.4.1.9 Failure of the Contractor to maintain As-Builts.

18.4.1.10 Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment.

18.4.1.11 Unauthorized deviations from the Contract Documents.

18.4.1.12 Failure of the Contractor to prosecute the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, and/or completion dates.

18.4.1.13 Failure to provide acceptable electronic certified payroll records, as required by the Labor Code, by these Contract Documents, or by written request; for each journeyman, apprentice, worker, or other employee employed by the

Contractor and/or by each Subcontractor in connection with the Work for the period of the Application for Payment or if payroll records are delinquent or inadequate.

18.4.1.14 Failure to properly pay prevailing wages as required in Labor Code section 1720 et seq., failure to comply with any other Labor Code requirements, and/or failure to comply with labor compliance monitoring and enforcement by the DIR.

18.4.1.15 Allowing an unregistered subcontractor, as described in Labor Code section 1725.5, to engage in the performance of any work under this Contract.

18.4.1.16 Failure to comply with any applicable federal statutes and regulations regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon Act and related requirements, Contract Work Hours and Safety Standards Act requirements, if applicable.

18.4.1.17 Failure to properly maintain or clean up the Site.

18.4.1.18 Failure to timely indemnify, defend, or hold harmless the District.

18.4.1.19 Any payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits.

18.4.1.20 Failure to pay Subcontractor(s) or supplier(s) as required by law and by the Contract Documents.

18.4.1.21 Failure to pay any royalty, license or similar fees.

18.4.1.22 Contractor is otherwise in breach, default, or in substantial violation of any provision of this Contract.

18.4.1.23 Failure to perform any implementation and/or monitoring required by any SWPPP for the Project and/or the imposition of any penalties or fines therefore whether imposed on the District or Contractor.

18.4.2 Reallocation of Withheld Amounts

18.4.2.1 District may, in its discretion, apply any withheld amount to pay outstanding claims or obligations as defined herein. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then that amount shall be considered a payment made under Contract by District to Contractor and District shall not be liable to Contractor for any payment made in good faith. These payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of funds disbursed on behalf of Contractor.

18.4.2.2 If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision thereof, District may, after **FORTY-EIGHT (48)** hours' written notice to the Contractor and,

without prejudice to any other remedy, make good such deficiencies. 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 that is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract Price (of at least one hundred fifty percent (150%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

18.4.3 Payment After Cure

When Contractor removes the grounds for declining approval, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

18.5 Subcontractor Payments

18.5.1 Payments to Subcontractors

No later than seven (7) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to its Sub-subcontractors in a similar manner.

18.5.2 No Obligation of District for Subcontractor Payment

The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

18.5.3 Joint Checks

District shall have the right in its sole discretion, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and/or material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, or a material or equipment supplier, any obligation from the District to such Subcontractor or a material or equipment supplier, or rights in such Subcontractor or a material or equipment supplier against the District.

19. COMPLETION OF THE WORK

19.1 Completion

19.1.1 District will accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District.

19.1.2 The Work may only be accepted as complete by action of the governing board of the District.

19.1.3 District, at its sole option, may accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District, except for minor corrective items, as distinguished from incomplete items. If Contractor fails to complete all minor corrective items within fifteen (15) days after the date of the District's acceptance of completion, District shall withhold from the final payment one hundred fifty percent (150%) of an estimate of the amount sufficient to complete the corrective items, as determined by District, until the item(s) are completed.

19.1.4 At the end of the 15-day period, if there are any items remaining to be corrected, District may elect to proceed as provided herein related to adjustments to Contract Price, and/or District's right to perform the Work of the Contractor.

19.2 Close-Out/Certification Procedures

19.2.1 Punch List

The Contractor shall notify the Architect when Contractor considers the Work complete. Upon notification, Architect will prepare a list of minor items to be completed or corrected ("Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

19.2.2 Close-Out/Certification Requirements

19.2.2.1 Utility Connections

Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected.

19.2.2.2 Record Drawings and Record Specifications

19.2.2.2.1 Contractor shall provide exact Record Drawings of the Work ("As-Builts") and Record Specifications upon completion of the Project and as a condition precedent to approval of final payment.

19.2.2.2.2 Contractor shall obtain the Inspector's approval of the corrected prints and employ a competent draftsman to transfer the Record Drawings information to the most current version of AutoCAD that is, at that time, currently utilized for plan check submission by either the District, the Architect, OPSC, and/or DSA, and print a complete set of transparent sepias. When completed, Contractor shall deliver corrected sepias and diskette/CD/other

19.2.2.2.3 Contractor is liable and responsible for any and all inaccuracies in the Record Drawings and Record Specifications, even if inaccuracies become evident at a future date.

19.2.2.3 Maintenance Manuals: Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

19.2.2.4 Source Programming: Contractor shall provide all source programming for all items in the Project.

19.2.2.5 Verified Reports: Contractor shall completely and accurately fill out and file forms DSA 6-C or DSA 152 (or current form), as appropriate. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

19.3 Final Inspection

19.3.1 Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of a Project Superintendent and Project Manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List without District's prior written approval. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and District acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

19.3.2 Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

19.3.3 Final Inspection Requirements

19.3.3.1 Before calling for final inspection, Contractor shall determine that the following have been performed:

19.3.3.1.1 The Work has been completed.

19.3.3.1.2 All life safety items are completed and in working order.

19.3.3.1.3 Mechanical and electrical Work are complete and tested, fixtures are in place, connected, and ready for tryout.

19.3.3.1.4 Electrical circuits scheduled in panels and disconnect switches labeled.

19.3.3.1.5 Painting and special finishes complete.

19.3.3.1.6 Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.

- 19.3.3.1.7** Tops and bottoms of doors sealed.
- 19.3.3.1.8** Floors waxed and polished as specified.
- 19.3.3.1.9** Broken glass replaced and glass cleaned.
- 19.3.3.1.10** Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.
- 19.3.3.1.11** Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.
- 19.3.3.1.12** Finished and decorative work shall have marks, dirt, and superfluous labels removed.
- 19.3.3.1.13** Final cleanup, as provided herein.

19.4 Costs of Multiple Inspections

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

19.5 Partial Occupancy or Use Prior to Completion

19.5.1 District's Rights to Occupancy

The District may occupy or use any completed or partially completed portion of the Work at any stage, and such occupancy shall not constitute the District's Final Acceptance of any part of the Work. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. In the event that the District occupies or uses any completed or partially completed portion of the Work, the Contractor shall remain responsible for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents unless the Contractor requests in writing, and the District agrees, to otherwise divide those responsibilities. Any dispute as to responsibilities shall be resolved pursuant to the Claims and Disputes provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

19.5.2 Inspection Prior to Occupancy or Use

Immediately prior to partial occupancy or use, the District, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

19.5.3 No Waiver

Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or District's acceptance of the Work not complying with the requirements of the Contract Documents.

20. FINAL PAYMENT AND RETENTION

20.1 Final Payment

Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment. The District shall thereupon jointly inspect the Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon District's acceptance of the Work of the Contractor as fully complete by the Governing Board of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay the amount due Subcontractors.

20.2 Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

20.2.1 A full release of all Stop Payment Notices served in connection with the Work shall be submitted by Contractor.

20.2.2 A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136, from the Contractor and each subcontractor of any tier and supplier to be paid from the final payment.

20.2.3 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134, from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payments.

20.2.4 A duly completed and executed Document 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

20.2.5 The Contractor shall have made all corrections to the Work that are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

20.2.6 Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

20.2.7 Contractor must have completed all requirements set forth under "Close-Out/Certification Procedures," including, without limitation, submission of an approved set of complete Record Drawings.

20.2.8 Architect shall have issued its written approval that final payment can be made.

20.2.9 The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents, which must be approved by the District.

20.2.10 The Contractor shall have completed final clean-up as provided herein.

20.3 Retention

20.3.1 The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

20.3.1.1 After approval by the Architect of the Application and Certificate of Payment,

20.3.1.2 After the satisfaction of the conditions set forth herein, and

20.3.1.3 After forty-five (45) days after the recording of the Notice of Completion by District.

20.3.2 No interest shall be paid on any retention, or on any amounts withheld due to a failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any Escrow Agreement between the District and the Contractor pursuant to Public Contract Code section 22300.

20.4 Substitution of Securities

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

21. UNCOVERING OF WORK

If a portion of the Work is covered without Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be corrected, replaced, and/or recovered at the Contractor's expense without change in the Contract Price or Contract Time.

22. NONCONFORMING WORK AND CORRECTION OF WORK

22.1 Nonconforming Work

22.1.1 Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

22.1.2 If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

22.2 Correction of Work

22.2.1 Correction of Rejected Work

Pursuant to the notice provisions herein, the Contractor shall immediately correct the Work rejected by the District, the Architect, or the Project Inspector as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

22.2.2 One-Year Warranty Corrections

If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so. This period of one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive District's acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

22.3 District's Right to Perform Work

22.3.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

22.3.2 If it is found at any time, before or after completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

22.3.2.1 That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

22.3.2.2 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; or

22.3.2.3 That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Construction Change Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

23. TERMINATION AND SUSPENSION

23.1 District's Request for Assurances

If District at any time reasonably believes Contractor is or may be in default under this Contract, District may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Work and a written plan from Contractor to remedy any potential default under the terms this Contract that the District may advise Contractor of in writing. Contractor shall, within ten (10) calendar days of District's request, deliver a written cure plan that meets the District's requirements in its request for assurances. Contractor's failure to provide such written assurances of performance and the required written plan, within ten (10) calendar days of request, will constitute a material breach of this Contract sufficient to justify termination for cause.

23.2 District's Right to Terminate Contractor for Cause

23.2.1 Grounds for Termination: The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon any of the following:

23.2.1.1 Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

23.2.1.2 Contractor fails to complete said Work within the time specified or any extension thereof, or

23.2.1.3 Contractor persistently fails or refuses to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

23.2.1.4 Contractor persistently refuses, or repeatedly fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

23.2.1.5 Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

23.2.1.6 Contractor persistently disregards laws, or ordinances, or instructions of District; or

23.2.1.7 Contractor fails to supply labor, including that of Subcontractors, that is sufficient to prosecute the Work or that can work in harmony with all other elements of labor employed or to be employed on the Work; or

23.2.1.8 Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract, including but not limited to a lapse in licensing or registration.

23.2.2 Notification of Termination

23.2.2.1 Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work of the Contract shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

23.2.2.2 Upon Termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to take over and perform this Contract only if Surety:

23.2.2.2.1 Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to take over and perform this Contract; and

23.2.2.2.2 Commences performance of this Contract within three (3) days from date of serving of its notice to District.

23.2.2.3 Surety shall not utilize Contractor in completing the Project if the District notifies Surety of the District's objection to Contractor's further participation in the completion of the Project. Surety expressly agrees that any contractor which Surety proposes to fulfill Surety's obligations is subject to District's approval. District's approval shall not be unreasonably withheld, conditioned or delayed.

23.2.2.4 If Surety fails to notify District or begin performance as indicated herein, District may take over the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in this Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

23.3 Termination of Contractor for Convenience

23.3.1 District in its sole discretion may terminate the Contract in whole or in part upon three (3) days' written notice to the Contractor.

23.3.2 Upon notice, Contractor shall:

23.3.2.1 Cease operations as directed by the District in the notice;

23.3.2.2 Take necessary actions for the protection and preservation of the Work as soon as possible; and

23.3.2.3 Terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

23.3.3 Within 30 days of the notice, Contractor submit to the District a payment application for the actual cost for labor, materials, and services performed, including all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs, that is unpaid. Contractor shall have no claims against the District except for the actual cost for labor, materials, and services performed that adequately documented through timesheets, invoices, receipts, or otherwise. District shall pay all undisputed invoice(s) for work performed until the notice of termination.

23.3.4 Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause.

23.4 Effect of Termination

23.4.1 Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The Contractor and its Surety shall be liable upon the Performance Bond for all damages caused to the District by reason of the Contractor's failure to complete the Contract.

23.4.2 In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

23.4.3 In the event termination for cause is determined to have not been for cause, the termination shall be deemed to have been a termination for convenience effective as of the same date as the purported termination for cause.

23.4.4 In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

23.4.5 If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

23.4.6 The District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

23.4.7 The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

23.5 Emergency Termination of Public Contracts Act of 1949

23.5.1 This Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

23.5.1.1 Section 4410 of the Government Code states:

In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

23.5.1.2 Section 4411 of the Government Code states:

Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall pay to the other or any other person, under the facts and circumstances in the case.

23.5.2 Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion,

in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted schedule of values, that price shall control. The District, at its sole discretion, may adopt the Contract Price as the reasonable value of the work done or any portion thereof.

23.6 Suspension of Work

23.6.1 District in its sole discretion may suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine upon three (3) days written notice to the Contractor.

23.6.1.1 An adjustment may be made for changes in the cost of performance of the Work caused by any such suspension, delay or interruption. No adjustment shall be made to the extent:

23.6.1.1.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

23.6.1.1.2 That an equitable adjustment is made or denied under another provision of the Contract; or

23.6.1.1.3 That the suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder.

23.6.1.2 Any adjustments in cost of performance may have a fixed or percentage fee as provided in the section on Format for Proposed Change Order herein. This amount shall be full compensation for all Contractor's and its Subcontractor(s)' changes in the cost of performance of the Contract caused by any such suspension, delay or interruption.

24. CLAIMS PROCESS

24.1 Obligation to File Claims for Disputed Work

24.1.1 Should Contractor otherwise seek extra time or compensation for any reason whatsoever ("Disputed Work"), then Contractor shall first follow procedures set forth in the Contract Documents including, without limitation, Articles 15, 16 and 17. A Notice of Potential Change or Proposed Change Order are less formal procedures that proceed the formal claim and do not constitute a Claim. A Claim also does not include correspondence, RFIs, vouchers, invoices, progress payment applications, or other routine or authorized form of requests for progress payments in compliance with the Contract. If a dispute remains, then Contractor shall give written notice to Owner that expressly invokes this Article 25 within the time limits set forth herein.

24.1.2 Contractor's sole and exclusive remedy for Disputed Work is to file a written claim setting forth Contractor's position as required herein within the time limits set forth herein.

24.2 Duty to Perform during during Claims Process

Contractor and its subcontractors shall continue to perform its Work under the Contract including the disputed work, and shall not cause a delay of the Work during any dispute, claim, negotiation, mediation, or arbitration proceeding, except by written agreement by the District.

24.3 Definition of a Claim

24.3.1 Pursuant to Public Contract Code section 9204, the term "Claim" means a separate demand by the Contractor, sent by registered mail or certified mail with return receipt requested, for one or more of the following:

24.3.1.1 A time extension, including without limitation, for relief of damages or penalties for delay assessed by the District under the Contract;

24.3.1.2 Payment by the District of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or to which Contractor is not otherwise entitled to; or

24.3.1.3 An amount of payment disputed by the District.

24.4 Claims Presentation

24.4.1 Form and Contents of Claim

24.4.1.1 If Contractor intends to apply for an increase in the Contract Price or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within thirty (30) days after the event giving rise to the Claim, give notice of the Claim in writing specifically identifying Contractor is invoking this Article 25 Claims Presentation.

24.4.1.2 The Claim shall include an itemized statement of the details and amounts of its Claim for any increase in the Contract Price of Contract Time as provided below, including a Time Impact Analysis and any and all other documentation substantiating Contractor's claimed damages:

24.4.1.2.1 The issues, events, conditions, circumstances and/or causes giving rise to the dispute, and shall show, in detail, the cause and effect of same;

24.4.1.2.2 Citation to provisions in the Contract Documents, statute sections, and/or case law entitling Contractor to an increase in the Contract Price or Contract Time;

24.4.1.2.3 The pertinent dates and/or durations and actual and/or anticipated effects on the Contract Price, Contract Schedule milestones and/or Contract Time adjustments;

24.4.1.2.4 The Time Impact Analysis of all time delays that shows actual time impact on the critical path; and

24.4.1.2.5 The line-item costs for labor, material, and/or equipment, if applicable, for all cost impacts priced like a change order according to Article 17 and must be updated monthly as to cost and entitlement if a continuing claim.

24.4.1.3 The Claim shall include the following certification by the Contractor:

24.4.1.3.1 The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

24.4.1.3.2 Furthermore, Contractor understands that the value of the attached dispute expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from the Work performed on the Project, additional time required on the Project and/or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor may not separately recover for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

24.4.2 Contractor shall bear all costs incurred in the preparation and submission of a claim.

24.4.3 Failure to timely submit a claim and the requisite supporting documentation shall constitute a waiver of Contractor's claim(s) against the District and Contractor's claims for compensation or an extension of time shall be forfeited and invalidated.

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24.5 Claim Resolution pursuant to Public Contract Code section 9204

Contractor may request to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil action or binding arbitration. If Contractor chooses to proceed, Contractor shall comply with the following steps.

24.5.1 STEP 1:

24.5.1.1 Upon receipt of a Claim by registered or certified mail, return receipt requested, including the documents necessary to substantiate it, the District shall conduct a reasonable review of the Claim and, within a period **not to exceed 45 days**, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and Contractor may, **by mutual agreement, extend the time period** to provide a written statement. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of Claim sent by registered mail or certified mail, return receipt requested, the District shall have **up to three (3) days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension**, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

24.5.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

24.5.1.2 Upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. In this instance, District and Contractor must comply with the sections below regarding Public Contract Code section 20104 et seq. and Government Code Claim Act Claims.

24.5.1.3 If the District fails to issue a written statement, or to otherwise meet the time requirements of this section, this shall result in the Claim being deemed rejected in its entirety. A claim that is denied by reason of the District's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of Contractor.

24.5.2 STEP 2:

24.5.2.1 If Contractor disputes the District's written response, or if the District fails to respond to a Claim within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any

portion of the claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed.

24.5.2.1.1.1 Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

24.5.3 STEP 3:

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

24.5.3.1.1 For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

24.5.3.2 Unless otherwise agreed to by the District and Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code section 20104.4 to mediate after litigation has been commenced.

24.5.4 STEP 4:

24.5.4.1 If mediation under this section does not resolve the parties' dispute, the District may, but does not require arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program.

24.6 Subcontractor Pass-Through Claims

24.6.1 If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a District because privity of contract does not exist, the contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim.

24.6.2 Within 45 days of receipt of this written request from a subcontractor, Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District and, if Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

24.6.3 The Contractor shall bind all its Subcontractors to the provisions of this section and will hold the District harmless against Claims by Subcontractors.

24.7 Government Code Claim Act Claim

24.7.1 If a claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Claim Resolution requirements the Contractor shall comply with all claims presentation requirements as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of Government Code as a condition precedent to the Contractor's right to bring a civil action against the District.

24.7.2 Contractor shall bear all costs incurred in the preparation, submission and administration of a Claim. Any claims presented in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein of the claims asserted.

24.7.3 For purposes of those provisions, the running of the time within which a claim pursuant to Public Contract Code section 20104.2 only must be presented to the District shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

24.8 Claim Resolution pursuant to Public Contract Code section 20104 et seq.

24.8.1 In the event of a disagreement between the parties as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve all Claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between Contractor and District by those procedures set forth in Public Contract Code section 20104, et seq., to the extent applicable.

24.8.1.1 Contractor shall file with the District any written Claim, including the documents necessary to substantiate it, upon the application for final payment.

24.8.1.2 For claims of less than fifty thousand dollars (\$50,000), the District shall respond in writing within forty-five (45) days of receipt of the Claim or may request in writing within thirty (30) days of receipt of the Claim any additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor.

24.8.1.2.1 If additional information is required, it shall be requested and provided by mutual agreement of the parties.

24.8.1.2.2 District's written response to the documented Claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

24.8.1.3 For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the District shall respond in writing to all written Claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

24.8.1.3.1 If additional information is required, it shall be requested and provided upon mutual agreement of the District and the Contractor.

24.8.1.3.2 The District's written response to the claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor to produce the additional information or requested documentation, whichever is greater.

24.8.1.4 If Contractor disputes the District's written response, or the District fails to respond within the time prescribed, Contractor may so notify the District, in writing, either within fifteen (15) days of receipt of the District's response or within fifteen (15) days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the District shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

24.8.1.5 Following the meet and confer conference, if the claim or any portion of it remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions the running of the time within which a claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer process.

24.8.1.6 For any civil action filed to resolve claims filed pursuant to this section, within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

24.8.1.7 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of the Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986, (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

24.8.1.8 The District shall not fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract Documents. In any suit filed pursuant to this section, the District shall pay interest due at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

24.8.2 Contractor shall bind its Subcontractors to the provisions of this Section and will hold the District harmless against disputes by Subcontractors.

24.9 Claim Procedure Compliance

24.9.1 Failure to submit and administer claims as required in Article 25 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) not raised in a timely protest and timely claim submitted under this Article 25 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

24.9.2 District shall not be deemed to waive any provision under this Article 25, if at Owner's sole discretion, a claim is administered in a manner not in accord with this Article 25. Waivers or modifications of this Article 25 may only be made by a signed change order approved as to form by legal counsel for both District and Contractor; oral or implied modifications shall be ineffective.

24.10 Claim Resolution Non-Applicability

24.10.1 The procedures for dispute and claim resolutions set forth in this Article shall not apply to the following:

24.10.1.1 Personal injury, wrongful death or property damage claims;

24.10.1.2 Latent defect or breach of warranty or guarantee to repair;

24.10.1.3 Stop payment notices;

24.10.1.4 District's rights set forth in the Article on Suspension and Termination;

24.10.1.5 Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or

24.10.1.6 District rights and obligations as a public entity set forth in applicable statutes; provided, however, that penalties imposed against a public entity by statutes, including, but not limited to, Public Contract Code sections 20104.50 and 7107, shall be subject to the Claim Resolution requirements provided in this Article.

24.11 Attorney's Fees

24.11.1 Should litigation be necessary to enforce any terms or provisions of this Agreement, then each party shall bear its own litigation and collection expenses, witness fees, court costs, and attorney's fees.

25. STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

25.1 Labor Compliance and Enforcement

Since this Project is subject to labor compliance and enforcement by the Department of Industrial Relations ("DIR"), Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code and Title 8 of the California Code of Regulations, including, without limitation, the requirement that the Contractor and all Subcontractors shall timely furnish complete and accurate electronic certified payroll records directly to the DIR. The District may not issue payment if this requirement is not met.

25.2 Wage Rates, Travel, and Subsistence

25.2.1 Pursuant to the provisions of Article 2 (commencing at section 1770), Chapter 1, Part 7, Division 2, of the Labor Code, 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 to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Contractor shall obtain and post a copy of these wage rates at the job site.

25.2.2 Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

25.2.3 Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

25.2.4 If during the period this bid is required to remain open, the Director of the Department of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

25.2.5 Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount (believed by the District to be currently up to

two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates, determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

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

25.2.7 Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by Labor Code section 3093, and similar purposes.

25.2.8 Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

25.3 Hours of Work

25.3.1 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 Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Contractor 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.

25.3.2 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 Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

25.3.3 Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty-five dollars (\$25)) for each worker employed in the execution of this Contract by 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 forty (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.

25.3.4 Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

25.4 Payroll Records

25.4.1 Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online on a weekly basis and within ten (10) days of any request by the District or Labor Commissioner at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> or current application and URL, 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 the Contractor and/or each Subcontractor in connection with the Work.

25.4.1.1 The CPRs enumerated hereunder shall be filed directly with the DIR on a weekly basis or to the requesting party, whether the District or DIR, within ten (10) days after receipt of each written request. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District may not make any payment to Contractor until:

25.4.1.1.1 Contractor and/or its Subcontractor(s) provide CPRs acceptable to the DIR; and

25.4.1.1.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the DIR in a timely manner may directly delay Contractor's payment.

25.4.2 All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

25.4.2.1 A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

25.4.2.2 CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the DIR.

25.4.2.3 CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by 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 Contractor.

25.4.3 Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or 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 Contractor awarded Contract or performing Contract shall not be marked or obliterated.

25.4.4 Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

25.4.5 In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit up to one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Labor Commissioner, these penalties shall be withheld from progress payments then due.

25.4.6 **[RESERVED]**

25.5 **[RESERVED]**

25.6 **Apprentices**

25.6.1 Contractor acknowledges and agrees that, if this Contract involves a dollar amount greater than or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Contractor to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

25.6.2 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.

25.6.3 Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which she/he is registered.

25.6.4 Only apprentices, as defined in section 3077 of the Labor Code, 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. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

25.6.5 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Contractor or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

25.6.6 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractor may be required to make contributions to the apprenticeship program.

25.6.7 If Contractor or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

25.6.7.1 Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

25.6.7.2 Forfeit as a penalty to District the full amount as stated in 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 and under the authority of the Chief of the Division of Apprenticeship Standards.

25.6.8 Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

25.6.9 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, 9th floor, San Francisco, California 94102.

25.7 Non-Discrimination

25.7.1 Contractor herein agrees to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246; and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

25.7.2 Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

25.8 Labor First Aid

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. § 651 *et seq.*) and the California Occupational Safety and Health Act of 1973 (Lab. Code, § 6300 *et seq.*; 8 Cal. Code of Regs., § 330 *et seq.*).

26. [RESERVED]

27. MISCELLANEOUS

27.1 Assignment of Antitrust Actions

27.1.1 Section 7103.5(b) of the Public Contract Code states:

In entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, which 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.

27.1.2 Section 4552 of the Government Code states:

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

27.1.3 Section 4553 of the Government Code states:

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

27.1.4 Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

27.1.5 Under this Article, "public purchasing body" is District and "bidder" is Contractor.

27.2 Excise Taxes

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 Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that 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 District. No Federal Excise Tax for such materials shall be included in any Contract Price.

27.3 Taxes

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 et seq. of the Revenue and Taxation Code, Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

27.4 Shipments

Contractor is responsible for any or all damage or loss to shipments until delivered and accepted on Site, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

27.5 Compliance with Government Reporting Requirements

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, Contractor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

SPECIAL CONDITIONS

1. Mitigation Measures
2. Modernization Projects
3. Badge Policy for Contractors
4. Substitution for Specified Items
5. Weather Days
6. Owner-Controlled or Wrap-Up Insurance Program
7. Insurance Policy Limits
8. Permits, Certificates, Licenses, Fees, Approval
9. Project Labor Agreement/Payroll Records
10. As-Builts and Record Drawings
11. Disabled Veteran Business Enterprises
12. Construction Manager
13. Program Manager
14. Federal Funds
15. Preliminary Schedule of Values

SPECIAL CONDITIONS

1. Mitigation Measures

Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 *et seq.*)

2. Modernization Projects

2.1 Access. Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Work is to start. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by the Contractor, unless at the discretion of the District, other arrangements are made in advance.

2.2 Keys. Upon request, the District may, at its own discretion, provide keys to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the keys are lost or stolen, or if any unauthorized party obtains a copy of a key or access to the school.

2.3 Maintaining Services. The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

2.4 Maintaining Utilities. The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

2.5 Confidentiality. Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

2.6 Work during Instructional Time. By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to

school operations and any use of school facilities by the public up to, and including, rescheduling specific work activities, at no additional cost to District.

2.7 No Work during Student Testing. Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests.

3. Badge Policy for Contractors

All Contractors doing work for the District will provide their workers with identification badges. These badges will be worn by all members of the Contractor's staff who are working in a District facility.

3.1 Badges must be filled out in full and contain the following information:

3.1.1 Name of Contractor

3.1.2 Name of Employee

3.1.3 Contractor's address and phone number

3.2 Badges are to be worn when the Contractor or his/her employees are on site and must be visible at all times. Contractors must inform their employees that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request.

3.3 Continued failure to display identification badges as required by this policy may result in the individual being removed from the Project or assessment of fines against the Contractor.

4. Substitution for Specified Items

4.1 Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.

4.1.1 If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.

4.1.2 This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(c); therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

4.2 A request for a substitution shall be submitted as follows:

4.2.1 Contractor shall notify the District in writing of any request for a substitution at least ten (10) days prior to bid opening as indicated in the Instructions to Bidders.

4.2.2 Requests for Substitutions after award of the Contract shall be submitted within thirty-five (35) days of the date of the Notice of Award (for work included in RFP), within thirty-five (35) days of the date of receipt of bids for individual trade packages.

4.3 Accompanying substitution request, Contractor shall provide data substantiating a request for substitution of "an equal" item, including but not limited to the following:

4.3.1 All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;

4.3.2 Available maintenance, repair or replacement services;

4.3.3 Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

4.3.4 Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and

4.3.5 The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

4.4 No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:

4.4.1 The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;

4.4.2 The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;

4.4.3 The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;

4.4.4 The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and

4.4.5 The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.

4.5 In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

4.6 In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

4.7 Contractor shall be responsible for any costs the District incurs for professional services, DSA fees, or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods. District may deduct those costs from any amounts owing to the Contractor for the review of the request for substitution, even if the request for substitution is not approved. District, at its sole discretion, shall deduct from the payments due to and/or invoice Contractor for all the professional services and/or DSA fees or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods arising herein.

5. Weather Days

Delays due to Adverse Weather conditions will only be permitted in compliance with the provisions in the General Conditions and only if the number of days of Adverse Weather exceeds the following parameters and Contractor can verify that the excess days of Adverse Weather caused delays:

January	<u>7</u>	July	<u>0</u>
February	<u>6</u>	August	<u>0</u>
March	<u>6</u>	September	<u>0</u>
April	<u>3</u>	October	<u>2</u>
May	<u>1</u>	November	<u>5</u>
June	<u>0</u>	December	<u>6</u>

6. Insurance Policy Limits

All of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than ___TBD_____. The limits of insurance shall not be less than:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	[E.G.] Low Risk: \$1,000,000 per occurrence; \$2,000,000 aggregate
		Intermediate Risk: \$2,000,000 per occurrence; \$4,000,000 aggregate
		High Risk: \$5,000,000 per occurrence; \$10,000,000 aggregate]
Automobile Liability – Any Auto	Combined Single Limit	[E.G.] Personal vehicles: \$500,000 Commercial vehicles: \$2,000,000
		Personal vehicles: \$100,000 per person/ \$300,000 per accident]
Workers’ Compensation		Statutory limits pursuant to State law
Employers’ Liability		[E.G. \$5M]
Builder’s Risk (Course of Construction)		Replacement Cost
Pollution Liability		[E.G. \$1M per claim; \$2M aggregate]

7. Permits, Certificates, Licenses, Fees, Approvals

7.1 Payment for Permits, Certificates, Licenses, Fees, and Approvals. As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, approvals, and certificates necessary for the prosecution of the Work with the exception of the following:

7.1.1 DSA permit fees

With respect to the above-listed items, Contractor shall be responsible for securing such items; including payment of these charges or fees. Contractor shall notify the District of the amount due with respect to such items and to whom the amount is payable. Contractor shall provide the District with an invoice and receipt with respect to such charges or fees.

7.2 General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities

7.2.1 Contractor acknowledges that all California school districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities (storm water requirements):

7.2.1.1 Projects that disturb less than one acre of land and are not part of a larger common plan of development or sale, in accordance with Title 24, Chapter 5.106.1, shall prevent the pollution of stormwater runoff from the construction activities through one or more of the following measures:

7.2.1.1.1 Comply with lawfully enacted stormwater management and/or erosion control ordinance.

7.2.1.1.2 Prevent loss of soil through wind or water erosion by adhering to a Storm Water Pollution Prevention Plan ("SWPPP") implementing an effective combination of erosion and sediment control and good housekeeping best management practices ("BMPs").

7.2.1.1.2.1 Soil loss BMP's that should be considered for implementation as appropriate for each project include, but are not limited to, the following:

7.2.1.1.2.1.1 Scheduling construction activity during dry weather, when possible.

7.2.1.1.2.1.2 Preservation of natural features, vegetation, soil, and buffers around surface waters.

7.2.1.1.2.1.3 Drainage swales or lined ditches to control stormwater flow.

7.2.1.1.2.1.4 Mulching or hydroseeding to stabilize disturbed soils.

7.2.1.1.2.1.5 Erosion control to protect slopes.

7.2.1.1.2.1.6 Protection of storm drain inlets (gravel bags or catch basin inserts).

7.2.1.1.2.1.7 Perimeter sediment control (perimeter silt fence, fiber rolls).

7.2.1.1.2.1.8 Sediment trap or sediment basin to retain sediment on site.

7.2.1.1.2.1.9 Stabilized construction exits.

7.2.1.1.2.1.10 Wind erosion control.

7.2.1.1.2.1.11 Other soil loss BMP's acceptable to the enforcing agency.

7.2.1.1.2.2 Good housekeeping BMP's to manage construction equipment, materials, non-stormwater discharges, and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:

7.2.1.1.2.2.1 Dewatering activities.

7.2.1.1.2.2.2 Material handling and waste management.

7.2.1.1.2.2.3 Building materials stockpile management.

7.2.1.1.2.2.4 Management of washout areas (concrete, paints, stucco, etc.).

7.2.1.1.2.2.5 Control of vehicle/equipment fueling to contractor's staging area.

7.2.1.1.2.2.6 Vehicle and equipment cleaning performed off site.

7.2.1.1.2.2.7 Spill prevention and control.

7.2.1.1.2.2.8 Other housekeeping BMP's acceptable to the enforcing agency.

7.2.1.2 Projects that disturb one acre or more of land, or disturb less than one acre of land but are part of a larger common plan of development or sale shall comply with all lawfully enacted stormwater discharge regulations in accordance with Title 24, Chapter 5.106.2.

7.2.2 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

7.2.3 At no additional cost to the District, Contractor shall provide a Qualified Storm Water Practitioner who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

7.2.3.1 At least forty eight (48) hours prior to a forecasted rain event, implementing the Rain Event Action Plan (REAP) for any rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site; and

7.2.3.2 Monitoring any Numeric Action Levels (NALs), if applicable.

8. Project Stabilization Agreement/Payroll Records

The District has entered into a Project Stabilization Agreement ("PLA"), which covers this Project. Accordingly, the following provision is added as Section 26.4.6:

26.4.6 As Contractor and its subcontractors have agreed to be bound by the terms of the PLA entered into by the District [on or about / dated] _____, Contractor and its subcontractors may be excused from uploading CPRs electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> , or by using a more current application and URL. However, within ten (10) days of any request by the District or Labor Commissioner, Contractor and its subcontractors shall provide CPRs 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 the Contractor and/or each subcontractor in connection with the Work.

9. As-Builts and Record Drawings

9.27 Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files plus one set of record Drawings

10. Disabled Veteran Business Enterprise

Pursuant to Education Code section 71028 and Public Contract Code section 10115, the District has a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended each year on District projects. Therefore, the lowest responsive responsible bidder awarded the Contract must submit the Disabled Veteran Business Enterprise Participation Certification to the District with its executed Agreement, identifying the steps contractor took to solicit DVBE participation in conjunction with this Contract.

11. Construction Manager

The District will use a Construction Manager on the Project that is the subject of this Contract. Swinerton Management Company is the Construction Manager for this Project.

12. Program Manager

AECOM is the Program Manager designated for the Project that is the subject of this contract.

13. Federal Funds

As this Project is funded in whole or in part by federal funds, Contractor and all Subcontractors are subject to civil or criminal prosecution for any violation of the federal False Claims Act set forth under section 1001 of title 18 and section 231 of title 31 of the United States Code.

13.27.1

END OF DOCUMENT

SECTION 01 01 50

ADDITIONAL REQUIREMENTS FOR DIVISION OF THE STATE ARCHITECT

PART 1 - GENERAL

1.1 GENERAL:

1.1.1 The following additional requirements apply to this Project that is being reviewed by the Division of the State Architect (DSA).

1.2 ADDITIONAL REQUIREMENTS:

1.2.1 In addition to the duties specified in the Contract Documents, the duties of the Design Builder shall be in accordance with the requirements specified in Title 24 of the California Code of Regulations (CCR).

1.2.2 In addition to the duties specified in the Contract Documents, the duties of the Architect and the Architect's consultants shall be in accordance with the requirements specified in Part 1, Title 24, CCR.

1.2.3 DSA is not subject to arbitration proceedings.

1.2.4 Notify DSA at start of construction in accordance in Part 1, Title 24, CCR.

1.2.5 Design Builder shall submit 100 % Construction Documents to DSA for approval.

1.2.6 Design Builder shall schedule a Presubmittal meeting with DSA and the Design Build Team to obtain specific requirements from DSA for submittal of construction documents and to make DSA aware of the scheduled submittal date.

1.2.7 If and when applicable, addenda and change orders shall be submitted to and approved by DSA. Do not begin any work under an addendum or change order until such applicable DSA approval is obtained. Addenda and change orders shall be in accordance in Part 1, Title 24, CCR.

1.2.8 If and when applicable, do not begin work under a written order until a change order has been submitted to and approved by DSA in accordance with Part 1, Title 24, CCR. Substitutions effecting structural, fire/life/safety or access compliance shall be submitted as change orders for DSA approval. The Design Builder will be responsible for the additional architectural and engineering costs associated with the review and regulatory processing of these substitutions.

1.2.9 Unless otherwise indicated or specified, perform the work in conformance with the latest edition of applicable regulatory requirements. A copy of Part 1 and Part 2 of Title 24, CCR shall be available on the Project site. If and when applicable, the codes adopted by the City, County, State and Federal agencies shall govern minimum requirements for this Project.

1.2.10 Design Builder shall submit verified reports in accordance with Part 1, Title 24, CCR.

- 1.2.11 DSA may supervise construction, reconstruction, or repair in accordance with Part 1, Title 24, CCR.
- 1.2.12 Construction shall be observed by a full-time Project Inspector approved by DSA in accordance with Part 1, Title 24, CCR.
- 1.2.13 Testing requirements of the District's Testing Laboratory shall be in accordance with Part 1, Title 24, CCR.
- 1.2.14 Special Inspection on masonry construction, glued laminated lumber, wood framing using timber connectors, ready-mixed concrete, gunite, pre-stressed concrete, high strength steel bolt installation, welding, pile driving, and mechanical and electrical work shall be as required by Part 1, Title 24, CCR. The costs of special inspection will be paid for by the District.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

**SECTION 01 05 50
CONFORMANCE SURVEYING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01330 – “Submittal Procedures”
- C. Section 01050 – “Field Engineering”
- D. Section 01780 – “Project Record Documents”
- E. Division 2 through 33 Sections for Conformance Surveying requirements for the work in those Sections

1.3 SUMMARY

- A. All necessary Project conformance surveying and Project layout Work shall be completed by a Land Surveyor currently licensed in the State of California, and be based on established site bench marks, monuments, lines and levels necessary for the Work covered by this Contract without additional cost to the District.
- B. Scope of Work: Provide conformance surveying required for proper completion of the Work including, but not limited to:
 - 1. All applicable Project components.

1.4 SUBMITTALS

- A. Design Builder will be required to submit seven (7) hard copies, wet stamped and signed by the licensed Land Surveyor and one (1) electronic copy on CD, of all conformance surveys for the Project.

PART 2 – PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 LAYING OUT THE WORK

- A. Prior to beginning work, Design Builder shall secure the electronic grading plan. The Surveyor shall provide all conformance survey drawings both as-constructed spot elevations and compare these elevations to those on the Contract Documents for the same location. Design Builder shall show the difference in these two numbers.
- B. Accuracy to all Surveys provided in this section shall be to 0.01 feet.

END OF SECTION 01 05 50

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- 1.1.1 The Contract Documents, including, without limitation, Section 00 50 00 (Form of Agreement) and other Division 00 and 01 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- 1.2.1 Project Identification: Engineering Technology Renovation Project

- 1.2.2 The Work consists of the construction of the Engineering Technology Renovation Project for the Contra Costa Community College District (CCCD)

- 1.2.3.1 The project will consist of a newly renovated and expanded Engineering Technology (ET) building which will provide a state-of-the-art facility that will support student-centered, equity-infused learning and teaching environments for the next 30 to 40 years. It will house existing Architecture, Engineering, Construction, Mechanical Technology, Electronics and Electronic Technology, Industrial Design, Energy Systems programs, future ET programs, and a Math & Engineering Student Success Center. The general scope for this project includes the selective demolition of the existing early 1970's era ET building to preserve its current structural systems, bringing those structural systems up to current code, rebuilding within the existing footprint to completely modernize the overall facility and its systems for current and future programs, provide for expansion or reconfiguration of existing spaces to house a supportive and collaborative learning center for math students, and students in the ET programs by including a new Math and Engineering Student Success Center.
- The renovated Engineering Technology building is envisioned to include approximately 33,000SFT of existing building SFT that will be completely updated and modernized space for existing and future ET programs, plus the addition of up to 7,000SFTof new Math & Engineering Student Success Center space. The building area when completed is anticipated to be approximately 40,000 SF, which includes renovation of the north side (11,000 SF), renovation of the south side (22,000 SF), and the addition of a new Math & Engineering Student Center of up to 7,000 SFT. The project seeks to also reimagine the building's architectural presence so that it will serve as both a focal point and an inspiring invitation to the DVC campus from south access points.

- 1.2.3.2 The DBE will ensure adequate protection of the facility and vehicular and pedestrian traffic at all times.

- 1.2.4 All descriptions or "general summaries" of the work noted in this section, or elsewhere within the contract documents, are without force and effect on the contract work described and indicated in detail in the construction plans and specifications. These descriptions and summaries are for general reference and

descriptive purposes only and in no way offer the complete and concise description of all the work required by the contract documents.

1.3 CONTRACT

Project will be designed and constructed under the terms of the Criteria Documents and Contract Documents, including Section 00 50 00 (Form of Agreement).

1.4 USE OF PREMISES

1.4.1 Limit use of site and premises to allow:

1.4.1.1 Site preparation, construction, close-out, clean-Up, and commissioning of an educational facility, all as required by the Criteria Documents and by the Contract Documents herein.

1.4.1.2 All lawful purposes as prescribed by the Board of Trustees of the Contra Costa Community College District.

1.4.1.2 Existing Building to remain in use during Renovation of the Locker Room Facility.

1.4.1.4 Faculty and student parking to be maintained during construction.

1.4.2 Site Access for District activities: Coordinate with Campus staff to minimize impacts to ongoing District operations.

1.4.3 Construction Operations: Limited to area shown on drawings.

1.4.4 Work Hours: The campus will be occupied; however, construction shall be scheduled during normal working hours 7 am to 5 pm. Application of hot fluid applied rubber and asphalt waterproofing may be scheduled during normal working hours, however, any other odorous work, such as application of water repellents, are to be scheduled on a weekend. Weekend work may take place, but must be scheduled with the Project Manager.

1.4.1.1 Start times: Monday – Friday 7 am – 5 pm.

1.4.1.2 Hours noted above to be maintained unless otherwise discussed and approved by District.

1.5 WORK SEQUENCE

1.5.1 Construct work in phases to accommodate District's occupancy requirements during the construction period; coordinate Design Builder's Construction Schedule and operations with District's Representative.

1.6 DISTRICT OCCUPANCY

1.6.1 Cooperate with the District in all construction operations including the following to minimize conflict and to facility District usage.

1.6.2 If and when it should be necessary for the Design Builder to impact the day to day operations of the District's functions in order to pursue the Work, the Design Builder shall furnish adequate notice to the District and coordinate the means and timing to avoid, minimize or circumvent such impacts. The District reserves the right to assess and anticipate such impacts and the right to stop or postpone the Work until a mutually satisfactory time and means can be agreed upon.

1.7 EXAMINATION OF EXISTING CONDITIONS

1.7.1 Design Builder shall be held to have examined the Project Site and acquaint itself with the conditions of the Site or of the streets or roads approaching the Site.

1.7.2 Prior to commencement of Work, Design Builder shall survey the Site and existing buildings and improvements to observe existing damage and defects such as cracks, sags, broken or damaged glazing, other building elements and Site improvements and other damage.

1.7.2.1 Should Design Builder observe cracks, sags and other damage to and defects of the Site and adjacent buildings, paving and other items not indicated in the Contract Documents, Design Builder shall immediately report same to the District.

1.8 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

1.8.1 The Criteria documents and other drawings show above-grade and below-grade structures, utility lines and other installations that are known or believed to exist in the area of the Work. Design Builder shall locate these existing installations before proceeding with excavation and other operations that could damage same; maintain them in service, where appropriate; and repair damage to them caused by the performance of the Work. Should damage occur to the existing installations, the costs of repair shall be at the Design Builder's expense and made to the District's satisfaction.

1.8.2 Design Builder shall be alert to the possibility of the existence of additional structures and utilities. If Design Builder encounters additional structures and utilities, Design Builder will immediately report to the District for disposition of same.

1.9 UTILITY SHUTDOWNS AND INTERRUPTIONS

1.9.1 Design Builder shall give the District a minimum of three (3) days written notice in advance of any need to shut off existing utility services or to effect equipment interruptions. The District will set exact time and duration for shutdown, and will assist Design Builder with shutdown. Work required to reestablish utility services shall be performed by the Design Builder.

1.10 WORK UNDER OTHER CONTRACTS

1.10.1 District may award separate contract(s) for performance of certain construction operations at Project site. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.11 FUTURE WORK

1.11.1 District may award separate contract(s) for additional work to be performed at the site after Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract

1.12 PRODUCTS ORDERED IN ADVANCE

1.12.1 District may negotiate Purchase Orders with suppliers of material and equipment to be incorporated into the Work. District may assign these Purchase Orders to Design Builder.

1.13 DISTRICT-FURNISHED PRODUCTS

1.13.1 District may provide District-furnished products. The Work may include providing support systems to receive District's equipment and plumbing, mechanical, and electrical connections.

1.14 SPECIFICATION FORMATS AND CONVENTIONS

1.14.1 Specification Format: The Specifications are organized into Divisions and Sections using the 33-division format and CSI/CSC's "Master Format" numbering system.

1.14.2 Specification Content: 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:

1.14.2.1 Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. 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.

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

1.14.2.2.1 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

WORK COVERED BY CONTRACT DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

This Section includes summary of work including:

- 1.1.1 Work covered by Contract Documents
- 1.1.2 Work under other contracts
- 1.1.3 Future work
- 1.1.4 Work sequence
- 1.1.5 Cooperation of Design Builder and coordination with other work
- 1.1.6 Maintenance
- 1.1.7 Occupancy requirements
- 1.1.8 Reference Standards
- 1.1.9 Products or services ordered in advance
- 1.1.10 District furnished products
- 1.1.11 Execution

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- 1.2.1 The work includes to construct the Engineering Technology Renovation Project for the Contra Costa Community College District.
- 1.2.2 The DBE will ensure adequate protection of the facility and vehicular and pedestrian traffic at all times.
- 1.2.3 The Contract requires Design Builder to commission and turn over the Engineering Technology Renovation Project to District as a completed project in accordance with the terms and conditions of the Contract Documents. The Project is more fully described in the Criteria Documents included with this Project Manual and the Design Builder's Proposal.
- 1.2.4 Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by the Contract Documents shall rest with Design Builder until Final Completion and Acceptance of the Work by the District or termination of the Design-Build Contract, whichever occurs first.

1.3 WORK UNDER OTHER CONTRACTS

- 1.3.1 DBE to provide Geotechnical Engineering report.
- 1.3.2 DBE to provide testing for hazardous materials.

1.4 FUTURE WORK

- 1.4.1 Not Used.

1.5 WORK SEQUENCE

- 1.5.1 Not Used.

1.6 COOPERATION OF DESIGN BUILDER AND COORDINATION WITH OTHER WORK.

- 1.6.1 Should construction work, or work of any other nature, be underway by other forces or by other contractors within or adjacent to the limits of the Work at the time of executing the Contract, or should work be performed under the contracts listed in paragraphs 1.3 and 1.4 above, the Design Builder shall cooperate with all such other contractors or forces to the end that any delay or hindrance to their work will be avoided. The cost of such cooperation will be considered as included in the contract price and no additional payment will be made therefor. Design Builder shall coordinate with such other contractors and forces as required by Document 00 50 00 (Agreement).
- 1.6.2 District reserves the right to perform other or additional work, within or adjacent to the limits of the Work specified, at any time by the use of other forces. In the event that the performance of such other or additional work materially increases or decreases Design Builder’s costs, the work and the amount to be paid therefor will be appropriately adjusted as determined by District.
- 1.6.3 Design Builder shall limit use of the Site for the Work and for construction operations to allow for:
 - 1.6.3.1 District’s operations
 - 1.6.3.2 Work by other contractors
- 1.6.4 Design Builder shall coordinate use of and access to the Site with other contractors, utilities, and District’s forces, as required by Document 00 50 00 (Agreement). District has final authority over coordination, use of premises, and access to the Site.
- 1.6.5 Design Builder shall cooperate with District and others who may occupy or begin work on Site and inside any building thereon prior to completion of Work of this Contract.
- 1.6.6 Design Builder shall cooperate with contractors for other area work, not included in Contract, but which may take place during construction period.
- 1.6.7 Design Builder, and all design consultants and major subcontractors shall participate in partnering sessions as described in Section 00 50 00 (Agreement).

1.7 MAINTENANCE

- 1.7.1 Cost of maintenance of systems and equipment prior to Substantial Completion, as defined in section 00 50 00 (Form of Agreement), is included in the Contract Price and no additional payment will be made therefor.

1.8 OCCUPANCY REQUIREMENTS

- 1.8.1 Whenever, in the opinion of District, Work or any part thereof is in a condition suitable for use, and the best interest of District requires such use, District may take Beneficial Occupancy of and connect to, open for public use, or use the Work or such part thereof pursuant to paragraph 8.16.3 (Beneficial Occupancy) of paragraph 1.7 of section 00 50 00 (Agreement). In such case, District will inspect the Work or part thereof, and issue a Certificate of Beneficial Occupancy for that part of Work.

- 1.8.2 Prior to date of Final Acceptance of the Work by District, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to defective design, materials or workmanship or to operations of Design Builder, shall be made at expense of Design Builder, as required in section 00 50 00 (Agreement).
- 1.8.3 Use by District of Work or part thereof as contemplated by this Section shall in no case be construed as constituting acceptance of Work or any part thereof. Such use shall neither relieve Design Builder of any responsibilities under Contract, nor act as a waiver by District of any of the requirements thereof.
- 1.8.4 District may specify in the Contract Documents that portions of the Work, including electrical and mechanical systems or separate structures, shall be substantially completed on milestone dates prior to the Substantial Completion of all of the Work. Design Builder shall notify District in writing when Design Builder considers any such part of the Work ready for its intended use and substantially complete and request District to issue a Certificate of Substantial Completion for that part of the Work.

PART 2 - PRODUCTS

2.1 REFERENCE STANDARDS

2.1.1 For products specified by association or trade standards, comply with requirements of District standards, except where more rigid requirements are specified or are required by applicable codes.

2.2 PRODUCTS OR SERVICES ORDERED IN ADVANCE

2.2.1 District furnished products listed in paragraph 2.3 below will be procured under separate contracts and provided by District or vendor to Design Builder for installation under the terms of paragraph 1.6 above. Design Builder to provide utility service and stub out connections as necessary for the installation of District furnished products.

2.3 DISTRICT FURNISHED PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

- 3.1 Internet/Web-Based Project Management Software. The Design Builder is directed to use the project's existing Internet/Web-based project management software, to track and manage the project, as described in Section 01 31 20 Project Management Software.

END OF SECTION

DESIGN SERVICES AND DELIVERABLES

PART 1 - GENERAL

1.1 SUMMARY

This Section includes a summary of the Work including:

- 1.1.1 Design Services
- 1.1.2 Proposal Phase
- 1.1.3 Design Confirmation Phase
- 1.1.4 Construction Documents Phase
- 1.1.5 Construction Phase
- 1.1.6 Operation/Project Close Out

1.2 DESIGN SERVICES

1.2.1 Summary of Design and Technical Requirements

- 1.2.1.1 The Criteria Documents set forth the District's minimum design and construction requirements for the Project that the Design Builder shall meet in preparing designs and constructing the Project. Design Builder shall prepare designs to meet these requirements and submit deliverables as described in these requirements. The requirements of this Section supplement but do not supersede the requirements of the Criteria Documents.
- 1.2.1.2 As required in this specification, Design Builder shall submit designs and deliverables meeting the requirements of the Contract Documents at the completion of the 100% Schematic Design, 100% Design Development, 50% Construction Documents and 100% Construction Documents. DBE shall obtain District approval at each milestone prior to continuing with design. Design Builder may elect to create incremental packages of major building components or activities it deems advantageous towards scheduling or permitting efficiencies.
- 1.2.1.3 Unless specifically and expressly limited, Design Builder's scope of work shall include all engineering, procurement and construction necessary to complete the Project.

1.2.2 Summary of Work

- 1.2.2.1 Unless specifically excluded from this Contract, Design Builder shall provide to District all professional architectural, engineering services and other specialty consultants as necessary to perform Design Builder's obligations under the Contract Documents and to complete the Project including, but not limited to, the requirements of the Criteria Documents, as modified, if at all, pursuant to section 00 50 00 (For of Agreement) (the "Services").

- 1.2.2.2 Design Builder shall perform the Services using the persons and subconsultants listed in Design Builder's Pre-Qualification Questionnaire and Proposal and may substitute personnel or subconsultants only upon the District's written consent, which is in District's discretion but will not be unreasonably withheld. Design Builder represents that it and its subconsultants possess all necessary training, qualifications, licenses and permits to perform the Services, and that their performance of the Services will conform to the standard of practice of a professional that specializes in performing professional services of like nature and complexity of the Services. Design Builder's licensed subconsultants (architectural, engineering and other specialty consultants) shall owe a duty of care to the District in performing their architectural and engineering portions of the Services.
- 1.2.2.3 Design Builder and its subconsultants shall make an independent assessment of the accuracy of the information provided by the District concerning existing conditions (including but not limited to existing utilities and structures and tie-ins to existing or contemplated facilities) and the adequacy of available design information/technical reports. Design Builder shall rely on the results of its own independent investigations and not on information provided by District. Design Builder shall conduct such further investigations of existing conditions as are necessary for Design Builder to perform the Services and shall advise District of any further design or other services necessary to complete the Project.
- 1.2.2.4 Design Builder's design shall provide that all surfaces, fixtures and equipment are readily accessible for maintenance, repair or replacement by ladders, power lifts, cat walks, and the like without exceeding the design loads of the floors, roofs, ceilings, and that such access is in conformance with Cal OSHA. All drawings, shop drawings and specifications in the Construction Documents, structural, electrical and other design calculations, site data, and any other deliverable required by State or Federal law shall comply with State and Federal standards. Design Builder shall comply with any other requirements of public or private authorities with jurisdiction over the Project, the Construction Documents, or tie-ins to the Project. Design Builder shall comply with the applicable standard of care of a specialist when preparing Construction Documents to comply with applicable building codes, ordinances, statutes, laws, District standards, governmental regulations and private restrictions, including necessary tie-ins, applicable to the Project and the Services, including, but not limited to, those listed in this Contract, all environmental, energy conservation, energy tie-in, and disabled access requirements, regulations and standards of State and local Fire Marshals or other authorities having jurisdiction over the Project.
- 1.2.2.5 District at all times shall have the right (but not the duty) to review Design Builder's design work, whether performed by Design Builder or a subconsultant of any tier, and whether in a final or preliminary form, to determine progress and conformance to the requirements of the Contract Documents. In the event the District should ever dispute the conformance of any design work (at any stage) with the intent of the Contract Documents, then the District's determination shall control and the Design Builder and/or its subconsultants shall perform the

disputed design services and/or work to completion in accord with the District's determination. The Design Builder shall, however, retain its rights under the procedure of Article 13 of section 00 50 00 (Agreement) for disputes and claims, and Design Builder may under that procedure and in its name advance any claim of a subconsultant of any tier.

- 1.2.2.6 All work associated with the abatement of hazardous materials is the responsibility of the Design Builder. The Design Builder shall employ an industrial hygienist to perform and monitor the work. Refer to Section 01 88 20 (Miscellaneous Hazardous Materials Performance Requirements) for additional information.
- 1.2.2.7 All work associated with permanent signage and wayfinding is the responsibility of the Design Builder.
 - 1.2.2.7.1 The Design Builder will work closely with the District and the District Standards to develop signage and wayfinding scope that meets the needs of the Project. The Wayfinding and Signage subconsultant shall address the following items while developing their design:
 - 1.2.2.7.1.1 Changeability – Design must allow for the cost effective modification as the needs of the Project change over time. Signage should be specified so that the District can easily update signage on site.
 - 1.2.2.7.1.2 Durability and Maintenance – Signage and wayfinding materials must be extremely durable and easily maintainable.
 - 1.2.2.7.1.3 Coordination with other disciplines such as architecture, interior design, and lighting design to ensure a coordinated and integrated wayfinding design.
 - 1.2.2.7.1.4 Readability and universal messages that intuitively meet the needs of the District.
 - 1.2.2.7.1.5 Code Compliance.
 - 1.2.2.7.1.6 Exterior and site wayfinding that identifies the Project, main entry, vehicular access, pedestrian access, property boundaries, and directions on surrounding City streets.
 - 1.2.2.7.1.7 Interior wayfinding that identifies the Project identity, department identification, room identification, and staff specific signage.
 - 1.2.2.7.1.8 Enhanced environmental graphics that consider appropriate application of electronic media, interactive technologies, public artwork and

architectural solutions to address wayfinding challenges.

1.2.2.7.2 The Design Builder will submit its design for signage and wayfinding to the District in accordance with the provisions of this Section.

1.2.2.8 Design Builder's Interior Design Services.

1.2.2.8.1 The Design Builder shall provide all Interior Design services for the Project.

1.2.3 Coordination of Architectural and Engineering Subconsultants/Other Contractors

1.2.3.1 Design Builder shall fully coordinate all architectural and engineering disciplines and subconsultants involved in completing the Work, including but not limited to, all subconsultants employed by Subcontractors or suppliers. Design Builder's subconsultants of all tiers shall fully coordinate with Design Builder and all architectural and engineering disciplines and subconsultants involved in completing the Work.

1.2.3.1.1 Design Builder shall require its subconsultants to agree in their subcontracts to coordinate with Design Builder and other subconsultants.

1.2.3.1.2 See Section 01 31 19 (Project Meetings) for minimum meeting requirements.

1.2.4 Project Master Schedule

1.2.4.1 Design Builder shall complete or cause to be completed all services required under this Agreement in accordance within Contract Time as defined in Article 9 of Section 00 50 00 (Form of Agreement) as well as all approved project schedules and updates thereto.

1.2.4.2 Design Builder shall provide District with a design and construction schedule that outlines dates and time periods for the delivery of Design Builder's services and requirements for information from the District for the performance of its services. The Project Master Schedule will include activities for completing the project design documents (through release for construction), significant construction milestones, construction submittals and long lead item procurement, dates for decisions by District affecting schedule, and utility interruptions affecting Project operations. For more detailed information refer to Section 00 50 00 (Agreement).

1.2.4.3 The Project Master Schedule shall be updated monthly, and shall meet the following requirements:

1.2.4.3.1 The schedule shall fit within and coordinate with the Milestone Schedule in Exhibit B of Section 00 50 00 (Form of Agreement) including any and all design interfaces.

1.2.4.3.2 The schedule shall be in fully operational Primavera® (latest edition) computer software format.

1.2.4.4 Design Builder shall adjust and cause its retained subconsultants and Subcontractors to adjust activities, personnel levels, and the sequence, duration and relationship of services to be performed in a manner that will comply with the approved schedules.

1.2.4.5 Design Builder has no restraints on when it may bid or assign work to Subcontractors.

1.2.5 Deliverables Required Under This Agreement - General

All deliverables required under this Agreement shall be submitted in full compliance with the Contract Documents, shall be submitted in at least triplicate (or such greater number as the District may reasonably request) and, when contained on electronic media, shall be submitted in printed form as well as on electronic media when requested by the District. In the event of a conflict between the electronic version and hard copy versions of Design Builder's documents, the hard copy shall govern.

DBE shall provide interior and exterior color boards and materials for District approval. Final presentation shall include both interior and exterior elevations for approval.

Deficiencies in deliverables and modifications to conform to program requirements and modifications to achieve acceptability of deliverables to District, shall be promptly performed as part of the Stipulated Sum.

1.3 PROPOSAL & RECONCILIATION PHASE

1.3.1 Proposal Phase Documents

In response to the Request for Proposal the Design Builder shall submit Proposal Phase Documents as required by the Request for Proposal. Upon selection by CCCD, DBE shall work with the District to Reconcile and finalize scope of Work as specified in Section 00 26 40 (Rules and Procedures for Discussions and Negotiations).

1.4 DESIGN CONFIRMATION PHASE

1.4.1 Period of Service

1.4.1.1 After reconciliation of the Design Builder's Proposal, and upon written authorization from the District, Design Builder shall proceed with the performance of the services called for in the Collaboration Phase, as described in Section 00 50 00 (Form of Agreement). The intent of the Design Builder's Design Collaboration Phase is to obtain District approval for design revisions, refinements, and concept elaborations produced by the Design Builder prior to formal Design and Construction Document Production. Design Builder may elect to submit Collaboration Phase Documents incrementally by major building phases, components, or areas to facilitate economy of schedule provided overall design concept is clear and adhered to.

- 1.4.1.2 Design Builder shall submit deliverables required to execute and manage the Collaboration Phase including a revised detailed Cost Estimate with breakdown of all Project Costs.
- 1.4.1.3 Design Builder shall at the outset of this Phase make full written disclosure to District, and obtain District's express written approval of, any proposed innovative, unique, proprietary or sole source design features. District retains full discretion to disapprove such features.

1.5 DESIGN AND CONSTRUCTION DOCUMENTS PHASE

1.5.1 Period of Service

- 1.5.1.1 After acceptance by the District of the requirements of the Collaboration Phase, and upon written authorization from the District, Design Builder shall proceed with the performance of the services called for in the Design and Construction Document Phases.
- 1.5.1.2 Design Builder shall submit the deliverables required by these Phases, within the period approved and required in the Project Milestone Schedule.

- 1.5.2 Construction Documents Design Builder shall prepare final Construction Documents to show the work to be furnished and performed by Design Builder. The Construction Documents shall become a part of the Contract Documents. Construction Documents shall set forth in detail the requirement for construction of all work to be performed by Design Builder. Construction Documents shall not supersede the Contract Documents where the Contract Documents contain a more stringent requirement. Construction Documents shall consist of all site, architectural, structural, MEP and specialty design drawings, specifications, calculations and details to obtain all regulatory approvals and construct the project.

1.5.2.1 Architectural

- 1.5.2.1.1 Completed site plan.
- 1.5.2.1.2 Completed floor plans, elevations, and sections.
- 1.5.2.1.3 Architectural details and large blow-ups completed.
- 1.5.2.1.4 Finish, door, and hardware schedules completed, including all details.
- 1.5.2.1.5 Site utility plans completed.
- 1.5.2.1.6 Fixed equipment details and identification completed.
- 1.5.2.1.7 Reflected ceiling plans completed.

1.5.2.2 Structural

- 1.5.2.2.1 Structural floor plans and sections with detailing completed.
- 1.5.2.2.2 Structural calculations completed.

- 1.5.2.3 Mechanical
 - 1.5.2.3.1 Large scale mechanical details completed including fire sprinkler system.
 - 1.5.2.3.2 Mechanical schedules for equipment completed.
 - 1.5.2.3.3 Completed mechanical schematic for environmental cooling and exhaust equipment.
 - 1.5.2.3.4 Complete energy conservation calculations and report necessary for compliance with California Title 24 energy requirements.

- 1.5.2.4 Electrical
 - 1.5.2.4.1 Lighting and power plan showing all switching and controls. Fixture schedule and lighting details completed.
 - 1.5.2.4.2 Distribution information on power consuming equipment, including lighting, power, signal and communication device(s) branch wiring completed.
 - 1.5.2.4.3 All electrical equipment schedules completed.
 - 1.5.2.4.4 Low Voltage and special system component and distribution plans completed including Fire Alarm system.
 - 1.5.2.4.5 Electrical load calculations completed.

- 1.5.2.5 Civil
 - 1.5.2.5.1 All site plans, site utilities, parking and roadway systems completed.

1.5.3 Attend Required Meetings Attend meetings with community, representatives of the District and its designated consultants and appropriate governmental agencies and provide information and diagrams to fully describe the project.

1.5.4 Deliverables Contractor shall submit one (1) electronic copy of all milestone documents, including Collaboration, 100% SD, 100% DD, 50% CD & 100% CD, and two (2) hard copies to District.

1.5.5 Specifications shall be prepared in conformance with the most current edition available of Master Format of the Construction Specification Institute. Design Builder shall have complete responsibility to secure timely review and approval by all authorities with jurisdiction, including but not limited to the Division of the State Architect. It is the intent of the District to work in close coordination to assist the Design Builder in the plan review process to support a timely review and approval process schedule.

1.5.6 The same architectural and engineering team (and team personnel) that prepare documents submitted to authorities with jurisdiction shall complete the Construction Documents.

- 1.5.7 Compliance with Codes, Regulations and Requirements Prepare Construction Documents in full compliance with the Contract Documents, applicable building codes, ordinances, District standards, governmental regulations and private restrictions, applicable to the Work.
- 1.5.8 Make full written disclosure to District, and obtain District's express written approval of, any proposed innovative, unique, proprietary or sole source design features.
- 1.5.9 Warranty Design Builder warrants to District that the final design, as expressed in the Construction Documents: :
- 1.5.9.1 Will be constructible, workable, serviceable and within the Design Builder's detailed estimate of costs and schedule;
 - 1.5.9.2 Will comply in all respects with the requirements of the Contract Documents (Certificate of Warranty) and (Certificate of Warranty Fire and Life Safety) listed in Section 00 45 00.
 - 1.5.9.3 Will not call for the use of hazardous or banned materials.
 - 1.5.9.4 Will fully comply with applicable building codes, ordinances, standards, governmental regulations and private restrictions, applicable to the Work.
- 1.5.10 Cost Estimate The Design Builder shall submit to the District an updated Cost Estimate and identify cost changes since the Proposal Estimate (providing one (1) electronic copy). This estimate shall consist of unit costs applied to the Element Level (Level 3 National Institute of Standards and Technology Uniformat II Classification) items and quantities of work. This estimate shall be organized in a format acceptable to the District. The District will use this estimate for cost reconciliation and design change order reviews.

1.6 CONSTRUCTION PHASE

- 1.6.1 Upon District's acceptance of Design Builder's Construction Documents for technical divisions or other portions of the Work as Design Builder and District may agree, Design Builder may commence construction of the Work shown.
- 1.6.2 General Administration of Construction Design Builder's architectural, design, and engineering, and other subconsultants, including the industrial hygienist, shall make regular visits to the site at intervals appropriate to the various stages of construction as necessary to assure that construction conforms to the final design of the Construction Documents as approved.
- 1.6.3 Quality Control and Reporting Design Builder's architectural, design, and engineering, and other subconsultants, including the industrial hygienist, shall participate fully in Design Builder's required quality control program and shall have a duty to advise Design Builder and District in writing of any observations of defective work, work not in conformance with Construction Documents, and lack of progress consistent with the schedule of work in areas associated with their services. See Section 01 45 00 (Quality Control).
- 1.6.4 Design Builder's architectural, design, and engineering subconsultants, including the industrial hygienist, shall establish and maintain to the satisfaction of District,

a computer database compatible with databases maintained by District. The Design Builder's database shall maintain complete and accurate records regarding its activities related to fulfilling the requirements of Section 01 45 00 (Quality Control). Design Builder shall make such database available to District at all reasonable times and turn over the database in both hard and electronic form to District upon completion or termination of this Agreement.

- 1.6.5 Together with District, Design Builder and Design Builder's architectural, design, and engineering subconsultants, shall visit the Project to observe any apparent defects in the construction, correct such deficiencies, and supply information as needed regarding replacement, correction, or diminished value of defective work.
- 1.6.6 Design Builder shall provide to District for District's approval two (2) copies of a color schedule, samples of types and size acceptable to the District of textures and finishes of all materials in the Work at the Project. Actual materials to be used in the construction of the building shall be mounted on a board(s) suitable for display purposes for faculty, staff and the community to observe. Provide separate color boards for interior and exterior finishes.

1.7 OPERATION/PROJECT CLOSE-OUT PHASE

- 1.7.1 Operation/Close Out During the Operation/Project Close-Out Phase, Design Builder and Design Builder's architectural, design, and engineering subconsultants shall, when requested by District, provide all necessary architectural, design and engineering services, including services of its architectural, design and engineering subconsultants, for:
 - 1.7.1.1 Refining, adjusting and correcting of any equipment or systems.
 - 1.7.1.2 Start-up, testing and placing in operation all equipment and systems. See Section 01 35 50 (CALGreen Environmental Requirements).
 - 1.7.1.3 Completion of punch list work and observation of any apparent defects in the completed construction, correction of such deficiencies, and supply information as needed regarding replacement, correction, or diminished value of defective work.
 - 1.7.1.4 Training District's staff to operate and maintain all equipment and systems. Training shall be professionally videotaped with two (2) copies provided to District for their use.
 - 1.7.1.5 Assisting District in developing systems and procedures for control of the operation and maintenance of and record keeping for the Project.
 - 1.7.1.6 Preparation of electronic record sets and sets of reproducible record prints or Drawings showing those changes made during the construction process, based on the marked-up prints, Drawings and other data.

1.8 DESIGN BUILDER'S OBLIGATION FOR FINISHED CONSTRUCTION

- 1.8.1 District's right to review Design Builder's design including, but not limited to, Construction Documents, shop drawings, samples and submittals, as specified in the Contract Documents, shall not relieve Design Builder of its responsibility for a complete design and construction complying with the requirements of the

Contract Documents; but rather, such review shall be in furtherance of the District's monitoring and accepting the design as developed and issued by the Design Builder, consistent with these Contract Documents. Design Builder's responsibility to design and construct the Project in conformance with the Contract Documents including, but not limited to, the applicable performance standard and any fully executed change orders, shall be absolute. Such duty may not be altered or diminished by any action other than a signed change order.

- 1.8.2 Auto CAD, Revit, and Other Electronic Data (BIM) Provide all electronic files of all Construction Documents drawings including as-bid, as-built, and all record Drawings. Prepare electronic record sets and sets of reproducible record prints or Drawings showing those changes made during the construction process. Electronic data shall conform to District requirements for compatibility with District equipment and software.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

END OF SECTION

WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1. The Contract Documents, including Section 00 50 00 (Form of Agreement) and other Division 0 and 1 Specification Sections, apply to this Section.

1.2 USE OF PREMISES

1.2.1 Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1.2.1.1 Limits: Confine constructions operations to Limit of Work as shown in the Bridging Documents.

1.2.1.2 District Occupancy: Not Used.

1.2.1.3 Driveways, Entrances and Parking: Keep driveways, entrances and parking serving adjacent properties available for access and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

1.2.1.3.1 Schedule deliveries to minimize impact to adjacent properties and projects.

1.2.1.3.2 Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.2.2 Use of Existing Building: Maintain existing building in a weather-tight condition throughout construction period. Immediately repair damage caused by construction operations. Protect building and its occupants during construction period.

1.3 OCCUPANCY REQUIREMENTS

1.3.1 Full District Occupancy: Cooperate with District during construction operations to minimize conflicts and facilitate District usage. Perform the Work so as not to interfere with District's operations.

1.3.2 Partial District Occupancy: District reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.

1.3.2.1 District will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before District occupancy.

- 1.3.2.2 Obtain a Certificate of Occupancy from authorities having jurisdiction before District occupancy.
- 1.3.2.3 Before partial District occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, see Section 01 77 00 (Cleaning and Closeout Procedures) for requirements.
- 1.3.2.4 On occupancy, District will assume responsibility for maintenance and custodial service for occupied portions of building.
- 1.3.2.5 Prior to occupancy for each phase Design Builder shall satisfy all of the requirements as set forth in Section 01 77 00 (Cleaning and Closeout Procedures).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

CONSTRUCTION MANAGEMENT PLAN

PART 1 - GENERAL

1.1 ENVIRONMENTAL CONTROLS

1.1.1 Noise: All work shall be performed with a minimum of noise or disruption to normal activities in the surrounding areas. Design Builder will allow up to twenty-one (21) Calendar Day notice for any work to be done outside the hours of Work allowed by Contra Costa Community College District.

1.1.2 The following noise control procedures shall be employed:

- 1.1.2.1 Maximum increase in noise shall be limited to approximately 15db over ambient and shall not exceed regulatory standards for noise.
- 1.1.2.2 The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process shall be established prior to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.
- 1.1.2.3 All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- 1.1.2.4 All mobile or fixed noise-producing equipment used on the project, which is regulated for noise output by a local, state, or federal agency, shall comply with such regulation while in the course of project activity.
- 1.1.2.5 Electrically-powered equipment instead of pneumatic or internal combustion powered equipment shall be used, where feasible and needed to control excessive noise.
- 1.1.2.6 Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.

- 1.1.2.7 Construction site and access road speed limits shall be established and enforced during the construction period.
- 1.1.2.8 The hours of material transport shall be restricted to the periods and days permitted by both this contract and local noise or other applicable ordinance.
- 1.1.2.9 The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.
- 1.1.2.10 No project related public address or music system shall be audible at any adjacent noise-sensitive receptor.

1.1.3 Dust: Dust control is a critical activity. The Design Builder shall prepare a submittal that identifies source air pollution and related pollution reduction measures. The following dust control measures shall be employed:

- 1.1.3.1 Implement fugitive dust control measures as provided in Bay Area Air Quality Management District (BAAQMD).
- 1.1.3.2 Develop a staging area, vehicle and truck routes, and a daily meeting to assure all applicable control measures are established for that particular workday.
- 1.1.3.3 Dust barriers shall be provided by the Design Builder as necessary to contain dust within the construction site.
- 1.1.3.4 If necessary, install a water misting system along fence perimeter or any other necessary area to prevent fugitive dust from creating a.
- 1.1.3.5 Reduce the use of diesel fuel powered equipment and use equipment with alternative fuel whenever practical to minimize diesel exhaust emissions in areas close proximity to the site.
- 1.1.3.6 Turn off equipment when not in use for long periods of time. No idling of diesel-fueled equipment for durations longer than five minutes.
- 1.1.3.7 Control fugitive dust at active soil grading/excavation areas, using water in a manner that would not impact soil compaction. Continuous wet-down may be required in the area of construction activity.

- 1.1.3.8 Use ground-covering such as mulch, wood chips, straws, hydro-seeding, surfactants, or plastic sheeting to cover inactive exposed areas to minimize fugitive dust.
- 1.1.3.9 Provide drainage for erosion control measures.
- 1.1.3.10 Use sand bags, as necessary, along site perimeter to keep soil on site.
- 1.1.3.11 Provide gravel entry way into construction site entrance to reduce/eliminate mud and sediment carried off site by vehicles.
- 1.1.3.12 Cover top of haul trucks to eliminate wind-blown fugitive dust.
- 1.1.3.13 Schedule haul trucks and material delivery trucks to prevent traffic congestion. Set up truck queuing area and have staff communicate via cell phone for efficiency.
- 1.1.3.14 As necessary, use street sweepers along travel routes in general vicinity of project area.
- 1.1.3.15 All vehicle routes are to be watered for dust control. All existing roadway and parking surfaces impacted by construction activity are to be swept and kept free of debris and dust. All areas within the construction site are to be broom swept as required to keep dust and debris to a minimum.
- 1.1.3.16 Limit the number of haul trucks on site and establish a haul route. Install a gravel or base road on site for loading trucks. Haul route shall be reviewed and approved by District.
- 1.1.3.17 Place on-site portable toilets away from adjacent properties.
- 1.1.3.18 All stockpiles shall be kept moist throughout the day to minimize particulate matter emissions. Wet down stockpiles on a regular basis including prior to end of work day.
- 1.1.3.19 Haul roads shall be paved, lined with gravel or base material, or kept moist to minimize particulate matter emissions.
- 1.1.3.20 Where practical, use paddle-wheel scrapers instead of traditional scrapers to minimize fugitive dust and reduce exhaust emissions.

- 1.1.3.21 Handling of soil shall be kept to a minimum.
- 1.1.3.22 Provide a boundary/zone where equipment shall not enter and if necessary, equipment shall operate on alternative fuel to reduce diesel particulate matter.

1.1.4 Odors: When odors are a concern, arrangements shall be made by the Design Builder for their containment or control. Where this is not feasible, specific arrangements should be made to minimize disturbance to surrounding properties. Where controllable, fumes and odors shall not be allowed to migrate. The Design Builder shall immediately notify the District's Representative of any migrating odors.

1.1.5 Vibrations: The impacts of vibration activities will be limited. If vibration becomes an impact to surrounding properties, the Design Builder shall stop operations, reschedule and/or implement the following with the approval of the District Representative:

- 1.1.5.1 Route heavily loaded trucks and equipment away from surrounding residential properties if possible.
- 1.1.5.2 Phase earthmoving and ground-impacting operations so as not to occur in the same time period, to the extent practicable. The total vibration level produced could be less when each vibration source operates separately.
- 1.1.5.3 Avoid vibratory rollers and packers near vibration-sensitive areas.

1.1.6 Environmental Mitigation Measures: Design Builder shall become familiar with the full text of the project's Environmental Impact Report/Negative Declaration Report and take responsibility for implementation of applicable mitigation measures. Questions about which items are applicable to the Design Builder shall be directed to the District's Representative.

1.2 SHIPMENTS AND MATERIALS

1.2.1 Equipment and materials shall not be shipped to the site unless specific arrangements are made for receipt and acceptance of these items. When such shipments are authorized, they are the total responsibility of the

Design Builder. The District accepts no responsibility for the receipt, storage, or protection of the Design Builder's materials and equipment.

1.3 SALVAGE AND DISPOSAL

- 1.3.1 All existing property of the District that is removed from the construction site and has been identified to be salvaged by the District shall be delivered to a secure site as specified by the District's Representative.
- 1.3.2 Construction debris, or material that has no redeemable value, is to be placed in Design Builder-furnished refuse bins for safe and legal removal from the premises. District refuse bins may not be utilized unless so authorized by the District.

1.4 PARKING

- 1.4.1 The District's Representative will meet with the Design Builder to determine parking requirements.
- 1.4.2 The primary parking and storage areas shall be designated.
- 1.4.3 Design Builder and related personnel shall park in authorized areas only.

1.5 SANITARY

- 1.5.1 Design Builder shall provide temporary toilet facilities adjacent to areas of Work. The Design Builder will not be allowed to use project site restroom facilities being constructed.
- 1.5.2 Design Builder shall submit proposed location of temporary toilet(s) to the District's Representative for approval.
- 1.5.3 Construction personnel will not be allowed to use restroom facilities being constructed for personal or equipment clean-up.
- 1.5.4 Sanitary Facilities shall be in accordance with OSHA regulations.

1.6 FOOD

- 1.6.1 Construction personnel shall police their own areas during breaks. All cups, cans, paper, wrappers, and discarded food must be placed in trash receptacles at the end of each break.
- 1.6.2 Design Builder shall submit the proposed location of any break and eating areas to the District's Representative for approval.
- 1.6.3 Construction personnel are not allowed to have food within the project, whether those facilities exist or are under construction.

1.7 **ITEMS to be included in DBE lump sum General Conditions** in RFP Proposal shall include, but are not limited to the following:

1.7.1 Offsite parking for DBE administrative, management and Supervisory staff, craft labor included in general conditions (i.e. clean-up and safety workers).

1.7.2 Temporary toilets and hand wash stations.

1.7.2.1 Refer section 01 52 00 for further detail on items to be included

1.7.3 Temporary barricades, fencing, gates to protect all students, faculty, staff and general public from construction activities. Barricades shall be lit as necessary for safety and security and shall be continuously maintained.

1.7.4 General clean-up of construction site on a daily basis, including debris boxes and off-site removal of trash.

1.8 **SMOKING AND TOBACCO**

1.8.1 Smoking, and chewing tobacco are not permitted on the Project site.

1.8.2 Smoking and chewing tobacco are not permitted within the facilities during or after construction.

1.9 **SECURITY**

1.9.1 Comply with requirements of Article 14 of Section 00 50 00 (Form of Agreement).

1.9.2 All personnel must obey and act immediately upon any request by District security or law enforcement personnel.

1.9.3 A list of emergency phone numbers will be provided by the District Representative.

1.10 **SAFETY**

1.10.1 General

1.10.1.1 Watch for guests, invitees, and unauthorized personnel at all times.

1.10.1.2 Work only where there is a positive barrier separation, with "green screen" between construction activities and others.

1.10.1.3 Clean up all areas immediately in occupied areas.

- 1.10.1.4 Do not drape cords across corridors. All cords must be attached to the ceiling or taped to the floor (use tape with non-marring adhesive).
- 1.10.1.5 Maintain a minimum of 8'-0" clear within all corridors.
- 1.10.1.6 Do not leave materials or equipment in the corridor.

1.10.2 Safety equipment and consideration should include, but are not limited to:

- 1.10.2.1 Anyone known to be under the influence of alcohol or drugs shall be dismissed from the Project at once and not be allowed to return.
- 1.10.2.2 Offensive language is not permitted in any area where it may be overheard by surrounding properties.
- 1.10.2.3 Provide adequate emergency first aid equipment.
- 1.10.2.4 Post location and emergency phone numbers for local medical care.
- 1.10.2.5 Monitor safe ladder usage.
- 1.10.2.6 Provide exhaust controls for equipment.
- 1.10.2.7 Monitor noise levels and establish safe limitations.
- 1.10.2.8 Ensure adequate ventilation for air contaminants.
- 1.10.2.9 Insist on personal protective equipment, such as hard hats, safety shoes, and eye, ear, and face protection equipment.
- 1.10.2.10 Safety nets, belts, and lifelines shall be used, as appropriate.
- 1.10.2.11 Provide adequate emergency fire protection equipment.
- 1.10.2.12 Post location and emergency phone numbers for local fire departments.
- 1.10.2.13 Provide safe storage for all flammable and combustible materials.
- 1.10.2.14 Insist on safe and proper use of hand power tools and electrical drop cords.
- 1.10.2.15 Operation of cranes, derricks, and hoists should be in accordance with manufacturer's

recommendations and appropriate ANSI and CAL-OSHA regulations.

- 1.10.2.16 All construction operations and personnel are subject to CAL-OSHA and applicable District Environmental Health & Safety regulations.
- 1.10.2.17 Provide adequate barricades and safety lighting at all open trenches adjacent to public access.
- 1.10.2.18 Properly fence entire confines of project site so as to avoid public access or unauthorized personnel.
- 1.10.2.19 All wall, floor, and ceiling penetrations shall be sealed to maintain fire and smoke ratings in accordance with CBC, NFPA 99 and Life Safety Code.
- 1.10.2.20 All emergency exit passages must be maintained free of obstructions.
- 1.10.2.21 Provide barricades and fencing in accordance with Section 00 50 00 (Agreement) or applicable law.

1.10.3 Fire Prevention During Welding, Cutting, and Other Hot Work

- 1.10.3.1 All hot work shall be in accordance with industry standards and CAL-OSHA requirements.
- 1.10.3.2 Hot work includes welding, heat treating grinding, thawing pipe, powder-driven fasteners, hot riveting, and similar applications producing a spark, flame, or heat.
- 1.10.3.3 The Design Builder shall ensure that only approved apparatus, such as torches, manifolds, regulators, or pressure-reducing valves, and acetylene generators, are used.
- 1.10.3.4 The Design Builder shall ensure that all individuals involved in hot work are:
 - 1.10.3.5 Trained in the safe operation of their equipment and the safe use of the process.
 - 1.10.3.6 Have an awareness of the inherent risks involved and understand the emergency procedures in the event of a fire.
 - 1.10.3.7 Are aware if any special risks, such as flammable materials or hazardous conditions at the hot work site.

1.10.4 Project Inspector

1.10.4.1 Provision of inspectors by the District, if any, pursuant to provisions of this section shall be subject to following:

1.10.4.1.1 Design Builder shall allow inspectors full access to project at all times Work is in progress.

1.10.4.1.2 Design Builder shall not take any direction, approvals or disapprovals from inspectors.

1.10.4.1.3 Design Builder shall not rely on inspectors to ensure Work is completed in accordance with Contract documents.

1.10.4.2 Acts or omissions of any inspector (including, without limitation, inspector's failure to observe or report deficiencies in Design Builder's Work) shall not relieve Design Builder from its responsibility to complete Work in accordance with Contract documents.

1.10.5 Directory For Assistance

A list of emergency phone numbers will be provided by the Engineering Department Service Center or the District's Representative.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF DOCUMENT

SECTION 01 25 00
CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01310 – “Construction Scheduling”
- C. Section 01311 – “Project Management and Coordination”
- D. Section 01330 – “Submittal Procedures”
- E. Section 01770 – “Contract Closeout Procedures”
- F. Divisions 2 through 33 Sections for Contract Modification Procedures requirements for the work in those Sections

1.3 SUMMARY

- A. Any change in scope of Work or deviation from Contract Documents including, without limitation, extra work, or alterations or additions to or deductions from the original Work, shall not invalidate the original Contract, and shall be performed under the terms and conditions of the Contract Documents.
- B. Changes in the work generally will begin with Requests for Information (RFI), followed by a response from the District and/or Architect, and possibly a Request for Proposal (RFP), a Design Builder Proposed Change Order (PCO), a negotiated Proposed Change Order, followed by a formal Change Order (CO) authorizing the Change in the Work. A Construction Directive (CD) may be used in the absence of agreement on the terms of the Change in the Work.

1.4 CHANGES - No Changes Without Authorization

- A. There shall be no change whatsoever in the drawings, specifications, or in the Work without a District executed Change Order, District executed Construction Change Directive, or District approved no cost order for a minor change in the Work as herein provided. **Changes meeting the definition of DSA Construction Change Document Category A require DSA review and approval and shall be submitted by the Architect of Record to DSA as a Construction Change Document in accordance with IR A-6.**
- B. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District’s Governing Board has authorized the same and the cost thereof approved in writing by Change Order or executed Construction Change Directive.

- C. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted in writing in the Change Order.
- D. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications. Notwithstanding anything to the contrary in this Section, all Change Orders shall be prepared and issued by the District and shall become effective when executed by the District's Governing Board and the Design Builder.
- E. Should any Change Order result in an increase in the Contract price, the cost of such Change Order shall be agreed to, in writing, in advance by Design Builder and District and be subject to the monetary limitations set forth in Public Contract Code. In the event that Design Builder proceeds with any change in Work without first notifying District and obtaining the District's consent to a Change Order, Design Builder waives any claim of additional compensation for such additional work.

DESIGN BUILDER UNDERSTANDS, ACKNOWLEDGES, AND AGREES THAT THE REASON FOR THIS NOTICE REQUIREMENT IS SO THAT DISTRICT MAY HAVE AN OPPORTUNITY TO ANALYZE THE WORK AND DECIDE WHETHER THE DISTRICT SHALL PROCEED WITH THE CHANGE ORDER OR ALTER THE PROJECT SO THAT SUCH CHANGE IN WORK BECOMES UNNECESSARY.

1.5 REQUEST FOR INFORMATION ("RFI")

- A. Definition: An RFI is a written request prepared by the Design Builder requesting the Architect to provide additional information necessary to clarify or amplify an item which the Design Builder believes is not clearly shown or called for in the drawings or specifications, or to address problems which have arisen under field conditions. The Design Builder shall not submit an RFI to the District or the Architect if it pertains to a Subcontractor's request for clarification of the Design Builder's Subcontract or Design Builder's construction documents, or any other Contract Documents prepared by the Design Builder.
- B. Scope: The RFI shall reference all the applicable Contract Documents including specification section, detail, page numbers, drawing numbers, and sheet numbers, etc. The Design Builder shall make suggestions and interpretations of the issue raised by the RFI. An RFI cannot modify the Contract Cost, Contract Time, or the Contract Documents. The Design Builder shall use RFI format provided by the District.
 - 1. The Design Builder shall be responsible for Design Builder and Subcontractor costs to implement and administer RFIs throughout the duration of the Project. The Design Builder shall maintain an RFI log with all RFIs, including revisions, listed with a short description of the request, the date, the status, and the disposition of the RFI. Regardless of the number of RFIs submitted, the Design Builder shall not be entitled to additional compensation.
 - 2. The Design Builder shall be responsible for both the District and District consultant's costs, including the Architect, for answering RFIs if an RFI requests an interpretation or decision of a matter where the information sought is equally available to the party making such request, as determined by the District; at the District's discretion, such costs may be deducted from progress payments or the final payment.

3. The District may issue a Request for Proposal which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications. The Design Builder shall then prepare and submit an estimate within seven (7) Calendar Days. If the Design Builder fails or refuses to submit a Proposal within said seven (7) day period, the District's Representative or the District shall determine the fair and reasonable cost of the Work indicated in a Request for Proposal which shall be binding on the Design Builder.
4. Supplemental Instruction or Bulletin: The Architect or the District may issue an Architect's Supplemental Instruction (ASI) or Bulletin to the Design Builder.
 - a. If the Design Builder is satisfied with the Supplemental Instruction or Bulletin and does not request change in Contract Sum or Contract Time, then the direction of the Work shall be executed without a Change Order.
 - b. If the Design Builder believes that the Supplemental Instruction or Bulletin results in a change in Contract Sum or Contract Time, then the Design Builder shall notify the District in writing within five Calendar Days after receiving the response. If the District disagrees with the Design Builder, then the Design Builder may give notice of intent to submit a Claim as described in the General Conditions, and submit its Claim within five Calendar Days of the District's response. If the District agrees with the Design Builder, then the Design Builder must submit a cost or time extension proposal within seven (7) Calendar Days of the District's response to the RFI. The Design Builder's failure to deliver either the foregoing notice of Claim or proposal by the respective deadlines stated above shall result in waiver of the right to file a proposal or Claim.
- C. The Design Builder shall reference each RFI to an activity of the Construction Schedule and shall note time criticality of the RFI, indicating time within which a response is required. The Design Builder's failure to reference RFI to an activity on the Construction Schedule and note time criticality on the RFI shall constitute the Design Builder's waiver of any claim for time delay or interruption to the Work resulting from any delay in responding to the RFI. The Design Builder must submit time critical RFIs at least seven (7) Days prior to the scheduled start date of the affected Work activity.
- D. Response Time: The Architect must respond to a RFI in writing within a reasonable time, normally seven (7) days for routine RFIs, after receiving such request. If the Architect's response results in a change in the Work, then such change shall be effected by a written CO or Construction Change Directive, if appropriate. If the Architect cannot respond to the RFI within a reasonable time, the Architect shall notify the Design Builder, with a copy to the Inspector and the District, of the amount of time that will be required to respond. The Architect will endeavor to respond within five (5) working Days from receipt of RFI with a written response to the Design Builder, provided that the RFI complies with the paragraph above and is determined by the Design Builder or District to be time critical. Failure of the Design Builder to plan ahead or mitigate problems shall not be cause for a determination that an RFI is time critical. The District or the Architect may return an RFI requesting additional information should the original RFI be incomplete or inadequately describe the information requested or conditions encountered. The Design Builder shall distribute responses to all appropriate Subcontractors.
- E. If the Design Builder is satisfied with the response and does not request a change in Contract Sum or Contract Time, then the response shall be executed without a change.

- F. Only the Design Builder and/or the District may initiate changes in the scope of Work or deviation from Contract Documents. **Changes meeting the definition of DSA Construction Change Document Category A require DSA review and approval and shall be submitted by the Architect of Record to DSA as a Construction Change Document in accordance with IR A-6.**
1. Design Builder may initiate changes by submitting an RFI or a letter providing Notice of Concealed or Unknown Conditions, or Notice of Hazardous Waste Conditions.
 - a. RFIs shall be submitted to seek clarification of or request changes in the Contract Documents. RFIs shall not be submitted to the District seeking clarification of any errors or omissions on behalf of the Design Builder's preparation of the construction documents or any other Contract Documents prepared by the Design Builder.
 - b. Differing Site Conditions: The Design Builder shall submit a Notice of Differing Site Conditions by RFI to resolve problems regarding differing conditions encountered in the execution of the Work pursuant to General Conditions, which shall govern. If the District determine that a change in Contract Sum or Contract Time is justified, the District will issue RFP or CCD.
 - c. Hazardous Waste Conditions: The Design Builder shall submit Notices of Hazardous Waste Conditions by RFI to resolve problems regarding undocumented hazardous materials encountered in the execution of the Work pursuant in General Conditions, which shall govern. If the District determine that a change in Contract Sum or Contract Time is justified, the District will issue RFP or CCD.
 2. The Design Builder may submit to the Architect a written Request for Information (RFI) if one of the following conditions occurs:
 - a. Design Builder discovers what appears to be an unforeseen condition or circumstance that is not described in the Contract Documents.
 - b. The Design Builder discovers what appears to be a conflict or inconsistency within the Contract Documents and the intent of the Contract Documents cannot be reasonably inferred.
 - c. The Design Builders discovers what appears to be an error or omission in the Contract Documents and the intent of the Contract Documents cannot be reasonably inferred.
 - d. The Design Builder considers a portion of the Contract Documents is not sufficiently explained or detailed for the Design Builder to proceed with that portion of the Work.
 - e. The Design Builder who, after a full search of the Contract Documents and upon exercising required due diligence, fails to locate the required information.
- G. If the Design Builder believes that the RFI response results in Change in the Contract Sum or the Contract Time, the Design Builder shall notify the District in writing within five calendar Days after receiving the response. If the District disagrees with the Design Builder, then the Design Builder may give notice of intent to submit a Claim as described in General Conditions, and submit its Claim within 30 Calendar Days of the District's response. If the District agrees with the Design Builder, then the Design Builder must submit a cost or time extension proposal within fourteen (14) Calendar Days of the District's response to the RFI. The Design Builder's failure to

deliver either the foregoing notice of Claim or proposal by the respective deadlines stated above shall result in waiver of the right to file a proposal or Claim.

- H. Design Builder shall identify RFIs with sequential numbering (i.e. 001, 002, 003 etc.) with a separate number assigned to each RFI. Resubmittal of apparent unresolved RFI issues shall be on a new RFI form with the initial RFI number amended with a sequential Revision suffix (.R1, .R2, .R3 etc.) until the issue is resolved.
- I. Unless otherwise directed by the Project Manager, the Design Builder shall submit each RFI on the form required by the District.
 - 1. The Design Builder shall fill in all required information. Include additional information, data, sketches and the like on separate sheets as necessary; limit sheet size to 8-1/2 by 11 inches if possible. RFIs without all required information may be returned without action to the Design Builder for resubmittal. Resubmittal in accordance with the specified requirements shall be the Design Builders' responsibility.
 - 2. The Design Builders own proposed form may be used, if in the Project Manager's judgment, it is equal to the form required by the District and it contains all pertinent information.
- J. In each request, include the following information, type or printed legibly in block letters with black ink:
 - 1. Project name as it appears on the Contract Documents
 - 2. Design Builder's RFI identification number.
 - 3. Title of issue.
 - 4. Contract Document reference pertaining to the issue.
 - 5. Description of issue.
 - 6. Design Builder's proposed written and graphic solution, Architect will determine if the proposal is in compliance with the Contract Documents and design intent of Project. Design Builder's failure to make reasonable effort to propose realistic solutions may result in the Request for Information being returned with no action.
 - 7. Date of submission to Architect.
 - 8. Date that response is needed to avoid impact to Construction schedule and cost. Time for response shall be reasonable to allow for processing and review, research, and written response by the appropriate party.
 - 9. Urgency (normal or high).
 - 10. Justification for high urgency.
 - 11. Design Builders' name and the printed name and signature of Design Builders' representative responsible for issuance of request.
 - 12. Name (individual and company) of responsible for originating RFI and his or her relationship to the Design Builder.
 - 13. Photographic image of condition. Furnish digital image if possible.
 - 14. Photocopy of Contract Documents or sketch of condition (with dimensions) that pertains to this issue.

- K. Limit each RFI to a single subject or issue. RFIs with multiple subject or issues may be returned to the Design Builder without response. Resubmittal in accordance with the specified requirements shall be the Design Builder's responsibility.
- L. Transmit each RFI to the District Project Manager as necessary to expedite the Project and to allow adequate time for review without delay to the Work.
- M. RFIs that do not meet the requirements of this Section will be returned to the Design Builder with an explanation for its return.
- N. Inappropriate RFIs, as described hereinafter, will be returned to the Design Builder with an explanation for its return but without further action:
 - 1. RFIs that are received by the Architect from an entity other than the Design Builder (such as a Subcontractor, Sub-subcontractor, supplier or others.)
 - 2. RFIs that transmit or contain a request for a substitution.
 - 3. RFIs that transmit or constitute a submittal.
 - 4. RFIs that are submitted without the Design Builders' thorough review of the Contract Documents or in a manner that suggests that specific portions of the Contract Documents are assumed to be excluded or taken as an isolated portion of the Contract Documents in part rather than whole.
 - 5. RFIs that are submitted in an untimely manner without adequate coordination or scheduling of the Work or related trades.
 - 6. RFIs that are submitted as a proposed or requested Change Order or other Contract Modification.
 - 7. RFIs that do not constitute a good faith request for required information.
- O. Design Builder shall be responsible for resubmittal of information contained in inappropriate RFIs in accordance with the requirements of the appropriate portion of the Contract Documents.
- P. If information requested by the Design Builder in an RFI is apparent from field observations, is contained in the Contract Documents, or can be reasonably inferred from them, the Design Builder shall be responsible to the District for all reasonable fees charged for additional services required to furnish such information. The amount of such additional services will be deducted from the Design Builder's next payment application by the District.
- Q. The quantity of RFIs submittal by the Design Builder shall not be the basis for any claim by the Design Builder.
- R. Should the Design Builder proceed with Work affect by an RFI issue before receipt of a written response from the Architect within the time described hereinbefore, that portion of the Work not performed in accordance with the requirements of the response shall be subject to the removal and replacement by the Design Builder at no increase in Contract Sum or Contract Time.
- S. Maintain a current and accurate Request for Information Log as follows:
 - 1. For each RFI, include the RFI number, subject matter, date submitted, date returned. Maintain current status of each RFI at all times.
 - 2. Submit log weekly and as requested by Project Manager.

3. Accurately maintain log for the duration of the Contract.

1.6 REQUEST FOR PROPOSAL ("RFP")

- A. Definition: An RFP is a written request prepared by the District requesting the Design Builder to submit to the District an estimate of the effect of a proposed change on the Contract Price and the Contract Time.
- B. Scope: An RFP shall contain adequate information, including any necessary drawings and specifications, to enable Design Builder to provide the cost breakdowns required by this Specification Section. The Design Builder shall not be entitled to any Additional Compensation for preparing a response to an RFP, whether ultimately accepted or not. **Changes meeting the definition of DSA Construction Change Document Category A require DSA review and approval and shall be submitted by the Architect of Record to DSA as a Construction Change Document in accordance with IR A-6.**
- C. District Requested RFP: the Design Builder shall furnish a proposal within fourteen (14) Calendar Days of the District's RFP. Upon approval of RFP, the District will issue a PCO directing the Design Builder to proceed with the extra Work. If the parties do not agree on the price for an RFP, the District may issue a CCD. Upon receipt of CCD, the Design Builder shall promptly proceed with the change of Work involved and concurrently respond to the District's CCD within seven (7) Calendar Days. The Design Builder shall perform the changed Work notwithstanding any claims or disagreements of any nature.

1.7 PROPOSED CHANGE ORDER (PCO) REQUEST

- A. Definition: A PCO is a written request prepared by the Design Builder requesting that the District issue a CO based upon a proposed change called for in an RFP or a claim pursuant to the General Conditions. **Changes meeting the definition of DSA Construction Change Document Category A require DSA review and approval and shall be submitted by the Architect of Record to DSA as a Construction Change Document in accordance with IR A-6.**
- B. Changes in Price: A PCO shall include breakdowns per this specification section to validate any change in Contract Price due to proposed change or claim.
- C. Changes in Time: A PCO shall also include any additional time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Project Schedule as defined in the Construction Scheduling Specifications of these Contract Documents. Any changes in time will be granted only if there is an impact to the critical path. If Design Builder fails to request a time extension in a PCO, then the Design Builder is thereafter precluded from requesting or claiming a delay.
- D. The Design Builder may propose changes by submitting a Proposed Change Order (PCO form, see section 01340) to the District's Representative, describing the proposed change and its full effect on the Work. The Design Builder shall include a statement describing the reason for the change and the effect on the Contract Sum and Contract Time with full documentation including detailed cost and schedule breakout, and a statement describing the effect on Work by separate or other the Contractors. Document any requested substitutions in accordance with the Contract Documents. Cost for Work in approved PCOs shall not be applied for by the Design

Builder or paid by the District until the PCOs are included in a Change Order (CO form, see section 01340)

- E. Cost Proposal and Procedures: Whenever the Design Builder is required in this Section to prepare a Proposed Change Order form (PCO), and whenever the Design Builder is entitled to submit a cost proposal and elects to do so, the Design Builder shall prepare and submit to the District for consideration a proposal using the PCO form found in the Contract Documents, or other similarly prepared form previously approved by the District. All cost proposals must contain detailed line-item backup with a complete breakdown of costs for credits, deducts and extras, which itemizes materials, labor, equipment, taxes, overhead and profit. All Subcontractor Work shall be so indicated. Subcontractor quotes for any subcontractor tier submitted as lump sum or without the required line-item breakdown will be rejected. After receipt of a proposal with a detailed breakdown, the District will act promptly thereon.
1. If the District approves a proposal, the PCO will be routed for Design Builder signatures, the District Representative signatures, and the District signature.
 2. If a proposal is not acceptable to the District because it does not agree with costs and/or time included in the proposal, the District will submit in a response what it believes to be a reasonable cost and/or adjustment, if any. Except, as otherwise provided in this Section, the Design Builder shall have five Calendar Days in which to respond to the District with a revised proposal.
 3. When necessity to proceed with a change does not allow the District sufficient time to conduct a proper cost and schedule analysis of a proposal (or revised proposal), the District may direct the Design Builder to proceed on a basis to be determined at earliest practical date. In this event, the value of the Change, with corresponding equitable adjustment to Contract, shall not be more than the increase or less than the decrease initially proposed.

1.8 CHANGE ORDERS (“CO”)

A Change Order is a written instrument prepared by the Design Builder and signed by the District (as authorized by the District’s Governing Board), the Design Builder, and the DSA (if necessary), stating their agreement upon all of the following:

- A. A description of a change in the Work;
- B. The amount of the adjustment in the Contract Sum, if any; and
- C. The extent of the adjustment in the Contract Time, if any.
- D. Change Order Forms: Whether or not noted on the executed form of Change Order, all Change Orders approved by the District are deemed to include and incorporate the following provision:
“The adjustment of the Contract Price and the Contract Time for the changes noted in a Change Order (the “Changes”) represents the full and complete adjustment of the Contract Price and the Contract Time due the Design Builder for providing and completing such Changes, including without limitation: (i) all costs (whether direct or indirect) for labor, equipment, materials, tools, supplies and/or services; (ii) all general and administrative costs (including without limitation, home office, field office, and Site General Conditions costs) and profit; and (iii) all impacts, delays, disruptions, interferences or hindrances in providing and completing the Changes. (iv) and the removal of any cost of insurance as it relates to what is provided under the OCIP. The

Design Builder waives all rights, including without limitation, those arising under Civil Code Section 1542, for any other adjustment of the Contract Price or the Contract Time on account of a Change Order or the performance and completion of the Changes.”

E. Correlation of Other Items

1. Design Builder shall promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum as shown on the Change Order prior to the last day of the next monthly pay period.
2. Within seven (7) days, Design Builder shall promptly revise Progress schedules, look ahead schedules, and the Design Builders Master Schedule to reflect any Change in Contract Time, revise sub schedules to adjust times for other items of work affected by the change and resubmit to the District for review and approval. The Contractors shall not make changes to tasks in any schedule not impacted by the Change.
3. Design Builder is responsible to promptly enter Changes in Project Record Documents.

F. All Changes:

1. Documentation of Change in Contract Sum and Contract Time:
 - a. Design Builder shall maintain detailed records of all Work performed on a time-and-material basis.
 - b. Design Builder shall document each proposal for a change in cost or time with sufficient data to allow detailed line item evaluation and analysis of the proposal.
 - c. Design Builder shall, on request, provide additional data to support computations for:
 - i) Quantities of products, materials, labor and equipment.
 - ii) Taxes, auto insurance, and bonds.
 - a) Costs associated with the onsite work under general liability, workers compensation, pollution liability and builders’ risks shall not be allowed; unless approved by the District.
 - iii) Overhead and profit.
 - iv) Justification for any change in Contract Time and new Progress Schedule showing revision due, if any. Justification for change shall comply with Construction Scheduling Section 01310.
 - v) Credit for deletions from Contract, similarly documented.
 - d. Design Builder shall support each claim for additional costs and for Work performed under Force Account with additional information including:
 - i) Credit for deletions from Contract, similarly documented.
 - ii) Origin and date of claim.
 - iii) Dates and times Work was performed and by whom.
 - iv) Time records and wage rates paid.
 - v) Invoices and receipts for products, materials, equipment and subcontracts, similarly documented.

G. COST OF CHANGE ORDERS

1. It is the responsibility of the Design Builder to notify the District within five Calendar Days if there is a cost change related to a change in the Work. Notification beyond this time limit may result in future claims being time barred.
2. Within seven (7) Calendar days after a request is made for a change that impacts the Contract Sum, the critical path, or the Contract Time, the Design Builder shall provide the District, with a written estimate of the effect of the proposed CO upon the Contract Sum and the actual cost of construction, which shall include a complete itemized cost breakdown of all labor and material showing actual quantities, hours, unit prices, and wage rates required for the change, and the effect upon the Contract Time of such CO. Changes may be made by District by an appropriate written CO, or, at the District's option, such changes shall be implemented immediately upon the Design Builder's receipt of an appropriate written Construction Change Directive.
3. District may, as provided by law and without affecting the validity of this Agreement, order changes, modification, deletions and extra work by issuance of written CO or Construction Change Directives 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 Design Builder has justified through documentation the impact on the critical path of the Project.
4. The amount of the increase or decrease in the Contract Price from a CO, if any, shall be determined in one or more of the following ways as applicable to a specific situation:
 - a. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. If an agreement cannot be reached within fifteen (15) days after submission and negotiation of Design Builder's proposal, Design Builder may submit a properly formatted claim per the General Conditions and this Specification Section. Submission of sums which have no basis in fact are at the sole risk of Design Builder and may be a violation of the False Claims Act set forth under Government Code Section 12650 et. seq.);
 - b. By unit prices contained in Design Builder's original bid and incorporated in the Project documents or fixed by subsequent agreement between District and Design Builder;
 - c. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee. However, in the case of disagreement, Design Builder must utilize the procedure under this Specification Section; or
 - d. By cost of material and labor and percentage of overhead and profit. (Force Account)

H. COST DETERMINATION

1. Total cost of extra Work or of Work omitted shall be the sum of construction labor costs, material costs, equipment rental costs, as defined herein plus overhead and profit as allowed herein and by the General Conditions. This limit applies in all cases of claims for extra Work, whether calculating cost proposals, Change Orders or CCDs, or calculating claims of all types, and applies even in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. The Design Builder may recover

no other costs arising out of or connected with the performance of extra Work, of any nature. No special, incidental or consequential damages may be claimed or recovered against the District, its representatives or agents, whether arising from breach of contract, negligence or strict liability, unless specifically authorized in the Contract Documents.

2. Application of Overhead and Profit: (Overhead shall be as defined in this Specification Section.)
 - a. Total overhead and profit on labor for extra Work shall not exceed 15 percent.
 - b. Total overhead and profit on materials for extra Work shall not exceed 15 percent.
 - c. Total overhead and profit on equipment for extra Work shall not exceed 10 percent.
 - d. When extra Work is performed by a first tier Subcontractor the Design Builder shall receive a 5 percent markup on Subcontractors' total costs of extra Work. First tier Subcontractor's markup on its Work shall not exceed 15 percent.
 - e. When extra Work is performed by a lower tier Subcontractor, the Design Builder shall receive a total of 5 percent markup on the lower tier Subcontractors' total costs of extra Work. First tier Subcontractors and lower tier Subcontractors shall divide the 15 percent markup as mutually agreed.
 - f. Notwithstanding the foregoing, in no case shall the total markup on any extra Work exceed 20 percent of the direct cost, notwithstanding the actual number of contract tiers.
 - g. On proposals covering both increases and decreases in Contract Sum, overhead and profit shall be allowed on the net increase only as determined in paragraph 1.5 above. When the net difference is a deduction, no percentage for overhead and profit shall be allowed, but rather the deduction shall apply.
 - h. No markup will be allowed on permits, fees, insurance, and bonds.
- I. Taxes: All State sales and use taxes, Contra Costa County and applicable City sales taxes, shall be included. Federal and Excise tax shall not be included.
- J. Accord and Satisfaction: Every Change Order and accepted CCD shall constitute a full accord and satisfaction, and release, of all the Design Builder (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim. The Design Builder may elect to reserve its rights to disputed claims arising from or relating to the changed Work at the time it signs a Change Order or approves a CCD, but must do so expressly in a writing delivered concurrently with the executed Change Order or approved CCD, and must also submit a Claim for the reserved disputed items pursuant to the General Conditions no later than 30 Calendar Days of the Design Builder's first written notice of its intent to reserve rights.
- K. COST BREAKDOWN
 1. Labor: The Design Builder will be paid cost of labor for workers (not including the project superintendent, or forepersons unless forepersons work greater than 50% of the time and then only when authorized by the District), used in actual and direct performance of extra Work. Labor rate, whether employer is the Design Builder, Subcontractor or other forces, will be sum of following:

- a. Actual Wages: Actual wages paid shall include any employer payments to or on behalf of workers for health and welfare, pension, vacation, and similar purposes.
 - b. Labor surcharge: Payments imposed by local, county, state, and federal laws and ordinances, and other payments made to, or on behalf of, workers, other than actual wages such as taxes and ~~worker's compensation insurance~~. Worker's compensation is provided under the OCIP however if Design Builder or its subcontractors are excluded from the OCIP; it shall include cost of worker's compensation insurance in its cost of labor. Such labor surcharge shall not exceed that set forth in the Prevailing Wage schedule which is in effect on date upon which extra Work is accomplished and which schedule is incorporated herein by reference as though fully set forth herein.
 - c. If agreement cannot be reached between the District and Design Builder, or its subcontractors regarding labor productivity rates then Saylor Publications Current Construction Costs, which is in effect on date upon which extra work is performed, and which is incorporated herein by reference, shall be used to determine rates and surcharges. Unless accepted in writing by the District's Representatives, other manuals, including NECA (National Electrical Contractors Association) manual, shall NOT be used as a basis to determine labor rates, labor productivity rates, labor surcharges, or any other costs.
2. Material: Only materials furnished and installed in the Work by the Design Builder and necessarily used in performance of extra Work will be paid for. The Design Builder and any and all subcontractors will submit proof of material cost satisfactory to the District when requested. Cost of such materials will be cost, including sales tax, to purchaser (Design Builder, Subcontractor or other forces) from supplier thereof, except as the following are applicable:
- a. If cash or trade discount by actual supplier is offered or available to purchaser, it shall be credited to the District notwithstanding fact that such discount may not have been taken.
 - b. For materials salvaged upon completion of extra Work, salvage value of materials shall be deducted from cost, less discounts, of materials.
 - c. If cost of a material is, in opinion of the District, excessive, then cost of material shall be deemed to be lowest current wholesale price at which material is available in quantities concerned delivered to Site, less any discounts as provided in this Specification Section.

Unless accepted in writing by the District's Representative, NECA (National Electrical Contractors Association) manual shall NOT be used as a basis to determine any material costs.
3. Equipment Rental: For the Design Builder- or Subcontractor-owned equipment, payment will be made at rental rates listed for equipment in California Department of Transportation official equipment rental rate schedule which is in effect on date upon which extra Work is accomplished and which schedule is incorporated herein by reference as though fully set forth herein.

- a. If there is no applicable rate for an item of equipment, then payment shall be made for the Design Builder- or Subcontractor-owned equipment at rental rate listed in the most recent edition of the Association of Equipment Distributors (AED) book.
- b. For rented equipment, payment will be made based on actual rental invoices. Equipment used on extra Work shall be of proper size and type. If, however, equipment of unwarranted size or type and cost is used, cost of use of equipment shall be calculated at rental rate for equipment of proper size and type, as determined by the District.
- c. Rental rates paid shall be deemed to cover cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Unless otherwise specified, manufacturer's ratings, and manufacturer-approved modifications, shall be used to classify equipment for determination of applicable rental rates.
- d. Individual pieces of equipment or tools not listed in said publication and having a replacement value of \$250 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefore as payment is included in payment for labor.
- e. Rental time will not be allowed while equipment is inoperative due to breakdowns.
- f. For equipment on Site, rental time to be paid for equipment shall be time equipment is in operation on extra Work being performed or on standby as approved by the District. The following shall be used in computing rental time of equipment:
 - i) When hourly rates are listed, less than 30 minutes of operation shall be considered to be ½ hour of operation.
 - ii) When daily rates are listed, less than four hours of operation shall be considered to be ½ Day of operation.
- g. For equipment that must be brought to Site to be used exclusively on extra Work, cost of transporting equipment to Site and its return to its original location shall be determined as follows:
 - i) District will pay for costs of loading and unloading equipment.
 - ii) Cost of transporting equipment in low bed trailers shall not exceed hourly rates charged by established haulers.
 - iii) Cost of transporting equipment shall not exceed applicable minimum established rates of California Public Utilities Commission.
 - iv) District will not make any payment for transporting and loading and unloading equipment if equipment is used on Work in any other way than upon extra Work.
- h. Rental period may begin at time equipment is unloaded at Site of extra Work and terminate at end of the performance of the extra Work or Day on which the District directs the Design Builder to discontinue use of equipment, whichever first occurs. Excluding Saturdays, Sundays, and the District's legal holidays, unless equipment is used to perform extra Work on such Days, rental time to be paid per Day shall be four hours for zero hours of operation, six hours for four hours of operation and eight hours for eight hours of operation, time being prorated between these

parameters. Hours to be paid for equipment that is operated less than eight hours due to breakdowns, shall not exceed eight less number of hours equipment is inoperative due to breakdowns.

4. Work Performed by Special Forces or Other Special Services: When the District, and the Design Builder by agreement, determine that special service or item of extra Work cannot be performed by forces of the Design Builder or those of any Subcontractors, service or extra Work item may be performed by specialists. Invoices for service or item of extra Work on basis of current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with established practice of the special service industry to provide complete itemization. In those instances wherein the Design Builder is required to perform extra Work necessitating a fabrication or machining process in a fabrication or machine shop facility away from Site, charges for that portion of extra Work performed in such facility may, by agreement, be accepted as a specialist billing. The District must be notified in advance of all off-Site Work. In lieu of overhead and profit provided in this Section, 15 percent will be added to specialist invoice price, after deduction of any cash or trade discount offered or available, whether or not such discount may have been taken.

L. FORCE-ACCOUNT WORK

1. If it is impracticable because of nature of Work, or for any other reason, to fix an increase or decrease in price definitely in advance, the Design Builder may be directed to proceed at a not-to-exceed (NTE) maximum price which shall not under any circumstances be exceeded. Subject to such limitation, such extra Work shall be paid for at actual necessary cost for Force-Account Work or at the negotiated cost, as determined by the District. The cost for Force-Account Work shall be determined pursuant to this Specification Section.
2. Force-Account Work shall be used when it is not either possible or practical to price the changed Work prior to the start of that Work. In these cases, Force-Account Work will be utilized during the pricing and negotiation phase of the change. Once negotiations have been concluded and a bilateral agreement has been reached, the tracking of the Work under Force-Account is no longer necessary. Force-Account Work shall also be used when negotiations between the District and the Design Builder have broken apart and a bilateral agreement on the value of the changed Work cannot be reached. The District may approve other uses of Force-Account Work.
3. Whenever any Force-Account Work is in progress, definite price for which has not been agreed on in advance, the Design Builder shall report to the District each Business Day in writing in detail amount and cost of labor, equipment, and material used, and any other expense incurred in Force-Account Work on the preceding day, by using a preapproved cost proposal form. No claim for compensation for Force-Account Work will be allowed unless report shall have been made and acknowledged by the District.
4. Whenever Force-Account Work is in progress, definite price for which has not been agreed on in advance, the Design Builder shall report to the District when 75 percent of the NTE amount has been expended.

5. RECORDS AND CERTIFICATION

- a. Force-Account (cost reimbursement) charges shall be recorded daily and summarized in preapproved cost proposal form. The Design Builder or authorized representative shall complete and sign form each Day and submit to the District

Representative for review and approval. The Design Builder shall also provide with the form: the names and classifications of workers and hours worked by each; an itemization of all materials used; a list by size type and identification number of equipment and hours operated; and an indication of all Work performed by specialists.

- b. No payment for Force-Account Work shall be made until the Design Builder submits original invoices substantiating materials and equipment charges.
 - c. District shall have the right to audit all records in possession of the Design Builder relating to activities covered by the Design Builder's claims for modification of Contract, including Force-Account Work and CCD Work.
 - d. Further, the District will have right to audit, inspect, or copy all records maintained in connection with this Contract, including financial records, in possession of the Design Builder relating to any transaction or activity occurring or arising out of, or by virtue of, the Contract. If the Design Builder is a joint venture, right of the District shall apply collaterally to same extent to records of joint venture sponsor, and of each individual joint venture member. This right shall be specifically enforceable, and any failure of the Design Builder to voluntarily comply shall be deemed an irrevocable waiver and release of all claims then pending that were or could have been subject to the General Condition of Contract.
6. Force-Account Work shall be paid as extra Work under this Section. Methods of determining payment for Work and materials provided in this paragraph shall not apply to performance of Work or furnishings of material that, in judgment of the District, may properly be classified under items for which prices are otherwise established in Contract Documents.
- a. Basis for Establishing Costs.
 - i) Labor will be the actual cost for wages prevailing locally for each craft 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 a labor classification which would increase the extra Work cost will not be permitted unless the Design Builder 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.
 - a) Worker's compensation is provided under the OCIP however if Design Builder or its subcontractors are excluded from the OCIP; it shall include cost of worker's compensation insurance in its costs.
 - ii) Materials shall be at invoice or lowest current price at which such materials are locally available and delivered to the 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 Design Builder 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 \$250 or less.
 - b. 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 Design Builder or any of the Subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.
 - c. Invoices. Vendors' invoices for material, equipment rental, and other expenditures shall be submitted with the PCO. 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 Daily Report.
 - d. Overhead and Profit. Overhead and profit is defined and shall be applied as in this Specification Section.
- M. DISTRICT-FURNISHED MATERIALS
 - 1. District reserves right to furnish materials, as it deems advisable, and the Design Builder shall have no claims for costs and overhead and profit on such materials.
- N. OVERHEAD DEFINED
 - 1. The following includes, but is not limited to, costs that are deemed included in overhead for all Contract Modifications, including COs, Force-Account Work or CCD Work, whether incurred by the Design Builder, Subcontractors, or suppliers, and the Design Builder shall not invoice or receive payment for these costs separately:
 - a. Drawings: field drawings, Shop Drawings, etc., including submissions of drawings.
 - b. Routine field inspection of Work proposed.
 - c. General Superintendence, including Site Superintendent, Project Engineers, Project Management or Construction Management services provided by the Design Builder.
 - d. General administration and preparation of cost proposals, schedule analysis, change orders and other supporting documentation as necessary.
 - e. Computer services.
 - f. Reproduction services.
 - g. Salaries of, superintendent, foremen, timekeeper, storekeeper and secretaries
 - h. Janitorial services
 - i. Temporary on Site facilities, including for any extended periods of Contract Time:
 - i) Offices
 - ii) Telephones
 - iii) Plumbing
 - iv) Electrical: Power, lighting, etc.
 - v) Platforms
 - vi) Fencing, barricades, signage, etc.
 - vii) Water

2. Home office expenses
 3. Procurement and use of vehicles and fuel used coincidentally in Work otherwise included in the Contract Documents
 4. Surveying
 5. Estimating
 6. Protection of Work
 7. Handling and disposal fees
 8. Final cleanup
 9. Small tools
 10. Warranty
 11. All Contract General Conditions
 12. Other incidental Work
- O. Deductive Change Orders: All deductive Change Order(s) shall be prepared in the same manner as additive change orders using the same forms and formulas, with negative numbers. Overhead and profit will be neither added nor deducted when calculating deductive changes.
- P. Discounts, Rebates, and Refunds: For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Design Builder, and the Design Builder shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Design Builder's cost in determining the actual cost of construction for purposes of any change, addition, or omissions in the Work as provided herein.
- Q. Accounting Records: With respect to portions of the Work performed by COs and Construction Change Directives on a time-and-materials, unit-cost, or similar basis, the Design Builder shall keep and maintain cost-accounting records satisfactory to the District, which shall be available to the District on the same terms as any other books and records the Design Builder is required to maintain under the Contract Documents.
- R. Notice Required: If the Design Builder desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the General Conditions of these Contract Documents. Design Builder shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such claim shall be authorized by a CO.
- S. Applicability to Subcontractors: Any requirements under this Section shall be equally applicable to COs or Construction Change Directives issued to Subcontractors by the Design Builder to the same extent required by the Design Builder.
- T. Alteration to Change Order Language: Design Builder shall not alter or reserve time in Change Orders or Construction Change Directives. Design Builder shall execute finalized Change Orders and proceed with the Work. If Design Builder intends to reserve time, without an approved

CPM schedule prepared pursuant to the Construction Scheduling Specification, the Design Builder may be prosecuted pursuant to the False Claim Act.

1.9 CONSTRUCTION CHANGE DIRECTIVE

- A. Definition: A Construction Change Directive is a written order prepared by the District, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The District may, by Construction Change Directive and without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions within. If applicable, the Contract Sum and Contract Time will be adjusted accordingly. In the case of a Construction Change Directive being issued, Design Builder shall commence Work immediately or delays from failure to perform Construction Change Directive shall be the responsibility of Design Builder. Any dispute as to the sum of Construction Change Directive or timing of payment, shall be resolved pursuant to the Disputes paragraphs of these Contract Documents. A Construction Change Directive shall be used in the absence of agreement on the terms of a CO. **Changes meeting the definition of DSA Construction Change Document Category A require DSA review and approval and shall be submitted by the Architect of Record to DSA as a Construction Change Document in accordance with IR A-6.**
- B. Construction Change Directives: If at any time the District believes in good faith that a timely Change Order will not be agreed upon using the foregoing procedures, the District may issue a CCD with a recommended cost and/or time adjustment.
1. Upon receipt of CCD, the Design Builder shall promptly proceed with the change of Work involved and concurrently respond to the District's CCD within 10 Calendar Days.
 - a. Design Builder's response must be any one of following:
 - i) Return CCD signed, thereby accepting the District's response, time, and cost.
 - ii) Submit a (revised if applicable) proposal with supporting documentation (if applicable, reference original proposal number followed by letter R1, R2, etc. for each revision.
 - iii) Give notice of intent to submit a Claim as described in the General Conditions, and submit its Claim with 30 Calendar Days.
 - b. If the CCD provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
 - i) Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.
 - ii) Unit prices stated in the Contract Documents or subsequently agreed upon.
 - iii) Force account.
 - iv) Cost to be determined in a manner agreed.
- C. A CCD signed by the Design Builder indicates the agreement of the Design Builder therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a PCO.
- D. If the Design Builder does not respond promptly, or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the District on the basis of published estimating guides, District estimating consultant analysis, or reasonable and historical expenditures and savings of those performing similar Work including, in case of an

increase in the Contract Sum, a reasonable allowance for overhead and profit. If the parties still do not agree on the price for a CCD, the Design Builder may file a Claim per General Conditions. The Design Builder shall keep and present, in such form as the District may prescribe, an itemized accounting together with appropriate supporting data.

- E. The amount of credit to be allowed by the Design Builder for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the District. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

1.10 Responses: For all responses for which the Contract Documents, including without limitation this Section, do not provide a specific time period, recipients shall respond within a reasonable time.

1.11 Disputes: For all disputes arising from the procedures herein, the Design Builder shall follow this Section and the Contract General Conditions.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION 01 25 00

SECTION 01 29 00
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01250 – “Contract Modification Procedures”
- C. Section 01300 – “Labor Compliance Program”
- D. Section 01312 – “Project Meetings”
- E. Section 01330 – “Submittal Procedures”
- F. Section 01770 – “Contract Closeout Procedures”
- G. Section 01780 – “Project Record Documents”
- H. Divisions 2 through 33 Sections for Payment Procedures requirements for the work in those sections.

1.3 SUMMARY

- A. This Section includes descriptions of requirements and procedures for determining the quantity of Work performed during each pay period in project and the procedures for obtaining payment for Work performed. **Note – Each Project, D-4012 Physical Education & Kinesiology and D-4014 New Arts Complex will need separate payapps. Change Orders will be tracked per Project.**

1.4 CONTRACT SUM

- A. The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Design Builder for performance of the Work under the Contract Documents.

1.5 SCHEDULE OF VALUES

- A. Within ten (10) calendar days of the award of the Contract, provide an Initial Schedule of Values (SOV) along with the Initial CPM Schedule per Section 01310. This initial SOV shall include detailed breakdown of the elements of work expected in the first 90 calendar days of the Contract.
- B. Submit the Master Schedule of Values for all activities and costs under the Contract. Coordinate activities with, and submit this Master SOV at the same time as the master CPM Schedule required by Section 01310.

- C. The SOV shall include Design Builder’s overhead, profit, insurance, cost of bonds (except to the extent expressly identified in a Proposal Item) and/or other financing, as well as general conditions costs, (e.g., Site cleanup and maintenance, temporary roads, access, signage off-Site access roads, temporary power and lighting, security, and the like). These costs shall be prorated through all activities and all Phases of the Project so that the sum of all Schedule of Values line items equals the total Contract Sum.
- D. District and Project Manager shall review the breakdown in conjunction with the Master Construction Schedule to ensure that the amounts listed in the Schedule of Values are, in fact, fair market cost allocations for the Work items listed. Upon favorable review by the District, District will accept this Schedule of Values for use. District shall be the sole judge of fair market cost allocations.
- E. District will reject any attempt to increase the cost of early activities, i.e., “front loading,” resulting in a complete reallocation of moneys until such “front loading” is corrected. Repeated attempts at “front loading” may result in suspension or termination of the Work for default, or refusal to process progress payments until such time as the Schedule of Values is acceptable to District.
- F. The Schedule of Values shall list line item costs for Project Closeout, Operations and Maintenance Manuals, Warranties, final test reports, and like items as required by this and other sections of the Contract Documents.
- G. Format and Content: 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.
 - 1. Identification: Include the following Project Identification on the Schedule of Values:
 - a. Project name and Campus;
 - b. Name of Architect;
 - c. District’s project number;
 - d. Design Builder’s name and address;
 - e. Date of submittal.
 - 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division;
 - b. Description of the Work;
 - c. Name of subcontractor;
 - d. Name of manufacturer or fabricator;
 - e. Name of supplier;
 - f. Change Orders (numbers) that affect value;
 - g. Dollar value:
 - i) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project

Manual Table of Contents, individual Specification Sections, and the Construction Schedule. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts. A line item for Bonds must be supported by the evidence of the Bond cost at the time of application for payment. Provide individual line items for operation and maintenance manuals, punch list activities, Project Record Documents, Title 24 closeout, LEED commissioning (if applicable), and demonstration and training (if applicable). If the values for administrative close-out items are not realistic and supportable, the Schedule of Values will not be accepted.

3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
4. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
5. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
6. Provide separate line item in the Schedule of Values for maintenance and updating of Project Record Documents as specified in Section 01780 (Project Record Documents).
7. Provide a separate line item for DSA verified report retention if this is a DSA approved project. See General Conditions.
8. Allowances: Provide a separate line item in the Schedule of Values for each allowance.
9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
10. Schedule Updating: When Change Orders result in a change in the Contract Sum, include each Change Order as a new line item, with additional line items for detail if the change involves multiple subcontractors or significant Work in more than one Specification Section.

1.6 SUBCONTRACTOR LISTING

- A. Within five (5) days of the award of the Contract, provide the name, address, telephone number, fax number, California State Contractors Board License number, and classification of all Subcontracts for parties furnishing labor, material, or equipment for the Project.

1.7 DISTRICT APPROVAL

- A. The District shall review all submittals required above in a timely manner. All submittals must be approved by the District before becoming the supporting basis for any Design Builder payment request.

1.8 PROGRESS PAYMENTS

- A. Within thirty (30) days after approval of the Request for Payment, Design Builder shall be paid a sum equal to ninety percent (95%) of the value of the Work performed (as certified by District and Inspector and verified by Design Builder) up to the last day of the previous month, less the

aggregate of previous payments. The value of the Work completed shall be Design Builder's best estimate. No inaccuracy or error in said estimate shall operate to release the Design Builder, or any surety upon any bond, from damages arising from such Work, or from the District's enforcement of each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

- B. The Design Builder shall not be entitled to have any payment requests processed, or be entitled to have any payment made for work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.
- C. Notwithstanding anything to the contrary stated above, the Design Builder may include in its Request for Payment the value of any structural steel, G.F.R.C. panels and other such custom-made materials prepared specifically for the Project and unique to the Project so long as all of the following requirements are satisfied:
 - 1. No payment shall be made for materials stored off-site without the written approval of the District to be given or withheld in the District's sole discretion;
 - 2. Title to such materials shall be vested in the District as evidenced by documentation satisfactory in form and substance to the District, including, but not limited to, recorded financing statements, UCC filings and UCC searches;
 - 3. With each Design Builder Request for Payment, the Design Builder shall submit to the District a written list identifying each location where materials are stored off-site (which must be a bonded warehouse) and the value of the materials at each location. The Design Builder shall procure insurance satisfactory to the District (in its reasonable discretion) for materials stored off-site in an amount not less than the total value thereof;
 - 4. The consent of any Surety shall be obtained to the extent required prior to payment for any materials stored off-site;
 - 5. Representatives of the District shall have the right to make inspections of the storage areas at any time; and
 - 6. Such materials shall be (1) protected from diversion, destruction, theft and damage to the reasonable satisfaction of the District; (2) specifically marked for use on the Project; and (3) segregated from other materials at the storage facility.
- D. The Design Builder is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to assure that there will be no delays.
- E. No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct any error subsequent to any payment.

1.9 APPLICATIONS FOR PROGRESS PAYMENTS

- A. The District shall, within seven (7) days after receipt of the Design Builder's Application for Payment, either approve such payment or notify the Design Builder in writing of the District's reasons for withholding approval in whole or in part as provided herein. The review of the Design Builder's Application for Payment by the District is based on the District's observations at the Site and the data comprising the Application for Payment that the Work has progressed

to the point indicated and that, to the best of the District's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents.

B. The foregoing representations are subject to:

1. An evaluation of the Work for conformance with the Contract Documents;
2. Results of subsequent tests and inspections;
3. Minor deviations from the Contract Documents correctable prior to completion, and
4. Specific qualifications expressed by the District. The issuance of a Certificate for Payment will further constitute a representation that the Design Builder is entitled to payment in the amount certified.

C. Progress Payment Procedures include the following:

1. *Pre-application Meeting.* On or before the 5th Day of each calendar month during the progress of the Work, Design Builder shall attend a pre-Application meeting with District's Representatives, including the District, Project Manager and Project Inspector. Design Builder shall provide a complete draft of the proposed Application for Payment for review. The Design Builder shall revise and resubmit the draft Application for Payment, if required by District.
2. *Application for Progress Payment.* On or before the tenth (10th) day of each calendar month during the progress of the Work, Design Builder shall submit to the District an itemized Application for Progress Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized, if required, and supported by the following and as required by the specifications.
3. The Design Builder shall submit Applications for Payment in the form pre-approved by the District, See Section 01340 ADMINISTRATIVE FORMS. Information shall include:
 - a. The amount paid to the date of the Application to the Design Builder, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;
 - b. The amount being requested under the Application for Payment by the Design Builder on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;
 - c. The balance that will be due to each of such entities after said payment is made;
 - d. A certification that the Record Drawings and Annotated Specifications are current;
 - e. Itemized breakdown of work done for the purpose of requesting partial payment;
 - f. Where the Work is separated into Phases, provide Applications for Payment showing values correlated with each Phase separately.
 - g. An updated Construction Schedule in conformance with the requirements of Section 01310, Construction scheduling.
 - h. All additions to and subtractions from the Contract Price and Contract Time;
 - i. A summary of the retentions held;
 - j. Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require;

- k. An updated Schedule of values showing percentage of completion of the Design Builder's Work by line item.
- D. Prerequisites for Progress Payments include the following:
 - 1. The following items must be submitted and approved before the first payment request will be accepted for processing:
 - a. List of all subcontractors;
 - b. List of Design Builder's staff assignments;
 - c. Installation of the Project signs and other required temporary facilities and controls, including field office(s) required by Section 01500;
 - d. Complete Schedule of Values;
 - e. Initial Construction Schedule, due within [5 edit] days after Notice to Proceed;
 - f. Submittal Schedule;
 - g. Copies of any required permits;
 - h. Copies of authorizations and licenses from governing authorities, if required;
 - i. Surveyor qualifications if needed;
 - j. All bonds and insurance endorsements;
 - k. Other early submittals required by the Contract Documents.
- E. No payment requests will be processed unless Design Builder has:
 - 1. Submitted copies of the Certified Payroll records for the Payment Request Work period.
 - 2. Provided an updated Construction Schedule.
 - 3. Provided an updated Schedule of Values.
 - 4. Provided all other payment request related items required by the Contract Documents.
- F. Payment requests that are not in compliance with the Contract Documents will be returned with no action taken.
- G. If Design Builder is late submitting an Application for Payment, that Application may be processed at any time during the one-month period, but may result in processing of the Design Builder's Application for Payment being delayed for more than a day-for-day basis. The District and its representative shall not be responsible for any such Payment being delayed due to late, incomplete, or inaccurate submission by the Design Builder.
- H. Any payments made to Design Builder where criteria set forth in the Contract Documents have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Design Builder may pay its Subcontractors and suppliers and that Design Builder agrees that failure to submit such items may constitute a breach of contract by Design Builder and may subject Design Builder to termination or other penalty.

1.10 WARRANTY OF TITLE

- A. The Design Builder warrants title to all work. The Design Builder further warrants that all work is free and clear of liens, claims, security interests, or encumbrances in favor of the Design

Builder, Subcontractors, material and equipment suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work.

- B. Failure to keep work free of liens, claims, security interests or encumbrances is grounds to make a claim against Design Builder's payment and performance bond to immediately remedy and defend.
- C. If a lien or stop notice of any nature should at any time be filed against the Work or any District property by any entity which has supplied material or services at the request of the Design Builder, Design Builder and Design Builder's surety shall promptly, on demand by District and at Design Builder's and surety's own expense, take any and all action necessary to cause any such lien or stop notice to be released or discharged immediately therefrom.
- D. If the Design Builder fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or stop notice has been so released, discharged, or secured, then District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Design Builder under the Contract.

1.11 DECISIONS TO WITHHOLD PAYMENT

- A. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to:
 - 1. Defective Work not remedied;
 - 2. Stop Notices served upon the District;
 - 3. Liquidated damages assessed against the Design Builder;
 - 4. The cost of completion of the Contract if there exists reasonable doubt that the Work can be completed for the unpaid balance of any Contract Price or by the completion date;
 - 5. Damage to the District or other contractor;
 - 6. Unsatisfactory prosecution of the Work by the Design Builder;
 - 7. Failure to store and properly secure materials;
 - 8. Failure of the Design Builder to submit on a timely basis, proper and sufficient documentation required by the Contract Documents, including, without limitation, acceptable monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed Change Order, Construction Change Directives, and verified reports;
 - 9. Failure of the Design Builder to maintain record drawings;
 - 10. Erroneous estimates by the Design Builder of the value of the Work performed, or other false statements in an Application for Payment;
 - 11. Unauthorized deviations from the Contract Documents;
 - 12. Failure of the Design Builder to prosecute the Work in a timely manner in compliance with established progress schedules and completion dates.
 - 13. Failure to properly pay prevailing wages as defined in Labor Code section 1720, et seq.;
 - 14. Failure to properly maintain or clean up the Site;
 - 15. Payments to indemnify, defend, or hold harmless the District;

16. Any payments due to the District including but not limited to payments for failed tests, or utilities changes or permits;
17. Failure to submit an acceptable schedule in accordance with Section 01310;
18. Failure to pay Subcontractor or suppliers as required herein;
19. Failure to provide release from material suppliers or subcontractors when requested to do so.

1.12 RE-ALLOCATION OF WITHHELD AMOUNTS

- A. District may, in its discretion, apply any withheld amount to payment of outstanding claims or obligations as defined in herein. In so doing, District shall make such payments on behalf of Design Builder.
- B. If any payment is so made by District, then such amount shall be considered as a payment made under Contract by District to Design Builder and District shall not be liable to Design Builder for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligation. District will render Design Builder an accounting of such funds disbursed on behalf of Design Builder.
- C. If Design Builder defaults or neglects to carry out the Work in accordance with the contract documents or fails to perform any provision thereof, District may, after ten (10) calendar days written notice to the Design Builder and without prejudice to any other remedy make good such deficiencies.
- D. 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 which is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract price (of at least 150% of the estimated reasonable value of the nonconforming work) shall be made therefore.

1.13 PAYMENT AFTER CURE

- A. When the grounds for declining approval are removed, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Design Builder to perform in accordance with the terms and conditions of the Contract Documents.

1.14 NONCONFORMING WORK

- A. Design Builder shall promptly remove from premises all Work identified by District as failing to conform to the Contract whether incorporated or not. Design Builder shall promptly replace and re-execute its own Work to comply with the Contract 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 Design Builder does not remove such Work which has been identified by District as failing to conform to the Contract Documents within a reasonable time, fixed by written notice, District may remove it and may store the material at Design Builder's expense. If Design Builder does not pay expenses of such removal within ten (10) calendar days' time thereafter, District may, upon ten (10) calendar 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 Design Builder.

1.15 SUBCONTRACTOR PAYMENTS

- A. No later than ten (10) days after receipt, or pursuant to Business and Professions Code Section 7108.5 and Public Contract Code section 7107, the Design Builder shall pay to each Subcontractor, out of the amount paid to the Design Builder on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Design Builder shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

1.16 NO OBLIGATION OF DISTRICT FOR SUBCONTRACTOR PAYMENT

- A. The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

1.17 PAYMENT NOT CONSTITUTING APPROVAL OR ACCEPTANCE

- A. An approved Request for Payment, a progress payment, or partial or entire use or occupancy of the Project by the District shall not constitute acceptance of Work not in accordance with the Contract Documents.

1.18 JOINT CHECKS

- A. District shall have the right, if necessary for the protection of the District, to issue joint checks made payable to the Design Builder and Subcontractors and material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, any obligation from the District to such Subcontractor, or rights in such Subcontractor against the District.

1.19 NO WAIVER

- A. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

1.20 FINAL PAYMENT

- A. Design Builder shall comply with requirements of Section 01770 Contract Closeout Procedures.
- B. Design Builder shall maintain the presence of Project Superintendent and Project Manager until the Work is complete.
- C. Under no circumstances shall Design Builder demobilize its forces prior to completion of the Final Punchlist. Upon receipt of Design Builder's written notice that all of the Final Punchlist items have been fully completed and the Work is ready for final inspection and acceptance, District shall inspect the Work and shall submit to Design Builder and District a final inspection report noting which work, if any, is required to be completed in accordance with the Contract

Documents. Absent unusual circumstances, this report shall consist of the Punchlist items not yet satisfactorily completed.

- D. Upon completion of the Work contained in the Final Inspection report, the Design Builder shall notify the District, who shall again inspect such Work. If the District finds the Work contained in such Final Inspection report acceptable under the Contract Documents and, therefore, the Work fully completed, it shall notify Design Builder, who may then submit to the District its final Application for Payment.
- E. Upon receipt and approval of such final Application for Payment, the District shall issue a final Certificate of Payment stating that to the best of its knowledge, information, and belief, and on the basis of its observations, inspections, and all other data accumulated or received by the District in connection with the Work, such Work has been completed in accordance with the Contract Documents. The District shall thereupon inspect such Work and either accept the Work as complete or notify the Design Builder in writing of reasons why the Work is not complete. Upon acceptance of the Work of the Design Builder as fully complete (which, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Design Builder shall, upon receipt of payment from the District, pay the amounts due Subcontractors.
- F. The following conditions must be fulfilled prior to Final Payment:
 - 1. A full and final waiver or release of all Stop Notices in connection with the Work shall be submitted by Design Builder, including a release of Stop Notice in recordable form, together with (to the extent permitted by law) a copy of the full and final release of all Stop Notice rights.
 - 2. The Design Builder shall have made all corrections to the Work required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District.
 - 3. Each Subcontractor shall have delivered to the Design Builder all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.
 - 4. Design Builder must have completed all requirements set forth in Section 01770 Contract Closeout Procedures.
 - 5. District shall have reviewed and approved a Final Application for Payment.
 - 6. The Design Builder shall have completed final clean up as required by Section 01710 Cleaning Requirements.

1.21 RETAINAGE

- A. The retainage, less any amounts disputed by the District or which the District has the right to withhold, shall be paid:
 - 1. After approval by District of the Design Builder's final Application for Payment;
 - 2. After satisfaction of all terms and conditions set forth in the Contract Documents, and
 - 3. After thirty-five (35) days after the acceptance of the Work by the District Governing Board and recording of the Notice of Completion by District.

- B. No interest shall be paid on any retainage, or on any amounts withheld due to a failure of the Design Builder to perform in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any Escrow Agreement between the District and the Design Builder pursuant to Public Contract Code § 22300.

1.22 SUBSTITUTION OF SECURITIES

- A. The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

1.23 ALLOWANCES

- A. District will authorize and direct Design Builder regarding provisions in this paragraph.
- B. Allowance Amount: as listed in Section 01210 (Allowances).
- C. District shall determine in its sole discretion which costs, if any, it will authorize in writing to be paid from the Allowance. Generally, the Allowance will be used only for District-initiated changes in the Scope of Work.
- D. Costs for Allowance Work shall be determined as provided in Section 01250, Contract Modification Procedures.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 29 00

SECTION 01 30 00
LABOR COMPLIANCE PROGRAM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 0 and Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01290 – “Payment Procedures”
- C. Section 01770 – “Contract Closeout Procedures”
- D. Divisions 2 through 33 Sections for Labor Compliance Program requirements for the work in those Sections.

1.3 SUMMARY

- A. Labor Code Section 1725.5 regarding Department of Industrial Relations (DIR) contractor registration process including registration criteria and implementation of DIR registration requirements. Labor Code Section 1771.7 establishes contractor’s obligation to submit Certified Pay Roll (CPR) to the Department of Labor and Standards Enforcement (DLSE) and public works monitoring and enforcement. Labor Code Section 1773.3 requires the District to submit a PWC-100 to DIR for all public works contract awarded effective January 1, 2015.
- B. Contractors and subcontractors performing work on District projects will be expected to adhere to the labor compliance provisions outlined in Division 2, Part 7, Chapter 1 of the California Labor Code §1720- 1861 including, but not limited to, the reporting of certified payroll, payment of prevailing wages and the employment of apprentices.

1.4 LABOR COMPLIANCE PROGRAM REQUIREMENTS

- A. California Labor Code Section 1770, et seq., and Education Code Section 17424 require that contractors on Public works projects pay their workers based on the prevailing wage rates which are established and issued by the Department of Industrial Relations, Division of Labor Statistics and Research.
 - 1. Pursuant to the provisions of Division 2, Part 7, Chapter 1, Article 2 of the California Labor Code §1770, et seq., the District has obtained from the Director of the California Department of Industrial Relations the general prevailing rate of per diem wages and the prevailing rate for straight time, holiday time and overtime work in the locality in which the work is to be performed for each craft, classification or type of worker needed to execute the contract. The prevailing wage determination can be accessed online at <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>. Copies of the prevailing rate of per diem wages are also on file at the District office, which shall be made available to any interested party on request. Per diem wages shall be deemed to include employer payments for health and welfare, pensions, vacation, travel time and subsistence pay as provided in California Labor Code §1773.1 and as shown in the Director’s determination. For

apprenticeship or other training programs authorized by California Labor Code §3093, and similar purposes, when the term “per diem wages” is used herein it shall have the meaning as defined in the prevailing wage determination as published by the Director of the California Department of Industrial Relations and California Labor Code.

2. The Design Builder shall post at an appropriate conspicuous weatherproof point on the site of the project a copy of the prevailing wage determination published by the Director of the California Department of Industrial Relations which is applicable to the project and the Notice of Approval of the Labor Compliance Program.
 3. There shall be paid to each worker of the Design Builder or any subcontractor, of any tier, engaged in the work, not less than the general prevailing wage rate regardless of any contractual relationship which may be alleged to exist between the Design Builder or any subcontractor, of any tier, and such worker. The Design Builder and subcontractors will be required to pay all workers on a weekly basis. Each worker needed to execute the work on the project shall also be paid travel and subsistence payments, as such travel and subsistence payments are defined in the prevailing wage determination published by the Director of the California Department of Industrial Relations.
 4. Holiday and overtime work, when permitted by law, shall be paid for at the rate identified in the prevailing wage determination issued by the Director of the California Department of Industrial Relations. In accordance with Labor Code §1815, work performed by employees of contractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon public work upon compensation for all hours worked in excess of 8 hours per day at not less than 1 1/2 times the basic rate of pay.
 5. The Design Builder shall forfeit fifty dollars (\$50.00) for each calendar day or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of the California Department of Industrial Relations for such work or craft in which such worker is employed by the Design Builder or by any subcontractor, of any tier, in connection with the work. Pursuant to California Labor Code §1775, the difference between such prevailing wage rates and the amount paid to each worker for each calendar day, or portion thereof, for which each worker was paid less than the prevailing wage rate, shall be paid to each worker in the addition to the penalties. The amount of forfeiture shall be determined by the Labor Commissioner and shall be based on consideration of the contractor’s mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages. The contractor’s previous record in meeting the prevailing wage obligations or the contractor’s willful failure to pay the correct rates of prevailing wages may influence the amount of penalty.
 6. In accordance with Labor Code §1813, the Design Builder or subcontractor shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five dollars (\$25) for each worker employed in the execution of the contract by the respective contractor or subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of this article. In awarding any contract for public work, the awarding body shall cause to be inserted in the contract a stipulation to this effect. The awarding body shall take cognizance of all violations of this article committed in the course of the execution of the contract, and shall report them to the Division of Labor Standards Enforcement.
- B. California Labor Code Section 1776 requires contractors to keep accurate payroll records of trade workers on all public works projects and to submit copies of certified payroll records upon request.

1. Pursuant to California Labor Code §1776, the contractor and every subcontractor, of any tier, shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per them wages paid to each journeyman, apprentice, worker or other employee employed by them in connection with the public works project. The payroll records shall be certified and submitted bi-weekly to the Labor Compliance Representative and shall be available for inspection at all reasonable hours at the principal office of the Design Builder on the following basis:
 2. A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his/her authorized representative on request;
 3. A certified copy of all payroll records shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement and the Division of Apprenticeship Standards of the Department of Industrial Relations;
 4. A certified copy of payroll records shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. The contractor shall have ten (10) days in which to completely comply, subsequent to receipt of written notice specifying in what respects the contractor must comply herewith. Should noncompliance be evident after such 10-day period, the contractor shall, as a penalty to the District, forfeit Twenty-Five Dollars (\$25.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated.
- C. California Labor Code Section 1777.5 requires contractors to employ registered apprentices on Public works projects.
1. Per California Labor Code §1777.5(e), the contractor and all subcontractors shall notify an approved training program that can supply apprentices to the area of the public works project. The Design Builder and subcontractors shall submit contract award information to the applicable joint apprenticeship committee which shall include an estimate of journeyman hours to be performed under the contract, the number of apprentices to be employed, and the approximate dates the apprentices will be employed. Additionally, the Design Builder and subcontractors shall request, from the joint apprenticeship committee, dispatch of apprentices on the public works project using the state form DAS-142.
 2. All apprentices employed by the contractor to perform any of the work shall be paid the prevailing wages identified by the Director of the California Department of Industrial Relations. Only apprentices, as defined in California Labor Code §3077 who are in training under apprenticeship standards and written apprenticeship agreements under California Code §§3070, et seq., are eligible to be employed for the work. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which such apprentice is training or the standards established by the Division of Apprenticeship Standards.
 3. The ratio of work performed by apprentices to journeymen, who shall be employed in the work, may be the ratio stipulated in the apprenticeship standards under which the joint apprenticeship committee operates, but in no case shall the ratio be less than one hour (1) of apprentice work for each five (5) hours of labor performed by a journeyman, except as otherwise provided in California Labor Code §1777.5. Any ratio shall apply during any day or portion of a day when any journeyman, or the higher standard stipulated by the joint apprenticeship committee, is employed at the site of the Work and shall be computed on the basis of the hours worked during the day by journeymen so employed, except for the

surveyor classification. The Contractor shall employ apprentices for the number of hours computed as above before the completion of the work. The contractor shall, however, endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the site of the Work. Where an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Division of Apprenticeship Standards, upon application of a joint apprenticeship committee, may order a minimum ratio of not less than one apprentice for each five journeymen in a craft or trade classification. This article shall not apply to contracts of general contractors, or to contracts of specialty contractors not bidding for work through a general or prime contractor, involving less than thirty thousand dollars (\$30,000).

4. The Design Builder or any subcontractor, of any tier, who performs any of the work by employment of journeymen or apprentices in any apprenticeable craft or trade and who is not contributing to a fund or funds to administer and conduct the apprenticeship program in any such craft or trade in the area of the site of the work, to which fund or funds other contractors in the area of the site of the work are contributing, shall contribute to the fund or funds in each craft or trade in which it employs journeymen or apprentices in the same amount or upon the same basis and in the same manner as the other contractors do, but where the trust fund administrators are unable to accept such funds, contractors not signatory to the trust agreement shall pay a like amount to the California Apprenticeship Council. The contractors shall provide proof of such contributions when requested, including checks, check stubs, receipts, or other records required to prove that all required payments were made.
5. In the event the contractor willfully fails to comply with the provisions of California Labor Code §1777.5, and pursuant to California Labor Code §1777.7, the contractor shall: (i) be denied the right to bid on any public works contract for a period of one (1) year from the date the determination of non-compliance is made by the administrator of apprenticeship; and (ii) forfeit, as a civil penalty, one hundred dollars (\$100.00) and up to three hundred dollars (\$300.00) for each calendar day of noncompliance. The District shall withhold such amount from the contract price then due or to become due upon request of the Division of Apprenticeship Standards.

END OF SECTION 01 30 00

SECTION 01 30 50
DELAY AND EXTENSIONS TO THE WORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01310 – “Construction Scheduling”
- C. Section 01311 – “Project Management and Coordination”
- D. Divisions 2 through 33 Sections for Delay and Extensions to the Work requirements for the work in those Sections.

1.3 SUMMARY

- A. This Section includes administrative and procedural requirements for evaluation of excusable delays including delays due to abnormal or adverse weather conditions.

1.4 DELAYS AND EXTENSIONS TO THE WORK

- A. Design Builder must complete all Work within the time specified in these Contract Documents. The Design Builder will be granted an extension of time and will not be assessed liquidated damages or the cost of engineering and inspection for any delay in substantially completing the Work (or parts thereof) beyond the time set elsewhere in the Contract Documents, provided that such delay was caused by unforeseeable causes beyond the control and without the fault or negligence of the Design Builder. Examples of such causes include fire, floods, abnormal weather (as described below), and earthquakes, embargoes, changes made pursuant to the provisions of “Changes in work” elsewhere in the Contract Documents or acts or neglect of the District not contemplated by the Contract Documents. In all cases, any extension of time is conditioned on the following:
 - 1. That the cause is not due to the fault or negligence of the Design Builder, and the Design Builder has taken reasonable precautions to prevent the delays and minimize the effects thereof; and
 - 2. That the Design Builder notifies the District, Project Manager, and project Inspector in writing within five (5) days from the beginning of such delay, specifying the nature of the delay and the measures that have been or will be taken to prevent or minimize the delay. Failure to submit written notice within this time period shall constitute an absolute waiver of any claim for a time extension.

- B. No extension of time will be granted for a delay caused by a shortage of materials, unless the Design Builder furnishes to the District documentary proof that he has diligently made every effort to obtain such materials from all known sources within reasonable distance of the work and further proof, in the form of schedule data as required in Section 01310 that the inability to obtain such materials as originally planned did in fact cause a delay in final completion of the Work which could not be compensated for by revising the sequence of the Design Builder’s operations. Only the physical shortage of material will be considered as a cause for extension of time, and no consideration will be given to any claim that material could not be obtained at a reasonable, practical or economical cost or price, unless it is shown to satisfaction of the District that such material could have been obtained only at exorbitant prices, taking into account the quantities involved and the usual practices in obtaining such quantities.
- C. The term “shortage of materials,” as used in this section, shall apply only to materials, articles, parts or equipment which are standard items and shall not apply to materials, parts, articles or equipment which are processed, made, constructed, fabricated or manufactured to meet the specific requirements of the Contract Documents.
- D. No extensions of time will be granted for delay that have no measurable impact on the completion of the Work (or parts thereof) under the Contract Documents. When extensions of time are granted, they will be limited to the period equivalent to the actual number of days lost on the critical path or controlling operations of the current approved Construction Schedule, taking into account the extent to which that delay could be decreased by reasonable mitigation measures by the Design Builder. All requests for extensions of time must be supported with a critical path analysis showing the critical path and impacts to it. Design Builder’s failure to submit this analysis will be sufficient cause for denial of any request for a time extension.
- E. Within a reasonable period of time after the Design Builder submits the notice of delay along with any other information required by this section, the District will determine whether an extension of time is justified and, if so, the number of days for the extension.

1.5 ABNORMAL OR ADVERSE WEATHER CONDITIONS

A. WEATHER DAYS

Delays due to Adverse Weather conditions will only be permitted in compliance with the provisions in the General Conditions and only if the number of days of Adverse Weather exceeds the following parameters and Design Builder can verify that the excess days of Adverse Weather caused delays:

January	[7]	July	[0]
February	[6]	August	[0]
March	[6]	September	[0]
April	[3]	October	[2]
May	[1]	November	[5]
June	[0]	December	[6]

- B. In addition, before a time extension may be granted for abnormal weather, Design Builder must establish to District satisfaction that the rain either significantly impacted at least 75% of the planned work of the critical path operations for a particular day or prohibited at least five (5) hours of work on the critical path operations planned for that day.
- C. In the event that the project experiences favorable weather for a particular month (e.g. a number of actual rain days less than that allocated for allowable rain days per month), the cumulative float resulting from such favorable weather shall accrue to the project.

- D. Rain delay shall be only for the actual period of time established pursuant to full compliance with the above requirements.
- E. Design Builder shall take reasonable steps to mitigate potential weather delays, such as dewatering the Site, providing access roads that are stable under abnormal or adverse weather conditions, and covering work and material that could be affected adversely by weather. Failure to do so shall be cause for the District to not grant a time extension due to abnormal or adverse weather, where Design Builder could have avoided or mitigated the potential delay by exercising reasonable care.
- F. Abnormal weather may be a valid basis for a time extension under the Contract. The term “abnormal weather” is defined as the occurrence rain conditions that exceed the criteria set forth that cause impact to Design Builder’s operations.
- G. Design Builder shall employ reasonable methods to mitigate the impact of abnormal weather (i.e. dewatering, protection of site, etc.) The occurrence of rain during non-work hours or having minimal impact to work on the controlling operation shall not constitute a day of abnormal weather.

1.6 ENTITLEMENT TO CLAIM FOR DELAY AND EXTENSIONS TO THE WORK

- A. Any Design Builder claim for damages or additional compensation based on delay shall be limited to only those circumstances where the Design Builder has fulfilled at least one of the following three (3) requirements:
 - 1. Design Builder has established its entitlement to a time extension pursuant to the provisions described above regarding delay and extensions to the Work.
 - 2. The delay was caused solely by the District by District’s issuance of changes made pursuant to the provisions of “Changes in Work” elsewhere in these General Conditions or by or acts of neglect of the district.
 - 3. The delay was unreasonable under the circumstances and not within the contemplation of the parties and/or the Contract Documents.
- B. It is expressly understood and agreed that delays caused by the District will be non-compensable when there are concurrent delays caused by the Design Builder. Also, Design Builder shall have no entitlement to additional compensation for any delay where there have been concurrent delays caused by non-compensable delays, including, but not limited to, fire, floods, tidal waves, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes and freight embargoes weather days.
- C. In the event that the Design Builder submits a claim for additional costs associated with overhead, the Design Builder shall, within 60 calendar days of the District’s written request, submit to the District an audit examination and report performed by an independent Certified Public Accountant certifying the Design Builder’s actual unanticipated overhead costs. The independent Certified Public Accountant’s audit examination shall be performed in conformance with the requirements of the American Institute of Certified Public Accountants Attestation Standards. The audit examination and report shall depict the Design Builder’s project and company-wide financial records and shall specify the actual overall average daily rates for both field and home office overhead for the entire duration of the project, and whether the costs have been properly allocated. The rates of field and home office overhead shall exclude all unallowable costs as determined in the Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31. The audit examination shall determine if the rates of field and home office overhead;

1. Are allowable in conformance with the requirements of the Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31;
 2. Are adequately supported by reliable documentation; and
 3. Related solely to the project under examination.
- D. Upon the District's written request, the Design Builder shall make its financial records available for audit by the District for the purpose of verifying the actual rate of overhead specified in the audit submitted by the Design Builder. The overhead specified in the audit, submitted by the Design Builder, will be subject to review and approval by the District.

PART 2 – PRODUCT

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 30 50

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This section describes requirements for job site administration, including:

- 1.1.1.1 District's Representative
- 1.1.1.2 Design Builder's Project Management Team.

1.1.2 Related Sections.

- 1.1.2.1 Section 00 50 00 (Form of Agreement)
- 1.1.2.2 Section 01 11 13 (Work Covered by Contract Documents)
- 1.1.2.3 Section 01 33 00 (Submittal Procedures)
- 1.1.2.4 Section 01 70 00 (Execution and Closeout Procedures)

1.2 DISTRICT'S MANAGEMENT TEAM

1.2.1 The District shall be represented on this Contract by Ines Zildzic serving as District's Representative, who will act personally or through authorized designees. The District has designated Ron Hoyle, Project Manager to represent the District in carrying out the duties of District. The District may delegate all or a portion of the District's Representative's duties to the Project Manager or other District Representative, which shall then perform all or a portion of the District's Representative's duties specified herein.

1.2.2 Functions of the District's Representative include, but are not limited to, the following:

- 1.2.2.1 The District's Representative functions as the primary point of contact with the Design Builder in all matters concerning the Contract, monitoring the Design Builder's performance in all respects to ascertain that the Work is performed in accordance with all of the requirements of the Contract.
- 1.2.2.2 The District's Representative is the focal point of contact with the Design Builder regarding clarification of discrepancies and resolution of questions of fact that arise during performance of the Work under the Contract. The District's Representative also performs this role with regard to all agency and utility construction interfaces with the Work under this Contract.
- 1.2.2.3 The Design Builder is required by the Contract to provide formal notice of any and all potential claims arising during the performance of the Work. The District's Representative will administer the processing and resolution of any such claims in accordance with the requirements of the Contract.

- 1.2.2.4 All contractual correspondence, including submittals, shall be directed and processed through the District's Representative unless otherwise specifically directed in the Contract. Any required or requested communications between the Design Builder and District, the District's Representative, or any other representative of District, will be coordinated by the District's Representative.

1.3 DESIGN BUILDER'S PROJECT MANAGEMENT TEAM

- 1.3.1 The Design Builder shall staff the Project with a management team qualified and experienced in construction of a public works project of this value, nature and complexity including the individuals identified by Design Builder in its Proposal. This team shall possess the competency, skills and authority specified in Section 00 50 00 (Agreement).
 - 1.3.1.1 The Design Builder shall submit to the District prior to Notice to Proceed, the names, detailed project experience, references, and proposed project position for each team member. Key team members shall have appropriate experience in the proposed position.
 - 1.3.1.2 The Design Builder shall not replace members of the Design Builder's management team without prior written approval of the District. If, during the course of the Project, the Design Builder finds it necessary to replace a member of the Project Management Team, the name, qualifications, and experience of the proposed replacement shall be submitted to District for approval.
- 1.3.2 The Project Management Team shall be composed of members with the necessary skills and be sufficient in number to handle all duties normal to a project of this scale and complexity. Special attention shall be given to the responsibility of the Project Management Team for coordination and scheduling.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

**SECTION 01 31 10
CONSTRUCTION SCHEDULING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01290 – “Payment Procedure”
- C. Section 01312 – “Project Meetings”
- D. Section 01330 – “Submittal Procedures”
- E. Section 01610 – “Basic Product Requirements”
- F. Section 01770 – “Contract Closeout Procedures”
- G. Divisions 2 through 33 Sections for Construction Scheduling requirements for the work in those Sections.

1.3 SUMMARY

- A. This Section describes the requirements for Project construction schedules and reports.
- B. Development of schedules, cost loading of the schedule, and schedule updates, monthly payment requests, and project status reporting requirements of the Contract shall employ computerized Critical Path Method (CPM) scheduling utilizing Primavera P6.
- C. All CPM schedules shall be cost loaded based on the Master Schedule of Values, as approved by District.
- D. **Design Builder shall provide one (1) Primavera P6 licenses to be used by the on-site District Representative for the duration of the project.**

1.4 FAILURE TO MEET SCHEDULING REQUIREMENTS

- A. Failure of the Design Builder to provide proper schedules as required by this Section is a material breach of the contract and grounds for termination pursuant to the General Conditions. The District, at its sole discretion, may choose, instead, to withhold, in whole or in part, any progress payments or retention amounts otherwise payable to the Design Builder.

1.5 SCHEDULER'S QUALIFICATIONS

- A. Design Builder shall utilize experienced scheduling personnel qualified to use Primavera P6 Enterprise, current version scheduling software, or alternate software if approved by the District. Experience level required is set forth below. Design Builder may employ such personnel directly or may employ a consultant for this purpose.
- B. Within five (5) days after proposal opening, the apparent successful low bidder shall provide to District a written verification either that Design Builder has the required personnel under its employ or that Design Builder will employ a CPM scheduling consultant. This written verification shall include:
 - 1. Name of the individual who will perform all required CPM scheduling tasks during the entire Project.
 - 2. Resume of the individual, to include description of similar, recent construction projects on which the individual has successfully created and updated computerized CPM schedules. Experience must include at least two projects of similar nature, scope and value not less than three-fourths the Contract Price of this Project.
 - 3. Contact persons for all referenced projects with current telephone and address information.
- C. District reserves right to accept or reject Design Builder's scheduler, and right to reject them at any time.
- D. District also reserves right to refuse replacement of Design Builder's scheduler if it believes such replacement will negatively affect the Project.

1.6 CONSTRUCTION SCHEDULES, GENERAL

- A. Upon Notice to Proceed, Design Builder shall immediately commence development of initial and BASELINE CPM Schedules. Reference to Project Schedule shall pertain to the initial CPM schedule, BASELINE CPM schedule or an update of the BASELINE CPM Schedule as appropriate during the time period it is in affect during construction. When reference is made in the Contract Documents to a BASELINE CPM SCHEDULE, shall have the same meaning as an update to the BASELINE CPM SCHEDULE.
- B. All construction schedules shall be based on and incorporate all milestones and completion dates specified in the Contract Documents. See also Sections 01010, Summary of Work. Show in the schedule the sequence in which the Design Builder proposes to perform the Work and dates on which the Design Builder contemplates starting and completing all schedule activities. The scheduling of the entire project is required. Design Builder management personnel shall actively participate in its development. Subcontractors and suppliers working on the Project shall also contribute in developing and maintaining an accurate Project Schedule. Provide a Project Schedule that is a forward planning as well as a project monitoring tool.
- C. Use the approved Project Schedule to measure the progress of the Work and to aid in evaluating time extensions.
- D. Make the master BASELINE CPM SCHEDULE cost loaded and resource loaded.

- E. The schedule will provide the basis for all progress payments. If the Design Builder fails to submit any schedule within the time prescribed, the District may withhold approval of progress payments until the Design Builder submits the required schedule.
- F. Provide a Schedule Status Report on at least a monthly basis. If, in the opinion of the District, the Design Builder falls behind the approved schedule, the Design Builder shall take all steps necessary to improve its progress including those that may be required by the District or Project Manager, without additional cost to the District. In this circumstance, the District may require the Design Builder to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules as the District deems necessary to demonstrate how the approved rate of progress will be regained.
- G. Failure of the Design Builder to comply with the requirements of the District shall be grounds for a determination that the Design Builder is not prosecuting the Work with sufficient diligence to ensure completion within the time specified in the Contract Documents. Upon making this determination, the District may terminate the Design Builder's right to proceed with the Work, or any separable part of it, in accordance with the default terms of the Contract.
- H. NOT USED
- I. No Project Schedule shall exceed time limits set forth in the Contract Documents. Failure to submit a schedule, or submittal of a Project Schedule which shows completion of the Work beyond the specified completion date shall be deemed a material breach by the Design Builder.
- J. All Project Schedules must indicate the beginning and completion of all Work and shall use the "Critical path Method" for the value reporting, planning and scheduling of all Work required under the Contract Documents.
- K. Overall time of completion between the Notice to Proceed and Substantial Completion to Final Completion shown on any Project Schedule shall adhere to completion times as stated in the Construction Agreement, unless an earlier (advanced) time of completion is requested by Design Builder and agreed to by District. Any such agreement shall be formalized by a Change Order.
 - 1. District is not required to accept an advanced schedule, i.e., one that shows early completion dates for the Work or any Phase of the Work.
 - 2. In the event agreement is reached between Design Builder and District on an advanced schedule, Design Builder shall not be entitled to extra compensation if Design Builder completes its Work, for whatever reason (excepting approved changes with added time components) beyond completion date(s) shown in any approved advanced schedule but within the originally specified completion dates.
 - 3. Design Builder shall not submit a schedule showing early completion without indicating float time through the date set for Project completion by District.
 - 4. Design Builder's schedule shall account for all days past early completion as float which belongs to the Project. Usage of float shall not entitle Design Builder to any delay claim or damages due to delay.

- L. Float Ownership: Neither the District nor the Design Builder owns float. The Project owns the float. As such, liability for delay of the Substantial Completion Date(s) rests with the party whose actions, last in time, actually cause delay to the Substantial Completion Date(s).
 - 1. For example, if Party A uses some, but not all of the float and Party B later uses remainder of the float as well as additional time beyond the float, Party B shall be liable for the time that represents a delay to the Substantial Completion Date.
 - 2. Party A would not be responsible for the time since it did not consume the entire float and additional float remained; therefore, the Substantial Completion Date was unaffected.
- M. The District may disapprove of any construction schedule or require modification to it if, in the opinion of the District, adherence to the construction schedule will not cause the Work to be completed in accordance with the Agreement.
- N. Use Primavera P6, compatible with Windows operating system for creation and updates of all required construction schedules. Design Builder shall provide digital schedule P6 XER files to District on CD at times requested by District.
- O. Transmit construction schedule files under form approved by District.

1.7 SCHEDULE FORMAT AND LEVEL OF DETAIL

- A. All Work activity durations shall be in Workdays.
- B. The Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests associated with the changes.
- C. Responsibility for developing all Schedules and monitoring actual progress rests with Design Builder. Schedules shall comply with following requirements:
 - 1. All Design Builder, Subcontractor and assigned Design Builder work shall be shown in a logical work sequence that demonstrates a coordinated plan of work for all contractors. The intent is to provide a common basis of acceptance, understanding and communication, as well as interface with other contractors.
 - 2. Activities related to the delivery of Design Builder and District-furnished equipment to be Design Builder installed per Contract shall be shown.
 - a. District-furnished District Installed materials and equipment, if any, shall be identified as separate activities.
 - 3. Show District and other agency activities that could impact progress. These activities include, but are not limited to: approvals, submittal reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Owner Furnished Equipment (OFE) and Notice to Proceed (NTP) for Phasing requirements.
 - 4. All activities shall be identified through codes or other identification to indicate the phase of Work and Design Builder/Subcontractor responsibility to which they pertain.
 - 5. Show the critical path in red. For each activity, show early start, late start, early finish, late finish, durations measured in days, float, predecessor and successor activities, planned workday/week for the activity, and scheduled/actual progress payments.
 - 6. Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-

procurement activities shall have durations greater than 20 work days or 30 calendar days unless otherwise approved by District. Procurement activities are defined herein.

- a. Procurement Activities
 - i) The schedule must include activities associated with the submittal, approval, procurement, fabrication and delivery of long lead materials, equipment, fabricated assemblies and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 45 calendar days. A typical procurement sequence includes the string of activities: submit, approve, procure, fabricate, and deliver. Procurement of all contract required material and equipment shall be identified as a separate activity.
 - ii) These activities shall not be cost loaded unless previously approved, at the District's sole discretion, by the District.
 - b. Include time for fabrication and delivery of manufactured products for the Work.
 - c. Show dependencies between procurement and related construction activity.
7. Activity durations shall be total number of actual work days required to perform that activity.
 8. Provide activity coding to enable sorting by responsibility, location, phase of Work, Work Restriction, and CSI division. Assign activity codes to any activity or sequence of activities added to the Project Schedule as a result of a Change Orders, when approved by the District with a Change Order code. Integrate the code values to the Design Builder's numbering system. An activity shall not have more than one Change Order code.
 9. The start and completion dates of all items of Work, Work Phases, their major components, and milestone completion dates shall be included.
 10. Mandatory Tasks. The following tasks must be included and properly scheduled. Items noted with "SOV item upon Approval only" shall include an amount in the cost loaded schedule and in the SOV:
 - a. Submission of mechanical/electrical/information systems (BIM) layout drawings.
Submission, review and acceptance of DSA deferred approval packages. (SOV item upon Approval only)
 - b. Submission and approval of O & M manuals. (SOV item upon Approval only)
 - c. Submission and approval of as-built drawings. (SOV item upon Approval only)
 - d. Submission and approval of installed equipment lists. (SOV item upon Approval only)
 - e. Submission and approval of testing and air balance (TAB) if applicable. (SOV item upon Approval only)
 - f. Submission of TAB specialist design review report if applicable.
 - g. Submission and approval of fire protection specialist if applicable.
 - h. Submission and approval of testing and balancing of HVAC plus commissioning plans and data if applicable.
 - i. Air and water balancing if applicable.
 - j. HVAC commissioning if applicable.

- k. Controls testing plan submission if applicable.
 - l. Controls testing if applicable.
 - m. Performance Verification testing if applicable. (SOV item upon Approval only)
 - n. Other systems testing, if required.
 - o. Design Builder's pre-final inspection.
 - p. Correction of punch list from Design Builder's pre-final inspection. (SOV item upon Approval only)
 - q. District's pre-final inspection.
 - r. Correction of punch list from District's pre-final inspection. (SOV item upon Approval only)
 - s. Final inspection.
 - t. Allowances for normal weather and Campus non-work days
11. Dependencies (or relationships) between activities shall be shown.
 12. Complete all activity descriptions, including what Work is to be accomplished, where, and when.
 13. Include anticipated non-Work days, such as weekends, holidays, and/or other observances in the Schedule.
 14. Provide activity coding to enable sorting by responsibility, location, phase of Work, Work Restriction, and CSI division. Assign activity codes to any activity or sequence of activities added to the Project Schedule as a result of a Change Orders, when approved by the District with a Change Order code. Integrate the code values to the Design Builder's numbering system. An activity shall not have more than one Change Order code.
 15. The start and completion dates of all items of Work, Work Phases, their major components, and milestone completion dates shall be included.
 16. Design Builder's Shop Drawing and Samples Submittal Schedule: As part of the BASELINE CPM SCHEDULE submittal, the Design Builder shall prepare a separate schedule for review and approval by the District, detailing the processing and approval of submittals and shop drawings for all Contract-required material and equipment. This schedule shall be extracted from the BASELINE CPM SCHEDULE. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates.
 - a. Include time for submittals, resubmittals, and reviews by District and DSA. Coordinate with accepted Project Schedule for submission of shop drawings, samples and other submittals.
 - b. Design Builder shall be responsible for all impacts resulting from resubmittal of either shop drawings or any other required submittal.
 17. Complete all activity descriptions, including what Work is to be accomplished, where, and when.
 18. The costs associated with each Work activity shall be the total of labor, material, equipment, including overhead and profit of Design Builder. The sum of the costs for all activities shall equal the total Contract value.

19. Include an identify code for each activity corresponding to either the Design Builder or Subcontractor responsible for performing the Work.
 20. Identify the Work activities that constitute the critical path. No more than twenty-five (25%) of the activities shall be critical or near critical. Near critical is defined as float in the range of one (1) to seven (7) calendar days.
 21. Include at least twenty (20) workdays for the combined durations of all activities related to developing punch list(s), completion of punch list items and final clean-up for the Work or any designated portion thereof. No other activities shall be scheduled during this period. Refer to Section 01770, Contract Closeout Procedures for specific activities required.
 22. Show detailed Subcontractor Work activities. In addition, furnish copies of Subcontractor schedules upon which BASELINE CPM SCHEDULE was built.
 - a. Also furnish for each Subcontractor, as determined by District, submitted on Subcontractor letterhead a statement certifying that Subcontractor concurs with Design Builder's BASELINE CPM SCHEDULE, and that Subcontractor's related schedules have been incorporated.
 - b. Subcontractor schedules shall be independently derived and not a copy or subset of the Design Builder's BASELINE CPM SCHEDULE.
 - c. Furnish schedule for Design Builder/Subcontractor CPM schedule meetings which shall be held prior to submission of BASELINE CPM SCHEDULE to District. District shall be permitted to attend scheduled meetings as an observer.
 23. Submit a list of anticipated non-Work days, such as weekends, holidays, and/or other observances.
- D. Seasonal weather conditions (which do not constitute a delay as defined herein) shall be considered in the planning and scheduling of all work influenced by high or low ambient temperatures or presence of high moisture for the completion of the Work within the allotted Contract Time. See Section 01305 (Delay and Extensions to the Work.)
- E. Failure by Design Builder to include any element of Work required for performance of the Work on any Project schedule shall not excuse Design Builder from completing all Work required within the Contract Time.
- F. Design Builder shall schedule all deferred approval items and shop drawings in its schedules if appropriate. If Design Builder fails to include deferred approval items and shop drawings in its schedule which results in a critical path delay, then Design Builder shall be subject to the assessment of liquidated damages.
- G. CPM Logic Requirements
1. The Project Schedule interval shall extend from NTP date to the required Contract Substantial and Final Completion dates. The Contract completion activity (End Project) shall finish based on the required contract duration in the Contract Documents, as adjusted for any approved contract time extensions. The first scheduled work period shall be the day after NTP is acknowledged by the Design Builder. Schedule activities on a calendar to which the activity logically belongs. Activities may be assigned to a 7-day calendar when the contract assigns calendar day durations for the activity such as a District acceptance activity if the Contract Documents specify Calendar Days. If the Design Builder intends to perform physical work less than seven days per week, schedule the

associated activities on a calendar with non-work periods identified including weekends and holidays. Assign the Category of Work Code – Weather Sensitive Installation to those activities that are weather sensitive. Original durations must account for anticipated normal adverse weather. The District will interpret all work periods not identified as non-work periods on each calendar as meaning the Design Builder intends to perform work during those periods.

2. The Project Schedule shall start no earlier than the date on which the NTP was acknowledged. Include as the first activity in the Project Schedule an activity called "Start Project"(or NTP). The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero-day duration
3. Project Schedule Constraints and Open-Ended Logic Constrain completion of the last activity in the Project schedule by the Contract Final Completion date. Schedule calculations shall result in a negative float when the calculated early finish date of the last activity is later than the Contract Final Completion date. Include as the last activity in the Project Schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the Contract Final Completion date for the Project, with a zero-day duration, or shall achieve the same result by using the "project must finish on" date in the scheduling software. The Project Schedule shall have no constrained dates other than those specified in the Contract. The use of artificial float constraints such as "zero fee float" or "zero total float" are prohibited unless the Design Builder specifically requests preapproval and receives District approval of this constraint on an activity specific level. There shall only be 2 open ended activities: Start Project (or NTP) with no predecessor logic and End Project with no successor logic.
4. In the event the Initial CPM schedule or BASELINE CPM SCHEDULE calculates an early completion date of the last activity prior to the Contract Final Completion date, the Design Builder shall identify those activities that it intends to accelerate and/or those activities that are scheduled in parallel to support the Design Builder's "early" completion. The last activity shall have a late finish constraint equal to the Contract Final Completion date and the schedule will calculate positive float. The District will not approve an early completion Project Schedule with zero float on the longest path. The District is under no obligation to accelerate activities for which it is responsible to support a proposed early contract completion.
5. Interim Completion Dates. Constrain contractually specified interim completion dates to show negative float when the calculated early finish date of the last activity in that phase is later than the specified interim completion date.
6. Start Phase. Include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and zero-day duration.
7. End Phase. Include as the last activity for a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" Constraint date equal to the specified completion date for that phase and a zero-day duration.
8. Phase "X" Hammock. Include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" hammock activity shall be logically tied to the earliest and latest activities in the phase.

9. Default Progress Data Disallowed. Do not automatically update Actual Start and Finish dates with default mechanisms that may be included in the scheduling software. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process shall match those dates provided from Daily Reports. Failure of the Design Builder to document the AS and AF dates on the Daily Report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Reports is the sole basis for schedule updating shall result in the disapproval of the Design Builder's updated BASELINE CPM SCHEDULE and the inability of the District to evaluate Design Builder progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Disable program features which calculate one of these parameters from the other.
10. Other Logic Requirements:
 - a. Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case basis subject to approval by the District. Propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated Project Schedule. Correct out of sequence progress that continues for more than two update cycles by logic revision, as approved by the District.
 - b. Lag durations contained in the project schedule shall not have a negative value. Do not use Start to Finish (SF) relationships.
 - c. Project Schedule calculations shall retain the logic between predecessors and successors even when the successor activity starts and the predecessor activity has not finished. Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") will not be allowed.
11. Milestones. The Project Schedules must include milestone activities for each significant project event including but not limited to: All phases, foundation/substructure construction complete; superstructure construction complete; building dry-in or enclosure complete to allow the initiation of finish activities; permanent power complete; and building systems commissioning complete (for each applicable phase of Work).

1.8 INITIAL CRITICAL PATH METHOD (CPM) SCHEDULE

- A. Within ten (10) calendar days following Notice to Proceed, Design Builder shall submit an Initial CPM Schedule along with an Initial Schedule of Values for District's approval.
- B. Within ten (10) calendar days following Notice to Proceed, Design Builder shall submit a cost curve based on the Initial CPM Schedule and the Initial Schedule of Values, showing the cumulative estimated payments for all of the Work for the entire period of performance;
- C. District and Design Builder shall meet to review and discuss the Initial CPM Schedule within five (5) working days after it has been submitted to District.
 1. District's review and comment on the Initial CPM schedule shall be limited to conformance with the Contract Documents (with Work phasing, sequencing, coordination, milestone requirements, and specified formatting and information requirements) and accepted CPM principals.

2. Design Builder shall make corrections to the Initial CPM Schedule as necessary to comply with Contract requirements and shall adjust the schedule to incorporate any missing information as requested by District. Design Builder shall resubmit the Initial CPM Schedule if requested by District.
- D. Initial CPM Schedule must indicate detailed plan for the Work to be completed during the first sixty (60) days of the Contract, including details of planned mobilization of plant and equipment, the sequence of early operations, and the procurement of materials and equipment. Show Work beyond ninety (90) calendar days in summary form through the Contract Substantial and Final Completion dates.
 - E. Initial CPM Schedule shall be time-scaled.
 - F. The accepted Schedule of Values will be used as basis for initial payments until acceptance of the BASELINE CPM SCHEDULE by District. Use of the Initial Schedule of Values for progress payments shall not exceed sixty (60) calendar days.
 - H. If, during the first thirty (30) days after Notice-to-Proceed, the Design Builder is of the opinion that any of the Work included on its Initial CPM Schedule has been impacted, the Design Builder shall submit to District a written Time Impact Evaluation (TIE) in accordance with the requirement of this Section. The TIE shall be based on the most current update of the initial CPM Schedule.

1.9 BASELINE CPM SCHEDULE

- A. Within fifteen (15) calendar days from approval of the Initial CPM Schedule, Design Builder shall submit on P6 XER files a detailed BASELINE CPM SCHEDULE, including cost loading, presenting an orderly and realistic plan for completion of the Work, in conformance with requirements specified herein.
- B. Failure of the BASELINE CPM SCHEDULE to include any element of the Work or any inaccuracy in the BASELINE CPM SCHEDULE will not relieve Design Builder from responsibility for accomplishing the Work in accordance with the Contract.
- C. District's acceptance of the BASELINE CPM SCHEDULE shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon District, or act to relieve Design Builder of its responsibility for means and methods of construction.
- D. Design Builder shall, within 10 calendar days from the Submittal of the BASELINE CPM SCHEDULE, shall meet with District to review the BASELINE CPM SCHEDULE submittal.
 1. Design Builder shall have its Construction Manager, Project Superintendent, Project Scheduler, and key Subcontractor representatives, as required by District, in attendance. The meeting will take place over a continuous one-day period.
 2. District's review will be limited to submittal's conformance to Contract requirements. Review may also include:
 - a. Critical path method principles and tenets utilized
 - b. Clarifications of Contract Requirements
 - c. Directions to include activities and information missing from the submittal

- d. Requests to Design Builder to clarify its schedule
3. Within five (5) days of the Schedule Review Meeting, Design Builder shall respond in writing to all questions and comments expressed by District at the Meeting.

1.10 ADJUSTMENTS TO THE BASELINE CPM SCHEDULE

- A. Design Builder shall revise the BASELINE CPM SCHEDULE submittal to address all review comments from the review meeting described above, and resubmit the BASELINE CPM SCHEDULE for District review and approval.
 1. District, within ten (10) days from date that Design Builder submitted the revised BASELINE CPM SCHEDULE, will either:
 - a. Accept the BASELINE CPM SCHEDULE as submitted, or
 - b. Advise Design Builder in writing to review any part or parts of the BASELINE CPM SCHEDULE which either do not meet Contract requirements, or are unsatisfactory for District to purposes of monitoring Project progress, resources, and status, or to evaluate monthly payment request by Design Builder.
 2. District may accept the BASELINE CPM SCHEDULE with conditions that the first monthly update of the BASELINE CPM SCHEDULE will be revised to correct identified deficiencies.
 3. When the BASELINE CPM Schedule is accepted, it shall be considered the BASELINE CPM SCHEDULE, which will then be immediately updated to reflect the current status of the work.
 4. District reserves right to require Design Builder to adjust, add to, or clarify any portion of BASELINE CPM Schedule which may later be discovered to be insufficient for monitoring the Work or approving payment requests. No additional compensation will be due to the Design Builder for any such adjustments, additions, or clarifications.
- B. Acceptance of Design Builder's BASELINE CPM SCHEDULE by District will be based upon schedule's compliance with Contract requirements and accepted CPM principles.
 1. In assigning activity durations and proposing Work sequences, Design Builder agrees to utilize sufficient and necessary management and other resources to perform work in accordance with the approved BASELINE CPM SCHEDULE.
 2. Upon submittal and District approval of any BASELINE CPM SCHEDULE Update, such updated schedule shall then be considered the "current" BASELINE CPM SCHEDULE.
 3. Submission of Design Builder's BASELINE CPM SCHEDULE to District shall not relieve Design Builder of total responsibility for scheduling, sequencing, and executing the Work to comply with requirements of Contract Documents, including recovery from adverse effects such as delays resulting from ill-timed work.
- C. Submittal of the BASELINE CPM SCHEDULE, and subsequent Updates on P6 XER files shall be understood to be the Design Builder's representation that the BASELINE CPM SCHEDULE meets all requirements of Contract Documents, and that the Work shall be executed in the sequence and within the time indicated on the schedule.

- D. Design Builder shall distribute the BASELINE CPM SCHEDULE to Subcontractors for review and written acceptance, which shall be noted on Subcontractors' letterhead to Design Builder and transmitted to District for the Project record.

1.11 BASELINE CPM SCHEDULE MONTHLY UPDATES

- A. Following acceptance of Design Builder's BASELINE CPM SCHEDULE, Design Builder shall monitor the progress of Work and adjust the BASELINE CPM SCHEDULE each month to reflect actual progress, and to illustrate any anticipated changes to planned activities.
 - 1. Each BASELINE CPM SCHEDULE Update submitted by Design Builder on P6 XER files shall be complete, including all information requested for the original BASELINE CPM SCHEDULE submittal.
 - 2. Each BASELINE CPM SCHEDULE Update submitted by Design Builder shall continue to show all work activities including those already completed. Any completed activities shall accurately reflect "as built" information by indicating when Work activities were actually started and completed. Design Builder shall warrant the accuracy of as-built information shown on each BASELINE CPM SCHEDULE Update.
- B. A meeting will be held within the first week of each month with the District and Project Inspector to review the BASELINE CPM SCHEDULE Update submittal and progress payment application for the previous month. Conduct periodic schedule update meetings for the purposes of reviewing the Design Builder's proposed out of sequence corrections, determining causes for delay, correcting logic, maintaining schedule accuracy and determining earned value. Provide a computer with the scheduling software loaded and a projector during the meeting which allows all meeting participants to view the proposed BASELINE CPM SCHEDULE Update during the meeting. The meeting and resultant approvable BASELINE CPM SCHEDULE Update shall be a condition precedent to a formal submission of the BASELINE CPM SCHEDULE Update and to the submission of an invoice for payment. The meeting will be a working interactive exchange which will allow the District and the Design Builder the opportunity to review the BASELINE CPM SCHEDULE Update on a real time and interactive basis. The Design Builder's authorized scheduling representative will organize, sort, filter and schedule the update as requested by the District. A rough draft of the proposed activity logic corrections and narrative report shall be provided to the District 48 hours in advance of the meeting.
 - 1. At this monthly meeting, a minimum requirement for review shall be included, but not limited to the following items:
 - a. Percent complete of each Work activity
 - b. Time impact evaluations for Change Orders and Time Extension Requests, if any
 - c. Actual and anticipated Work activity sequence changes
 - d. Anticipated Work activity duration changes
 - e. Actual and anticipated Design Builder delays
 - 2. These meetings are a critical component of overall monthly BASELINE CPM SCHEDULE Update submittal and Design Builder shall ensure appropriate personnel attend. At a minimum, Design Builder's Project Engineer, General Superintendent, and Scheduler shall attend these meetings.

3. Status of Activities. Update information, including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD), and Percent Complete shall be subject to the approval of the District at to the meeting. As a minimum, address the following items on an activity by activity basis during each progress meeting.
 - a. Start and Finish Dates. Accurately show the status of the AS and/or AF dates for each activity currently in-progress or completed since the last update. The District may allow an AF date to be assigned with the percent complete less than 100% to account for the value of work remaining but not restraining successor activities. Only assign AS dates when actual progress occurs on an activity.
 - b. Remaining Duration. Update the estimated RD for all incomplete activities independent of Percent Complete. Remaining Durations may exceed the activity original duration (OD) or may exceed the activity's prior update RD if the District considers the current OD or RD to be understated based on current progress, insufficient work crews actually manning the job, unrealistic OD or deficiencies that must be corrected that restrain successor activities.
 - c. Percent Complete. Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work, and which do not restrain the initiation of successor activities, may be declared 100 percent complete. To allow for proper schedule management, cost load the correction of punch list from District pre-final inspection activity(ies) for each phase not less than 1 percent of the total value of that phase, which activity(ies) may be declared 100 percent complete upon completion and correction of all punch list work identified during District's pre-final inspection(s).
 - d. Logic Changes. Specifically identify and discuss all logic changes pertaining to NTP on change orders, change orders to be incorporated into the BASELINE CPM SCHEDULE Update, Design Builder proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, and other changes that have been made pursuant to contract provisions. The District will only approve logic revisions for the purpose of keeping the schedule valid in terms of its usefulness in calculating a realistic completion date, correcting erroneous logic ties, and accurately sequencing the work.
 - e. Other Changes. Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Design Builder's control, such as strikes and unusual weather. 2) delays encountered due to submittals, District activities, deliveries or work stoppages which make re-planning the work necessary.
 - f. Changes required to correct a BASELINE CPM SCHEDULE Update that does not represent the actual or planned prosecution and progress of the Work.
- C. Within five (5) working days after monthly schedule update meeting, Design Builder shall submit the updated BASELINE CPM SCHEDULE Update.
- D. Within five (5) workdays of receipt of above noted revised submittals, District will either accept or reject monthly BASELINE CPM SCHEDULE Update submittal.

4. If rejected, update shall be corrected and resubmitted by Design Builder before the Application for Payment is submitted.
 5. District will not review Design Builder's application for payment if the updated monthly BASELINE CPM SCHEDULE Update is not provided and accepted by District.
- E. Neither updating, changing or revising of any report, curve, schedule or narrative submitted by Design Builder under this Contract, nor District's review or acceptance of any such report, curve, schedule or narrative, shall have the effect of amending or modifying in any way the Contract Substantial or Final Completion date or any phase completion dates, or of modifying or limiting in any way Design Builder's obligations under this Contract.
 - F. Updating the BASELINE CPM SCHEDULE to reflect actual progress shall not be considered revisions to the Project Schedule.
 - G. To clarify any revisions to the BASELINE CPM SCHEDULE Update, the Design Builder shall provide District with a written narrative explaining the reasons for each Work activity revision. For revisions affecting the sequence of work, the Design Builder shall provide a schedule diagram which compares the original sequence to the revised sequence of work. The Design Builder shall provide the written narrative and schedule diagram for revisions two (2) working days in advance of the monthly BASELINE CPM SCHEDULE Update meeting.
 - H. Schedule revisions shall not be incorporated into any BASELINE CPM SCHEDULE Update until the revisions have been reviewed and approved by District. District may request further information and justification for BASELINE CPM SCHEDULE revisions. Design Builder shall, within three (3) days of any such District request, provide District with a complete written narrative response.
 - I. If the Design Builder's revision is still not accepted by District, and the Design Builder disagrees with District's position, the Design Builder has three (3) work days from receipt of District's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. The Design Builder's failure to respond in writing within three (3) work days of District's written rejection of a schedule revision shall be contractually interpreted as acceptance of District's position, and the Design Builder waives its rights to subsequently dispute or file a claim regarding District's position.
 - J. At District's discretion, the Design Builder may be required to provide subcontractor(s) certifications of Work activity performance regarding any proposed BASELINE CPM SCHEDULE revisions affecting said subcontractor(s).

1.12 WEEKLY LOOK AHEAD SCHEDULE

- A. At each Weekly Progress Meeting, the Design Builder shall provide and present a time-scaled three (3) week schedule: one (1) week behind and two (2) week look ahead schedule that is based on and correlated by activity number in the current BASELINE CPM SCHEDULE Update. Provide a two week look ahead schedule in bar chart format, showing daily activities for that period.

1.13 OTHER SCHEDULE RELATED REPORTS

- A. Submit four (4) hard copies of the following reports with the Initial CPM Schedule, the Master CPM Schedule, and with each monthly update of the BASELINE CPM SCHEDULE:
 - 1. Two (2) activity-listing reports: one report sorted by activity number and one report by total float. These reports shall also include each activity's early/late and actual start and finish dates, original and remaining duration, float, responsibility code and the logic relationship of activities.
 - 2. Schedule plots presenting time scaled network diagram showing activities and their relationships with the controlling operations or critical path clearly highlighted.
 - 3. Monthly status report, to include:
 - a. Status of major Project components (percent complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.
 - b. Progress made on critical activities indicated on Project Schedule.
 - c. Explanations for any lack of work on critical path activities planned to be performed during last month.
 - d. Explanations for any schedule changes, including changes to logic or to activity durations.
 - e. List of critical activities scheduled to be performed next month.
 - f. Status of major material, and equipment procurement.
 - g. Any delays encountered during reporting period.
 - h. Design Builder may include any other information pertinent to status of Project. Design Builder shall include additional status information requested by District at no additional cost.
 - i. Status reports, and the information contained therein, shall not be construed by the Design Builder as claims, notice of claims, notice of delay, or requests for changes or compensation.
- B. Furnish DISTRICT with digital files of all reports and BASELINE CPM SCHEDULE Updates on labeled CD ROM

1.14 RECOVERY SCHEDULE

- A. If any BASELINE CPM SCHEDULE Update shows that the Contract Substantial Completion date is five (5) calendar days beyond the Contract Substantial Completion date, the Design Builder shall submit to District proposed schedule revisions to recover the lost time within seven (7) calendar days. As part of this Recovery Schedule submittal, the Design Builder shall provide a written narrative for each schedule revision made to recapture the lost time. If the revisions include sequence changes, the Design Builder shall provide a schedule diagram comparing the original sequence to the revised sequence of work.
- B. Recovery Schedule revisions shall not be incorporated into any BASELINE CPM SCHEDULE Update until the revisions have been reviewed and approved by the District.

- C. If the Design Builder's Recovery Schedule revisions are not accepted by District, District and the Design Builder shall follow the procedures in paragraph 1.10 H through J, above.
- D. If requested by District, Design Builder shall provide revised schedules within ten (10) days if, at any time, the District consider the completion date to be in jeopardy because of activities that are behind schedule. The additional schedule shall include a new arrow or precedence diagram and schedule reports conforming to the requirements herein, designed to show how the Design Builder intends to accomplish the Work to meet the completion date.
- E. The Design Builder shall modify any portions of the schedule that become infeasible because of "activities behind schedule" or for any other valid reason. An activity that cannot be completed by its original latest completion date shall be deemed to be behind schedule.

1.15 TIME IMPACTS EVALUATION (TIE) FOR CHANGE ORDERS AND OTHER POTENTIAL DELAYS

- A. When Design Builder is directed to proceed with changed Work, which the Design Builder considers have a time impact, the Design Builder shall prepare and submit, within seven (7) calendar days from the direction to proceed, a Time Impact Evaluation (TIE) which includes both a written narrative and a schedule diagram depicting how the changed work affects other schedule activities. The schedule diagram shall show how the Design Builder proposes to incorporate the changed Work in the schedule, and how it impacts the current BASELINE CPM SCHEDULE and critical path. The Design Builder is responsible for requesting time extensions based on the TIEs impact on the critical path. The diagram must correspond to the main sequences of Work activities in the current BASELINE CPM SCHEDULE, to enable District to evaluate time impact of changed work to the scheduled critical path.
- B. Design Builder shall be required to comply with the above requirements for all types of delays such as, but not limited to, Design Builder/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.
- C. Design Builder shall be responsible for all costs associated with the preparation of Time Impact Evaluations, and the process of incorporating them into the current schedule update. The Design Builder shall provide District with 3 copies of each TIE.
- D. Once agreement between District and Design Builder has been reached on a TIE, the Contract time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract time may be extended in an amount District allows, and the Design Builder may submit a claim for additional time.
- E. If the Design Builder does not submit a TIE within the required seven (7) calendar days for any issue, it is mutually agreed that the Design Builder does not require a time extension for said issue.

1.16 TIME EXTENSIONS

- A. The Design Builder is responsible for requesting time extensions for time impacts that, in the opinion of the Design Builder, impact the critical path of the currently updated BASELINE CPM SCHEDULE.

- B. Design Builder shall not be granted an extension of time for failure to obtain necessary approvals for deferral approvals due to failure to comply with laws, building codes, and other regulations (including Title 24 of the California Code of Regulations).
- C. No time extensions will be granted under this Contract for the cumulative effect of changes in the Work.
- D. District will not be obligated to consider any time extension request unless requirements of Contract Documents have been met.
- E. Failure of the Design Builder to perform in accordance with the currently updated BASELINE CPM SCHEDULE Update shall not be excused because of submittal of a time extension request.
- F. Where an event for which District is responsible impacts the projected Contract Substantial Completion date of the Work, or any phase of the Work, the Design Builder shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. The Design Builder shall also include a detailed cost breakdown of the labor, equipment, and material the Design Builder would expend to mitigate District caused time impact. The Design Builder shall submit its mitigation plan to District within seven (7) calendar days from the date of discovery of said impact. The Design Builder is responsible for the cost to prepare the mitigation plan.
- G. Design Builder's failure to a request time extension, provide a TIE, or provide the required mitigation plan will result in Design Builder waiving its right to both a time extension and to recovering any costs to mitigate the delay.

PART 2 - PRODUCTS - Not applicable to this section.

PART 3 - EXECUTION - Not applicable to this section.

END OF SECTION 01 31 10

PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This section describes the required project meetings for this work. These meetings include:

- 1.1.1.1 Design and Preconstruction Conferences.
- 1.1.1.2 Coordination Meetings
- 1.1.1.3 Progress Meetings
- 1.1.1.4 Scheduling Meetings.
- 1.1.1.5 Quality Control Meetings
- 1.1.1.6 Special Meetings.

1.1.2 Related Sections.

- 1.1.2.1 Section 00 50 00 (Form of Agreement)
- 1.1.2.2 Section 01 11 00 (Work Covered by Contract Documents)
- 1.1.2.3 Section 01 11 20 (Design Services and Deliverables)
- 1.1.2.4 Section 01 33 00 (Submittal Procedures)

1.2 DESIGN & PRECONSTRUCTION CONFERENCE

1.2.1 District will call for and administer Design and Preconstruction Conferences at times and places to be announced. A Design Confirmation Conference will occur as soon after issuance of the Notice to Proceed as can be reasonably scheduled. Preconstruction Conferences will be scheduled no later than 30 days prior to the start of construction of the Work.

1.2.2 Design Builder, all Subconsultants and major suppliers shall attend the Design Confirmation Conference(s). Agenda will include, without limitation, the following items:

- 1.2.2.1 Design Builder and District Coordination and Meeting Procedures
- 1.2.2.2 Design Builder's Design Confirmation Plan with Subconsultants
- 1.2.2.3 Design Builder's Initial CPM Schedule for Design and Construction
- 1.2.2.4 Design Builder's Schedule of Values (including design activities)
- 1.2.2.5 Design Builder's Schedule of Deliverables and Agency Submittals

1.2.3 Design Builder, all Subcontractors, and all major suppliers shall attend the Preconstruction Conference(s). Agenda will include, without limitation, the following items:

- 1.2.3.1 Schedules
- 1.2.3.2 Personnel and vehicle permit procedures
- 1.2.3.3 Use of premises/Limits of Work
- 1.2.3.4 Location of the Design Builder's on-site facilities

- 1.2.3.5 Security
- 1.2.3.6 Site specific safety plan
- 1.2.3.7 Housekeeping
- 1.2.3.8 Design Builder's Quality Control Program
- 1.2.3.9 Submittals
- 1.2.3.10 Inspection and testing procedures, on-site and off-site
- 1.2.3.11 Utility shutdown procedures
- 1.2.3.12 Control and reference point survey procedures
- 1.2.3.13 Injury and Illness Prevention Program
- 1.2.3.14 Design Builder's Updated CPM Schedule
- 1.2.3.15 Design Builder's Schedule of Values
- 1.2.3.16 Design Builder's Schedule of Submittals

1.2.4 District will distribute copies of minutes to attendees. Attendees shall have five (5) Business Days to submit comments or additions to minutes. Minutes will constitute final project record of results of any conference.

1.3 COORDINATION MEETINGS

1.3.1 Collaboration and Design Phase Coordination

- 1.3.1.1 District will be available to participate in Design Confirmation meetings or workshops as deemed necessary by the Design Builder.
- 1.3.1.2 Design Builder shall conduct at least weekly design coordination meetings with all subconsultants employed by the Design Builder. Design Builder shall invite the District or its representative to participate in these meetings.

1.3.2 Construction Phase Coordination

- 1.3.2.1 District will be available as necessary to participate in Construction Phase Coordination Meetings.
- 1.3.2.2 Design Builder Construction Phase Coordination shall be integrated with the Design Builder's Quality Control Program, see Section 01 45 00 (Quality Control).
- 1.3.2.3 Design Builder shall conduct at least monthly Construction Phase Coordination Meetings with all Subcontractors employed by Design Builder. Design Builder shall invite District's representative to attend these meetings. Design Builder shall invite District to attend Design Builder's Quality Control Meetings.

1.4 PROGRESS MEETINGS

- 1.4.1 District will schedule and administer Progress Meetings throughout the duration of Design and Construction Work. Progress meetings will be held weekly unless otherwise directed by District.
 - 1.4.1.1 Design Phase Progress Meetings shall be held at the offices of the Design Builder's Architect or at the Office of the District as is mutually

agreed upon in advance by Design Builder and District Representative to be most advantageous for completing the Work.

- 1.4.1.2 Construction Phase Meetings shall be held at the Design Builder's Site office unless otherwise agreed between Design Builder and the District.
- 1.4.1.3 District will prepare an agenda and distribute it to the Design Builder and any Inspector in advance of the meeting.
- 1.4.1.4 District will preside at and conduct the meeting.
- 1.4.1.5 District will record and distribute minutes to the Design Builder, Inspectors, all other participants, and those affected by decisions made at a meeting, within five (5) Business Days after each meeting. Attendees shall have five (5) Business Days to submit comments or additions to the minutes. Minutes will constitute final project record of results of meeting.

1.5 SCHEDULING MEETINGS

1.5.1 Initial Schedule Review

- 1.5.1.1 Design Builder shall meet with the District and conduct initial review of the Design Builder's draft: Design Schedule, Design Deliverables Schedule, Shop Drawing and Sample Submittal Schedule, Schedule of Values, and Progress Schedule.
- 1.5.1.2 An authorized representative in the Design Builder's organization, designated in writing and who will be responsible for working and coordinating with District relative to preparation and maintenance of Progress Schedule, shall attend the initial review meeting.

1.5.2 Schedule Update Meetings

- 1.5.2.1 District will administer scheduling update meetings monthly and will distribute minutes of scheduling meetings to attendees. Details for Schedule Update Meetings shall conform to the description provided in Section 00 50 00 (Agreement).

1.6 QUALITY CONTROL MEETINGS

- 1.6.1 Design Builder shall conduct at a minimum weekly Quality Control Meetings as part of the Design Builder's Quality Control Program, see Section 01 45 00 (Quality Control).
- 1.6.2 Design Builder's attendees at Quality Control Meetings shall at a minimum include:
 - 1.6.2.1 Design Builder's Quality Control Manager
 - 1.6.2.2 Design Builder's Commissioning Coordinator; as required
 - 1.6.2.3 Design Builder's Safety Officer
 - 1.6.2.4 Subcontractors actively working on Site or preparing to mobilize.

- 1.6.2.5 Representatives of manufacturers and fabricators; as required
- 1.6.2.6 Design Builder's Architect
- 1.6.2.7 Subconsultant Engineers as activities dictate.

1.6.3 District's attendees at Quality Control Meetings shall at a minimum include:

- 1.6.3.1 District's Representative
- 1.6.3.2 District's Inspector of Record

1.6.4 Quality Control Meetings agendas shall include at a minimum:

- 1.6.4.1 Submittal Review, including approval status and schedule
 - 1.6.4.1.1 Product Data and Material Safety Data Sheets (MSDS)
 - 1.6.4.1.2 Shop Drawings & Coordination Documents
 - 1.6.4.1.3 Substitutions and Modifications Requests
 - 1.6.4.1.4 Manufacturer's Installation Requirements & Instructions
 - 1.6.4.1.5 Manufacturer's Operating Requirements & Instructions
- 1.6.4.2 Distribution of Testing and Inspection Reports
- 1.6.4.3 Review of In-progress activities for compliance and timeliness.
- 1.6.4.4 Coordination of Upcoming Testing, Inspection and Observation Procedures & Requirements
- 1.6.4.5 Summary of activity successes, deficiencies, and corrective measures

1.7 SPECIAL MEETINGS

- 1.7.1 Preparatory Meetings as activities dictate for Testing, Inspection and Observation.
- 1.7.2 Commissioning Meetings per approved Commissioning Plan and Schedule.
 - 1.7.2.1 Pre-Commissioning Planning
 - 1.7.2.2 Commissioning Plan Review
 - 1.7.2.3 Commissioning Scheduling and Procedures
- 1.7.3 Community Meetings as directed by District.
- 1.7.4 Ad Hoc Meetings as directed by District.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 20

PROJECT MANAGEMENT SOFTWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 All Contract Documents apply to the work of this section.

1.1.2 This section contains general information that applies to all work performed under the Contract, and is made inherently a part of each specification section.

1.2 GENERAL PROJECT MANAGEMENT

1.2.1 The District hereby directs Design Builder to use the Project's Web-based project management software to track and manage the Project.

1.2.1.1 The District is utilizing the Bentley Systems, Incorporated (Bentley) web-based system, EACOD software, for document control, management and communications for all project related items including but not limited to:

1. Submittals/Shop Drawings/Samples
2. Submittal substitution requests
3. Requests for Information
4. Non-Compliance Reports
5. Schedules
6. Project Photographs
7. Posting Weekly Project Meeting Minutes
8. Change Order Request
9. Field Instructions
10. Payment Requests
11. Daily Reports
12. Inspection and Special Inspection & Testing Requests
13. Punch lists
14. Architectural Supplemental Instructions
15. Memos
16. Conformed Drawings and Specifications

1.2.2 Use of this project management software will not replace or change any contractual responsibilities of the project team members.

1.2.3 Each Project Team Member of the Design Builder: Superintendent, Project Engineer, Scheduler, and Project Manager, etc., shall have access to the Internet

and an Internet e-mail address in order to communicate with various project team members. The Design Builder shall provide immediately upon receipt of the Notice to Proceed confirmation of these conditions and the names, positions, and e-mail addresses to the District.

1.3 SOFTWARE AND HARDWARE REQUIREMENTS

- 1.3.1 The Design Builder is required to provide at both the field office and home office locations from where this project is managed, the computer hardware, software and high speed Internet access that meet the requirements of the Web- Based project management software. This Software is intended to be a web-based application that does not require the Design Builder to purchase. The Design Builder will be given the ability to create additional user logins so that it may give access to those it determines to be necessary at no additional cost. Design Builder's access to the Project Web-Based database will be limited to in accordance with permission levels configured by the District.
- 1.3.2 The District shall provide the Design Builder with Web-Based software training (if required). The anticipated training will take place after the Notice to Proceed has been issued. The District will pay for the training course only for up to twenty (20) Design Builder staff members. Training for Design Builder is expected to be completed in up to two separate half day sessions. Training for additional staff can be arranged directly with Web-Based Software team at additional cost to the Design Builder.
- 1.3.3 The administrator for this project is the District's Representative or authorized designee.
- 1.3.4 The Design Builder shall provide an adequate number of trained users to properly manage the Project in accordance with the Project schedule. The Design Builder shall have Internet access through an Internet service provider of its choice at its cost.
- 1.3.5 Software requirements are as follows:
 - 1.3.5.1 A 32-bit operating system such as Windows XP or above with Service Pack 2 or above
 - 1.3.5.2 Internet Explorer Version 7.0 or above
- 1.3.6 Hardware requirements are as follows:
 - 1.3.6.1 Pentium based (or equivalent) workstation or laptop
 - 1.3.6.2 32 megs of RAM minimum; ideally 128 megs of RAM or above
 - 1.3.6.3 A connection to the Internet (128 kb/s or above)
- 1.3.7 More information on Web-Based Project Management software information will provide later in design phase.

1.4 SYSTEM MANAGEMENT AND USE

- 1.4.1 The District's Representative will administer the Web-Based Project

Management Software user account.

- 1.4.2 All costs associated with using this system, including computer hardware and internet service are the responsibility of the Design Builder.

1.5 USE BY SUBCONTRACTORS

- 1.5.1 The District encourages the Design Builder to utilize Web-Based project management software for communicating with its Subcontractors. The Design Builder shall inform all Subcontractors of the purpose of the project management system and how it can assist them in obtaining information for the project.

1.6 COMMUNICATION PROCESS

- 1.6.1 The District's Representative will outline and detail communication, correspondence and coordination procedures at the initial Project Team meeting.
- 1.6.2 Most Project communication will take place in the Web-Based project management system by creating and distributing documents directly within the system, or by entering manually in the system dates and descriptions of items to track over time. All documents requiring formal signatures will be printed, and their hard copies signed and distributed.
- 1.6.3 The official submittal log will be maintained within Web-Based project management system. The Design Builder will use the Web-Based project management transmittal format for each submittal transmittal; however, the Design Builder will distribute prints, documents, reports, samples, etc. in the traditional manner, outside the system. The Web-Based project management system will be used to track and expedite processing of these items.
- 1.6.4 Design Builder will be required to maintain all current drawings within Web-Based project management system, including but not limited to the Program Verification and Design Development process as well as the development of the Construction Documents. The Design Builder will be able to control administration of the drawings which includes but is not limited to: the ability to create a custom folder structure; folder-level permissions; auto-notifications for certain events (e.g., delete, check out) using Web-Based project management messaging system and the user's email address; auto-detection and uploading of a drawing's reference files; detailed history for a document, including revisions and access logs; check-in and check-out capabilities; view and markup capabilities.
- 1.6.5 Design Builder will be required to utilize modules including but not limited to: daily reports; meeting minutes; punch lists; requests for information (RFI); change items; cost events; and owner change order within the Web-Based project management system. The Design Builder can enter a RFI and the Architect/Engineer respond to the RFI completely within the Web-Based project management system without creating a hard copy. Support documentation in hard copy format for any document in Web-Based system may be scanned into an electronic file and attached in Web-Based system to documents.

1.6.6 Design Builder is required to use a digital camera in order to photo-document job progress and upload the associated images taken on a regular basis to the Web-Based system. Each report required under Section 00 50 00 (Agreement) should be accompanied by progress photograph(s). Cost for digital camera to be borne by Design Builder.

1.7 ARCHIVING

1.7.1 District may, at its cost and expense, obtain backups (on CDs or otherwise) of documents in Web-Based system. In the event of any dispute as to what items are the true and correct project records, items contained on the backups will control.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

- 3.1 Project Management Application is an Internet-Accessed Centralized Database of project information and consists of several separate modules or master file divisions for ease of organization. Available file divisions include but are not limited to: Correspondence, Daily Reports, RFI's, Transmittals, Submittals, Meetings, Documents, Drawings, Specifications, Punch Lists, Reports, Project Photos, Project Team, Schedule of Values, change items, cost events, owner change orders, owner request for proposals, etc.
- 3.2 The District shall provide the Design Builder with access to the Locker Room Renovation Project in Web-Based software described in paragraph 1.3.1 above. Each major team member for the Design Builder (i.e. project manager, superintendent, architect, etc.) must have access to Web-Based software and the required training to access the system. The Design Builder shall insure that all major team members on this project have Internet access available and access to Web-Based system during the duration of this Project.
- 3.3 Major Subcontractors are encouraged to utilize Web-Based project management software for the duration of their scope of work from commencement to completion of their scope of work. Major Subcontractors as a minimum shall be defined as sitework, mechanical, electrical, plumbing, structural, civil, landscape, telecommunications, concrete/masonry, security, storefront/windows, metal panels, drywall, roofing, and others deemed beneficial by the Design Builder.

All other Subcontractors and suppliers shall utilize email or fax for submission of documents to the Design Builder.

END OF SECTION

SECTION 01 32 10
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01140 – “Work Restrictions”
- C. Section 01330 – “Submittal Procedures”
- D. Section 01770 – “Contract Closeout Procedures”
- E. Section 01820 – “Demonstration and Training”
- F. Divisions 2 through 33 sections for Photographic Documentation requirements for the work in these sections.

1.3 SUMMARY

- A. This section specifies administrative and procedural requirements for the following:
 - 1. Preconstruction digital photographs.
 - 2. Preconstruction video
 - 3. ~~Time-lapse construction web cam system.~~
 - 4. Final completion construction digital photographs.

1.4 COSTS OF PHOTOGRAPHY, PRINTING AND ~~WEB-CAM SYSTEM~~

- A. Design Builder shall pay all costs for specified photography, prints, and ~~time-lapse construction web cam system.~~

1.5 SUBMITTALS

- A. Qualification Data: Design Builder shall provide a person with experience for taking digital photographs.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each (photograph.)
- C. Construction Photographs: Submit (15) digital photographs each month, and (25) digital photographs at the end of Project completion.
 - 1. Digital Images: Submit a complete set of digital image electronic files, CD/DVD, (with each submittal of prints as a Project Record Document). Identify electronic media with date photographs were taken. Submit images that have the same aspect ratio as the sensor, un-cropped.
- D. ~~Time-lapse Construction Web Cam Photos and Movie:~~

1. Digital Images: At the completion of the Work, submit digital still images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - a. Date and Time: Include original image file date and time with each image.
 - b. Format: Submit a sortable and identifiable archive of all digital still images on an external hard drive. Obtain District approval of file organization and file names.
2. Time-Lapse "Movie": Compile select digital still images into a time-lapse movie of the construction period for each Phase of the Work. Optimize images included and run-time length of movie to suit District requirements.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPEG format, with minimum sensor size of 10.0 megapixels.
- B. Video Format: Provide digital color video – CD/DVD Format.

2.2 TIME LAPSE CONSTRUCTION WEB CAM SYSTEM

- A. Provide professional-grade high-resolution digital webcam system designed specifically for the construction industry as a turnkey package including 2 cameras, related hardware, mounting equipment, software, wireless cellular data transmission service, website hosting, image hosting, storage, and backup, online interface for the system, time-lapse video creation and technical support.
- B. Design Builder shall be solely responsible for properly maintaining all web cam system components and related services throughout the course of the Work.
- C. The outdoor camera system shall include a tamper and impact resistant, discreet unit with fixed camera, lens and controller. **The cameras will be safely mounted on the roofs of two nearby buildings, coordinate installation with the District. One camera for each Project.**
- D. Cameras shall be integrated high-definition camera and lens assembly consisting of a charge coupled device (CCD) camera with a remotely controlled focal length lens mounted as a permanent module with the following features:
 1. Digital Still Image Resolution: Minimum sensor size of 10 megapixels, and at an image resolution of not less than 3648 x 2736 pixels.
 2. Lens: 78-degree wide field of view.
 3. Settings: Auto-focus, auto-white balance, auto-contrast.
 4. Data Connection: Operate cameras via built-in cellular data connection provided and maintained by the system vendor.
 5. Provide electrical power for web cam system as required by Design Builder's system vendor. A solar option is acceptable.
 6. Quantity of Cameras: 2.
 7. The cameras shall have the ability to take a high-resolution 10-megapixel digital still images of the construction site approximately every 15 minutes, and upload the still images over a wireless cellular modem to the Design Builder's vendor servers.
- E. Remote Access to Digital Images: Provide an online interface system to allow viewing of all high-definition digital still images captured and stored during Construction, from any location with internet access and with password protection.

1. The online interface system shall be accessible by an unlimited number of human users.
 2. System shall display Project name and Owner Logo.
 3. Navigation: Provide calendar-based navigation system for selecting specific images.
 4. Zoom: Provide pan and zoom capability for zooming into high definition images.
 5. User Screen Viewing Options.
- F. Dynamic Calendar: Provide screen showing calendar in which each day displays an image for that day.
- G. Split Screen: Provide screen showing two discrete images side by side, from the two different cameras.
- H. Full Screen: Provide screen maximizing view of images on users monitor.
- I. Slideshow: Provide capability to browse through images, moving forward and backward in time by individual image and by day.
- J. Design Builder shall understand that photographs and archives generated by the camera system become the property of the District and cannot used for advertisement or publicity reasons without the expressed written consent of the District.

PART 3 - EXECUTION

3.1 PHOTOGRAPHS, GENERAL

- A. Date Stamps: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

3.2 TIME LAPSE CONSTRUCTION WEB CAM

- A. Locate cameras at 2 different fixed locations as directed by District in order to capture construction activities over the course of the Work.
- B. Coordinate location and installation of web cameras to avoid interference from trees and to prevent sunlight and light from fixtures entering directly into the camera lens.
- C. After installation, perform system test to ensure all components are functioning properly.
- D. Maintain all system components in good working order. Promptly make any necessary repairs during the course of the Work.
- E. Termination and Removal: Completely remove web cam camera system and mounting pole prior to Final Completion.
1. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with camera system.
 2. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
- F. Camera system, including associated appurtenances and mounting equipment, shall become the property of the District
- G. Maintain images on the Design Builder's vendor website for reference available at all times during the Work, and for not less than 90 days after Final Completion.

3.3 EXISTING CONDITIONS SURVEY VIDEO

- A. Prior to commencement of Work on Site, jointly survey the existing and surrounding areas and structures with the District. Design Builder shall note and recording existing damage such as cracks, sags, and other damage, on Site Plan/Floor Plans as appropriate.
- B. This record shall serve as a basis for determination of subsequent damage to these items due to settlement, movement, demolition, or other Design Builder operations.
- C. Existing damage observed shall be marked and the completed record of existing damage shall be signed by the parties.
- D. Cracks, sags, and damage to the area and other items not noted in the original survey but subsequently observed shall be reported immediately to the District.
- E. Design Builder shall comply with requirements of this Section for photographic and/or video recording of existing conditions.

3.4 PRECONSTRUCTION PHOTOGRAPHS

- A. Before starting construction, take color digital photographs of Project site and surrounding properties from different vantage points, as directed by District.
- B. Take photographs as necessary to show existing conditions adjacent to the building, spaces, and property before starting the work.
- C. Take necessary photographs of existing buildings either on or adjoining the building, spaces, and property to accurately record the physical conditions prior to the start of construction.

3.5 CONSTRUCTION VIDEOS, GENERAL

- A. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of construction for maintenance and operation. Display continuous running time.

END OF SECTION 01 32 10

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

Design Builder and District will jointly develop a list of submittals and shop drawings that are to be submitted to the District. Upon completion of the list, Design Builder will provide District with a preliminary schedule of shop drawings and submittals, which will list each submittal in order by specification section and the times for submitting, reviewing, and processing such submittal.

1.1.1 This section describes general requirements for submittals for the Construction Phase of the Work :

- 1.1.1.1 Procedures
- 1.1.1.2 Schedule of Shop Drawing and Sample Submittals
- 1.1.1.3 Safety Plan
- 1.1.1.4 Progress Schedule
- 1.1.1.5 Product Data
- 1.1.1.6 Shop Drawings
- 1.1.1.7 Samples
- 1.1.1.8 Quality Control Submittals
 - 1.1.1.8.1 Engineering Data
 - 1.1.1.8.2 Test Reports
 - 1.1.1.8.3 Certificates
 - 1.1.1.8.4 Manufacturers' Instructions
- 1.1.1.9 Machine Inventory Sheets
- 1.1.1.10 Operations and Maintenance Manuals
- 1.1.1.11 Computer Programs
- 1.1.1.12 Project Record Documents
- 1.1.1.13 Delay of Submittals

1.1.2 Related Sections

- 1.1.2.1 Section 00 50 00 (Agreement)
- 1.1.2.2 Section 01 11 13 (Work Covered by Contract Documents)
- 1.1.2.3 Section 01 11 20 (Design Services and Deliverables)
- 1.1.2.4 Section 01 31 91 (Project Meetings)
- 1.1.2.5 Section 01 45 00 (Quality Control)
- 1.1.2.6 Section 01 60 00 (Product Requirements)
- 1.1.2.7 Section 01 77 00 (Cleaning and Closeout Procedures)
- 1.1.2.8 Section 01 91 00 (Commissioning Requirements)

1.1.3 For Design Phase Deliverable Requirements, see Section 01 11 20 (Design Services and Deliverables).

1.2 PROCEDURES

- 1.2.1 Submit five (5) sets in addition to required quantities for Design Builder team members, Schedule of Shop Drawing and Sample Submittals, Safety Plans, Progress Schedule, Product Data, Shop Drawings, Samples, Quality Control Data, Machine Inventory Sheets, Operations and Maintenance Manuals, Computer Programs, and Project Record Documents required by the Contract Documents. In lieu of physical copies of paper submittals, the Design Builder may request to submit electronic copies.
- 1.2.2 Transmit each item with a standard letter of transmittal in form approved by District. Address to both District's Representative and Inspector of Record. One copy will be returned to Design Builder only when District action is required, generally where variations to the approved Contract Documents are desired.
- 1.2.3 Identify Design Builder, Subcontractor, subconsultant, major supplier, pertinent drawing sheet and detail number, and specification section number as appropriate. Provide space for District approval.
- 1.2.4 Where manufacturers' standard drawings or data sheets are used, they shall be marked clearly to show those portions of the data which are applicable to this Project.
- 1.2.5 Submit Shop Drawings, Samples, Product Data and other submittals (collectively, "Submittals") to District for review and action in accordance with accepted Schedule of Submittals. Also see Section 01 45 00 (Quality Control). It is the intent that during the construction phase routing of Submittals to the District is informational for purposes of coordination and communication to the District's Representatives and Inspector of Record, except where such submittals represent deviations or substitutions from the approved construction documents then requiring District's review and approval.
- 1.2.6 The data shown on all Submittals shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show District the materials and equipment Design Builder proposes to provide and to enable District to review the information for the limited purposes specified below. Samples shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which it is intended and otherwise as District may require to enable District to review the submittal. The number of each Sample to be submitted will be as specified in the Specifications.
- 1.2.7 At the time of each submission, Design Builder shall give District specific written notice of all variations, if any, that the Submittal may have from the requirements of the approved Contract Documents, and the reasons therefore. This written notice shall be in a written communication separate from the Submittal. In addition, Design Builder shall cause a specific notation to be made on each Submittal submitted to District for review and approval of each such variation.
- 1.2.8 If District accepts such variation, it shall issue an appropriate Contract Modification with return to Design Builder of a reviewed set of the Submittal.

- 1.2.9 Submittal coordination and verification is the responsibility of Design Builder and its Subcontractors. Before submitting each Submittal, Design Builder and its Subcontractors shall have determined and verified:
- 1.2.9.1 All field measurements (where possible), quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 - 1.2.9.2 All materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work; and
 - 1.2.9.3 All information relative to Design Builder's sole responsibilities and of design and means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- 1.2.10 Design Builder shall also have reviewed and coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.
- 1.2.11 Design Builder's submission to District of a Submittal will constitute Design Builder's representation that it has satisfied its obligations under the Contract Documents, and as set forth immediately above, with respect to Design Builder's review and approval of that Submittal.
- 1.2.12 Designation of work "by others", if shown in Submittals prepared by a Subcontractor, subconsultant or supplier, shall mean that work will be the responsibility of the Design Builder or another Subcontractor rather than the Subcontractor, subconsultant or supplier that has prepared submittals.
- 1.2.13 Prior to submitting to District, each of Design Builder's Submittals must be reviewed by the Design Build Architect and/or its Subconsultants and marked with actions defined as follows:
- 1.2.13.1 **NO EXCEPTIONS TAKEN** - Accepted subject to its compatibility with future Submittals and additional partial Submittals for portions of the Work not covered in this Submittal. Does not constitute approval or deletion of specified or required items not shown on the Submittal.
 - 1.2.13.2 **MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED)** - Same as 1. above, except that minor corrections as noted shall be made by Design Builder.
 - 1.2.13.3 **AMEND AND RESUBMIT** - Rejected because of major inconsistencies or errors that must be resolved or corrected by Design Builder prior to subsequent review by District.

- 1.2.13.4 REJECTED - RESUBMIT - Submitted material does not conform to Drawings and Specifications in major respects, e.g., wrong size, model, capacity, or material.
 - 1.2.13.5 NOT REVIEWED - Submitted material has not been reviewed and is being returned to be acted upon by Design Builder without review by District.
 - 1.2.13.6 DISTRICT REVIEW & ACCEPTANCE REQUIRED - Submitted material meets Design Builder's general acceptance but, constitutes a variation from the approved Contract Documents thus requiring District-specific review and acceptance. District's reviewed submittal will be returned to Design Builder with actions as defined in 1 through 5 above.
- 1.2.14 It shall be Design Builder's responsibility to copy, conform and distribute reviewed Submittals in sufficient numbers for Design Builder's files, Subcontractors and vendors.
- 1.2.15 After District's review of a Submittal, revise and resubmit as required. Identify changes made since previous Submittal.
- 1.2.15.1 Begin no fabrication or work that requires Submittals until return of Submittals not requiring re-submittal.
 - 1.2.15.2 Normally, Submittals will be processed and returned to Design Builder within fifteen (15) Business Days of receipt and shall be processed by District so as not to delay Design Builder's performance.
- 1.2.16 Distribute copies of reviewed Submittals to concerned persons. Instruct recipients to promptly report any inability to comply with Submittals.
- 1.3 SCHEDULE OF SHOP DRAWING AND SAMPLE SUBMITTALS
- 1.3.1 Submit preliminary Schedule of Shop Drawing and Sample Submittals as required by Section 00 50 00 (Agreement).
 - 1.3.2 The Schedule of Shop Drawing and Sample Submittals will be used by District to schedule activities relating to review of submittals that may need District approval. District will review any shop drawing or submittal that constitutes substitution of products, systems or other deviation from approved Construction Documents. Schedule of Shop Drawing and Sample Submittals shall indicate a spreading out of Submittals and early Submittals of long lead-time items and of items that require extensive review.
 - 1.3.3 Schedule of Shop Drawing and Sample Submittals shall be reviewed by District and shall be revised and resubmitted until accepted by District.

1.4 SAFETY PLAN

- 1.4.1 Submit five (5) copies of a Safety Plan, compliant with Article 11 of Section 00 50 00 (Agreement), specific to this Contract to District no later than thirty (30) Days after District's approval of completed Construction Documents for either the entire Project or the first accepted phase of work as may be defined by Design Builder.
- 1.4.2 One (1) copy of the accepted Safety Plan will be returned to Design Builder.
- 1.4.3 No on-site work shall commence until the Safety Plan has been reviewed and accepted by District. Acceptance of the Safety Plan shall not affect Design Builder's responsibilities for maintaining a safe working place and instituting safety programs in connection with project. Neither the District nor any of its representatives assume any responsibility for Design Builder's safety related obligations. Design Builder shall have sole responsibility for safety on and off the Site.

1.5 PROGRESS SCHEDULE

- 1.5.1 See Section 00 50 00 (Agreement) for schedule and report requirements.
- 1.5.2 Submit one (1) operating electronic version on compact disk and five (5) print copies of the schedule at each of the following times:
 - 1.5.2.1 Original Project Master Schedule at least five (5) Days prior to the Design Conference or within fourteen (14) Days of Notice to Proceed, whichever is earliest.
 - 1.5.2.2 Detailed Design Schedule at least five (5) Days prior to the Design Conference or within fourteen (14) Days of Notice to Proceed, whichever is earliest.
 - 1.5.2.3 Detailed Construction Schedule a minimum of ten (10) Days prior to the Pre-Construction Conference outlined in Section 01 31 00 (Project Meetings) or within forty (40) Days prior to start of construction, whichever is earliest.
 - 1.5.2.4 Construction Progress Schedule updates monthly, submitted with each Pay Application.
- 1.5.3 Submit copies of the reports as required by Section 00 50 00 (Agreement).

1.6 PRODUCT DATA

- 1.6.1 Within sixty (60) Days after District's approval of completed Construction Documents for the Project submit five (5) hard copies and one (1) electronic copy of the complete list of major products proposed for use, with name of the manufacturer, trade name, and model number for each product.

- 1.6.2 For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- 1.6.3 Tabulate products by specification section number.
- 1.6.4 Supplemental Data:
 - 1.6.4.1 Submit number of copies that Design Builder requires, plus five (5) hardcopies and one (1) electronic copy that will be retained by District.
 - 1.6.4.2 Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to the Project.
- 1.6.5 Provide copies for Project Record Documents described in Section 01 77 00 (Cleaning and Closeout Procedures).

1.7 SHOP DRAWINGS

- 1.7.1 Submit electronically or in hardcopy format as approved by District. Minimum Sheet Size: 8-1/2 inches by 11 inches. All others: Multiples of 8-1/2 inches by 11 inches, 34 inches by 44 inches maximum.
- 1.7.2 For Shop Drawings submitted in hardcopy format, submit the number of copies which Design Builder requires, plus five (5) copies which will be retained by District.
- 1.7.3 For Shop Drawings submitted in hardcopy format, the original sheet will be marked with District's review comments and returned to Design Builder when required as outlined in paragraph 1.2 above.
- 1.7.4 Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work.
- 1.7.5 Include manufacturers' installation instructions when required by Specification section.

1.8 SAMPLES

- 1.8.1 Submit full range of manufacturers' standard colors, textures, and patterns when District's selection is required as outlined in paragraph 1.2 above.
- 1.8.2 Submit samples to illustrate functional and aesthetic characteristics of each product, with integral parts and attachment devices. Coordinate Submittal of different categories for interfacing work.
- 1.8.3 Include identification on each sample, giving full information.
- 1.8.4 Submit five (5) samples unless otherwise specified.

1.8.5 Sizes: Unless otherwise specified, provide the following:

- 1.8.5.1 Paint Chips: Manufacturers' standard
- 1.8.5.2 Flat or Sheet Products: Minimum 6 inches square, maximum 12 inches square
- 1.8.5.3 Linear Products: Minimum 6 inches, maximum 12 inches long
- 1.8.5.4 Bulk Products: Minimum 1 pint, maximum 1 gallon

1.8.6 Full size samples may be used in the Work upon approval.

1.9 QUALITY CONTROL SUBMITTALS

1.9.1 Design Data: Submit electronically or in hardcopy format as approved by District. When submitted in hardcopy format, submit five (5) copies. One (1) copy shall be marked with District's review comments and returned to Design Builder when required as outlined in paragraph 1.2 above.

- 1.9.1.1 Indicate that the design data conforms to or exceeds the requirements of the Contract Documents.
- 1.9.1.2 Submit supporting reference data, affidavits, and certifications as appropriate.
- 1.9.1.3 Identify conflicts with test reports, certificates, manufacturer's instructions or specific aspect(s) of the Contract Documents.

1.9.2 Test Reports: Submit electronically or in hardcopy format as approved by District. When submitted in hardcopy format, submit five (5) copies. One (1) copy will be marked with District's review comments and returned to Design Builder when required as outlined in paragraph 1.2 above.

- 1.9.2.1 Indicate that the material or product conforms to or exceeds specified requirements.
- 1.9.2.2 Reports may be from recent or previous tests on material or product, but must be acceptable to District. Comply with requirements of each individual Specification.

1.9.3 Certificates: Submit electronically or in hardcopy format as approved by District. When submitted in hardcopy format, submit five (5) copies. One (1) copy will be marked with District's review comments and returned to Design Builder when required as outlined in paragraph 1.2 above.

- 1.9.3.1 Indicate that the material or product conforms to or exceeds specified requirements.
- 1.9.3.2 Submit supporting reference data, affidavits, and certifications as appropriate.

1.9.3.3 Certificates may be recent or from previous test results on material or product, but must be acceptable to District.

1.9.4 Manufacturers' Instructions: Submit electronically or in hardcopy format as approved by District. When submitted in hardcopy format, submit five (5) copies. One (1) copy will be marked with District's review comments and returned to Design Builder when required as outlined in paragraph 1.2 above.

1.9.4.1 Include manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.

1.9.4.2 Identify conflicts between manufacturers' instructions and Contract Documents.

1.10 MACHINE INVENTORY SHEETS

1.10.1 Not applicable.

1.11 OPERATIONS AND MAINTENANCE MANUALS

1.11.1 Refer to Section 01 77 00 (Cleaning and Closeout Procedures) for Operation and Maintenance Manual submittal requirements.

1.12 COMPUTER PROGRAMS

1.12.1 When any equipment requires operation by computer program(s), submit a copy of the program on appropriate compact disc plus all user manuals and guides for operating the programs and making changes in the programs for upgrading and expanding the databases. Programs must be Windows XP compatible, or newer, or in a form otherwise acceptable to District. Provide required licenses to District at no additional cost.

1.13 PROJECT RECORD DOCUMENTS

1.13.1 Submit one (1) copy of each of the Project Record Documents listed in Section 01 77 00 (Cleaning and Closeout Procedures).

1.14 DELAY OF SUBMITTALS

1.14.1 Delay of Submittals by Design Builder is considered avoidable delay and Design Builder will not be entitled to an adjustment of the Contract Time due to delays attributed to late Submittals. Liquidated damages incurred because of late Submittals will be assessed to Design Builder.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 34 00
ADMINISTRATIVE FORMS & LOGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01290 – “Payment Procedures”
- B. Section 01310 – “Construction Scheduling”
- C. Section 01311 – “Project Management and Coordination”
- D. Section 01330 – “Submittal Procedures”
- E. Section 01625 – “Product Options and Substitutions”
- F. Section 01780 – “Project Record Documents”
- G. Divisions 2 through 33 Sections for Administrative Forms & Logs requirements for the Work in those Sections.

1.3 SUMMARY

- A. This section specifies the information and format requirements for administrative forms and logs.

1.4 ADMINISTRATIVE FORMS & LOGS

- A. Administrative forms and logs include, but are not limited to, the following:
 - 1. Substitution Request Form.
 - 2. Change Order Form.
 - 3. Proposed Change Order Form.
 - 4. Design Builder's Proposal for Contract Modification Form* (includes sample numbers to demonstrate calculations only).
 - 5. Payapp Form.
- B. Forms generated by project management software may be substituted if substitution forms contain essentially the same information as shown in these Contract Documents. Allowance for the use of substitute forms is at the sole discretion of the District, and shall be requested and approved before use of the substitute form. Forms marked with an asterisk (*) may NOT be substituted under any condition.
- C. Microsoft Excel files of these forms are available for Design Builder use from the District.

1.5 FORMS INCORPORATED BY REFERENCE

- A. Forms available from the California Department of General Services, Division of the State Architect (DSA), <http://www.dgs.ca.gov/dsa/Forms.aspx>, related to administration, con

struction, testing, and inspection of public works school facilities are hereby incorporated by reference into these Contract Documents.

1.6 DESIGN BUILDER RESPONSIBILITIES

- A. Nothing in this Section 01340 including, but not limited to the above forms and log forms, shall be construed to limit, relieve, or release Design Builder from liability to District for any damages sustained as a result of inaccurate or incorrect information supplied by the Design Builder.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.



CONTRA COSTA COMMUNITY COLLEGE DISTRICT

500 Court Street, Martinez, CA 94553

SUBSTITUTION REQUEST FORM

Contractor Name: _____
Contract #: _____

RFS # _____ Date: _____
DSA Application #: _____
Campus: _____
Project No., Name: _____

Contractor pursuant to General Conditions submits the proposed items. If the District accepts such items so described, the undersigned may furnish such item with all necessary labor, materials, equipment and incidentals to perform and complete the Work.

Table with 4 columns: Item No., SPECIFIED ITEM OR DRAWING, SPECIFICATION SECTION, PROPOSED SUBSTITUTION (and name of Subcontractor if different)

CERTIFICATION

Under penalty of perjury under the Laws of California, I certify that the proposed substitution will be readily available, perform adequately the functions and achieve the results called for by the design concept, be similar in substance to that specified, and be suited to the same use as that specified in Contract Documents.

Contractor: _____
(Please print name of company) Name and Title (print/type) Contractor Authorized Representative Date

A. Does the substitution affect dimensions shown on Drawings?
B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?
C. What effect does the substitution have on other trades?
D. Will substitution cause change to Project Schedule, or to critical delivery dates? Add ? Shorten ?
E. Differences between proposed substitution and specified item?
F. What is the Cost Differential including all mark-ups?
G. Are Manufacturer's guarantees for the proposed item the same as for item specified? Explain differences.
H. The undersigned accepts full responsibility for delays caused by redesign of other items of the Work necessitated by substitution.
I. The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

A/E Response: District Representative Response:
Accepted, Not Accepted, Accepted As Noted, Received Too Late
BY: _____ Date: _____



CONTRA COSTA COMMUNITY COLLEGE DISTRICT

500 Court Street, Martinez, CA 94553

CHANGE ORDER No.: _____

Contractor Name: _____ Contract #: _____ Contract Date: _____ NTP Date: _____ GL #: _____	Date: _____ DSA File #: <u>7-C1</u> DSA Application #: _____ Campus: _____ Project No., Name: _____
-------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------

THE CONTRACT IS CHANGED AS FOLLOWS: (Attach Contractor Change Order Request or Proposal - if applicable)

ADJUSTMENT TO CONTRACT AMOUNT / TIME	
Original Contract Amount	\$0.00
Prior Contract Adjustments	\$0.00
Contract Sum Prior to this Change Order	\$0.00
Adjustment Per This Change Order	\$0.00
Revised Contract Amount	\$0.00
Original Contract Period: Start Date: _____ End Date: _____	
The Contract Time will be Increased; Decreased; By _____ Calendar Days	
Revised Contract Completion Date: _____	

NOTE: The Contractor waives any claim for further adjustments of the Contract Sum and Contract Time related to the above changes in Work.

1 - REVIEWED & RECOMMENDED (Architect/Engineer of Record) Stamp (when applicable) _____ Signature/Date _____	5 - CONTRACTOR ACCEPTANCE Company Name: _____ Address: _____ Authorized Representative, Name & Title (PRINT) _____ Signature / Date _____
2 - CONSTRUCTION MANAGER (CM) - (when applicable) Signature / Date _____	6 - DISTRICT AUTHORIZED REPRESENTATIVE C.O. NOT VALID WITHOUT Signature / Date _____
PROJECT INSPECTOR (PI) - (when applicable) Signature / Date _____	4 - PROJECT MANAGER (PM) Signature / Date _____
	DSA APPROVAL (when applicable)



CONTRA COSTA COMMUNITY COLLEGE DISTRICT

500 Court Street, Martinez, CA 94553

PROPOSED CHANGE ORDER

PCO No.: _____

Contractor Name:	_____
Contract #:	_____
Contract Date:	_____
NTP Date:	_____
GL #:	_____

Date: _____

DSA File #: 7-C1

DSA Application #: _____

Campus: _____

Project No., Name: _____

PRELIMINARY CHANGE AS FOLLOWS:

Within (7) days provide and submit to the Project Manager a complete and itemized proposal including but not limited to the following items: cost breakdown of Labor, Material, Equipment, Markup, Construction Schedule, etc. Provide either ADD or DEDUCT to the original Contract Amount.

Scope of Work:	Ref. (Drawings, Specifications, Others):

Final Cost of this PCO \$0.00

The Contractor requests that time will be Increased; Decreased; By Working Days

NOTE: The Contractor waives any claim for further adjustments of the Contract Sum and Contract Time related to the changes in Work as described above .

<p>1 - REVIEWED & RECOMMENDED <i>(Architect/Engineer of Record)</i></p> <p>Stamp (when applicable) Signature/Date</p>	<p>5 - CONTRACTOR ACCEPTANCE</p> <p>Company Name: _____</p> <p>Address: _____</p> <p>Authorized Representative, Name & Title (PRINT) _____</p> <p>Signature / Date _____</p>
<p>2 - CONSTRUCTION MANAGER (CM) - (when applicable)</p> <p>Signature / Date _____</p>	<p>6 - DISTRICT REPRESENTATIVE</p> <p>Signature / Date _____</p>
<p>3 - PROJECT INSPECTOR (PI) - (when applicable)</p> <p>Signature / Date _____</p>	<p>DSA APPROVAL (when applicable)</p>
<p>4 - PROJECT MANAGER (PM)</p> <p>Signature / Date _____</p>	

CONTRACTOR'S PROPOSAL FOR CONTRACT MODIFICATION

DATE: _____

(05/11)

Project No. and Name:		CONTRACT NO.:	
Prime Contractor:			
SHORT DESCRIPTION OF CHANGE:		Description attached	
PRIME CONTRACTOR'S WORK			
1. Direct Materials			\$0.00
2. Sales Tax on Materials	9.25 % of Line 1	9.25%	\$0.00
3. Direct Labor			\$0.00
4. Insurance, Taxes, and Fringe Benefits	19.19 % of Line 3	19.19%	\$0.00
5. SUBTOTAL Materials and Labor (Add lines 1-4)			\$0.00
6. Rental Equipment			\$0.00
7. Sales Tax on Rental Equipment	9.25 % of Line 5	9.25%	\$0.00
8. Equipment Ownership and Operating Expenses			\$0.00
9. SUBTOTAL Equipment (Add Lines 6-8)			\$0.00
SUMMARY			
10. Prime Contractor's Work (Add Lines 5 and 8)			\$0.00
11. Overhead and Profit On Prime Material and Labor	15.00 % of Line 9	15.00%	\$0.00
12. Overhead and Profit On Prime Equipment	10.00 % of Line 9	10.00%	\$0.00
13. Total of Subcontractor's Work (See Backup)			\$0.00
14. Prime's Overhead on all Subcontractor's Work	0.00 % of Line 10	0.00%	\$0.00
15. SUBTOTAL (Add Lines 10-14)			\$0.00
16. Prime Contractor's Bond Premium	1% % of Line 16	1.00%	\$0.00
17. TOTAL COST (Add Lines 15-16)			\$0.00
Estimated time extension and justification (attach schedule analysis):		Work Days	
Prime Contractor's Comments:			
Signature and Title of Preparer:		Date:	
<p>(1) Material (attach itemized quantity and unit cost plus sales tax)</p> <p>(3) Labor (attach itemized hours and rates)</p> <p>(4) Liability and Property Damage Insurance, Worker's, Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed as follows: FICA @ 6.2%- with a wage ceiling of \$84,900; Medicare @ 1.45%- no wage ceiling; FUTA @ .8%- with a wage ceiling of \$7,000; ETT and SUI @ 2.3%- with a wage ceiling of \$7,000; Workers' Compensation @ 3.94%; Liability and Property Damage @ 2.5%. Total not-to-exceed is 19.19%. (Note: Modifications to these percentages will be evaluated and possibly modified only on a case-by-case basis and only after proper proof of alternate percentages are documented and approved in advance. In addition, as wage ceilings are met, those corresponding percentages must drop from the "burden" calculations).</p> <p>(6, 8) Equipment (attach invoices)</p> <p>(13) If Subcontractor performed Work, use Subcontractor's sheets to calculate costs.</p> <p>(14) Prime Contractor's Overhead and Profit on Subcontractor work. No more than five percent (5%) of Item (13). Subcontractor overhead and profit (all tiers cumulative) not to exceed fifteen percent (15%) of the lowest tier Subcontractor Total Cost.</p> <p>(15) Bond not to exceed two percent (2%) of Item (16). Use actual percentage from Performance/Payment bonds submitted at contract award.</p>			

INSTRUCTIONS FOR PREPARING CONTRACTOR PROPOSAL FOR CONTRACT MODIFICATION

All contract modification proposals shall be addressed to the District and be received only from the Prime Contractor. Proposals must clearly state the conditions and scope of the modification and shall be accompanied by a breakdown of costs, as indicated. Lump sum costs will not be accepted in either the prime or sub-contractor's breakdown of direct cost. The total cost for labor, material, and equipment for each item shall be transferred to the corresponding item on the front of this form.

PRIME CONTRACTOR

B BREAKDOWN OF DIRECT COSTS

PCO # : _____

Item No.	Items of Work Description	Qty	Unit	Material		Labor		BarO	Days	Rate	Equipment	
				Unit Cost	Total Cost	Unit Cost	Total Cost				Rental Cost	Owned Cost
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35	Continuation Page (Yes / No)											
DIRECT Prime Contractor's Totals				Total \$	-	Total \$	-	Total \$	-	Total \$	Rental Cost	Owned Cost

CONTRACTOR'S PROPOSAL FOR CONTRACT MODIFICATION
(05/11)

DATE: _____

Project No. and Name:		CONTRACT NO.:	
Tier 1 Subcontractor:			
SHORT DESCRIPTION OF CHANGE:		Description attached	
TIER 1 SUBCONTRACTOR'S WORK			
1. Direct Materials		\$ -	
2. Sales Tax on Materials	9.25 % of Line 1	9.25%	\$0.00
3. Direct Labor		\$ -	
4. Insurance, Taxes, and Fringe Benefits	19.19 % of Line 3	19.19%	\$0.00
5. SUBTOTAL Materials and Labor (Add lines 1-4)			\$0.00
6. Rental Equipment		\$ -	
7. Sales Tax on Rental Equipment	9.25 % of Line 5	9.25%	\$0.00
8. Equipment Ownership and Operating Expenses		\$ -	
9. SUBTOTAL Equipment (Add Lines 6-8)			\$0.00
SUMMARY			
10. TIER 1 Contractor's Work (Add Lines 5 and 8)			\$0.00
11. Overhead and Profit On TIER 1 Material and Labor	15.00 % of Line 9	15.00%	\$0.00
12. Overhead and Profit On TIER 1 Equipment	10.00 % of Line 9	10.00%	\$0.00
13. Total of all Subcontractor's Work (See Backup)			\$0.00
14. Tier 1 Overhead on Subcontractor's Work	0.00 % of Line 10	0.00%	\$0.00
15. SUBTOTAL (Add Lines 10-14)			\$0.00
16. TIER 1 Contractor's Bond Premium	1% % of Line 16	1.00%	\$0.00
17. TOTAL COST (Add Lines 15-16)			\$0.00
Estimated time extension and justification:		Work Days	
Subcontractor's Comments:			
Prime Contractor's Name:			
Signature and Title of Preparer:			Date:
<p>(1) Material (attach itemized quantity and unit cost plus sales tax)</p> <p>(3) Labor (attach itemized hours and rates)</p> <p>(4) Liability and Property Damage Insurance, Worker's, Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed as follows: FICA @ 6.2%- with a wage ceiling of \$84,900; Medicare @ 1.45%- no wage ceiling; FUTA @ .8%- with a wage ceiling of \$7,000; ETT and SUI @ 2.3%- with a wage ceiling of \$7,000; Workers' Compensation @ 3.94%; Liability and Property Damage @ 2.5%. Total not-to-exceed is 19.19%. (Note: Modifications to these percentages will be evaluated and possibly modified only on a case-by-case basis and only after proper proof of alternate percentages are documented and approved in advance. In addition, as wage ceilings are met, those corresponding percentages must drop from the "burden" calculations).</p> <p>(6, 8) Equipment (attach invoices)</p> <p>(13) If lower tier Subcontractor performed Work, use Subcontractor's sheets to calculate costs.</p> <p>(14) Subcontractor's Overhead and Profit on lower tier Subcontractor work. No more than five percent (5%) of Item (13). Subcontractor overhead and profit (all tiers cumulative) not to exceed fifteen percent (15%) of the lowest tier Subcontractor Total Cost.</p> <p>(15) Bond not to exceed two percent (2%) of Item (16). Use actual percentage from Performance/Payment bonds submitted at contract award.</p>			

INSTRUCTIONS FOR PREPARING CONTRACTOR PROPOSAL FOR CONTRACT MODIFICATION

All contract modification proposals shall be addressed to the District and be received only from the Prime Contractor. Proposals must clearly state the conditions and scope of the modification and shall be accompanied by a breakdown of costs, as indicated. Lump sum costs will not be accepted in either the prime or sub-contractor's breakdown of direct cost. The total cost for labor, material, and equipment for each item shall be transferred to the corresponding item on the front of this form.

TIER 1 SUBCONTRACTOR

B BREAKDOWN OF DIRECT COSTS

PCO # : _____

Item No.	Items of Work Description	Qty	Unit	Material		Labor		BarO	Days	Rate	Equipment	
				Unit Cost	Total Cost	Unit Cost	Total Cost				Rental Cost	Owned Cost
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35	Continuation Page (Yes / No)											
DIRECT Tier 1 Subcontractor's Totals												
				Total \$		Total \$		Total \$		Total \$	Rental Cost	Owned Cost

CONTRACTOR'S PROPOSAL FOR CONTRACT MODIFICATION

DATE: _____

(05/11)

Project No. and Name:		CONTRACT NO.:	
Tier 2 Subcontractor:			
SHORT DESCRIPTION OF CHANGE:		Description attached	
TIER 2 SUBCONTRACTOR'S WORK			
1. Direct Materials		\$ -	
2. Sales Tax on Materials	9.25 % of Line 1	9.25%	\$0.00
3. Direct Labor		\$ -	
4. Insurance, Taxes, and Fringe Benefits	19.19 % of Line 3	19.19%	\$0.00
5. SUBTOTAL Materials and Labor (Add lines 1-4)			\$0.00
6. Rental Equipment		\$ -	
7. Sales Tax on Rental Equipment	9.25 % of Line 5	9.25%	\$0.00
8. Equipment Ownership and Operating Expenses		\$ -	
9. SUBTOTAL Equipment (Add Lines 6-8)			\$0.00
SUMMARY			
10. TIER 2 Contractor's Work (Add Lines 5 and 8)			\$0.00
11. Overhead and Profit On TIER 2 Material and Labor	15.00 % of Line 9	15.00%	\$0.00
12. Overhead and Profit On TIER 2 Equipment	10.00 % of Line 9	10.00%	\$0.00
13. Total of all Subcontractor's Work (See Backup)			\$0.00
14. Tier 2 Overhead on Subcontractor's Work	0.00 % of Line 10	0.00%	\$0.00
15. SUBTOTAL (Add Lines 10-14)			\$0.00
16. TIER 2 Contractor's Bond Premium	1% % of Line 16	1.00%	\$0.00
17. TOTAL COST (Add Lines 15-16)			\$0.00
Estimated time extension and justification:		Work Days	
Tier 2 Subcontractor's Comments:			
Tier 1 Subcontractor's Name:			
Signature and Title of Preparer:			Date:
<p>(1) Material (attach itemized quantity and unit cost plus sales tax)</p> <p>(3) Labor (attach itemized hours and rates)</p> <p>(4) Liability and Property Damage Insurance, Worker's Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed as follows: FICA @ 6.2%- with a wage ceiling of \$84,900; Medicare @ 1.45%- no wage ceiling; FUTA @ .8%- with a wage ceiling of \$7,000; ETT and SUI @ 2.3%- with a wage ceiling of \$7,000; Workers' Compensation @ 3.94%; Liability and Property Damage @ 2.5%. Total not-to-exceed is 19.19%. (Note: Modifications to these percentages will be evaluated and possibly modified only on a case-by-case basis and only after proper proof of alternate percentages are documented and approved in advance. In addition, as wage ceilings are met, those corresponding percentages must drop from the "burden" calculations).</p> <p>(6, 8) Equipment (attach invoices)</p> <p>(13) If lower tier Subcontractor performed Work, use Subcontractor's sheets to calculate costs.</p> <p>(14) Subcontractor's Overhead and Profit on lower tier Subcontractor work. No more than five percent (5%) of Item (13). Subcontractor overhead and profit (all tiers cumulative) not to exceed fifteen percent (15%) of the lowest tier Subcontractor Total Cost.</p> <p>(15) Bond not to exceed two percent (2%) of Item (16). Use actual percentage from Performance/Payment bonds submitted at contract award.</p>			

INSTRUCTIONS FOR PREPARING CONTRACTOR PROPOSAL FOR CONTRACT MODIFICATION

All contract modification proposals shall be addressed to the District and be received only from the Prime Contractor. Proposals must clearly state the conditions and scope of the modification and shall be accompanied by a breakdown of costs, as indicated. Lump sum costs will not be accepted in either the prime or sub-contractor's breakdown of direct cost. The total cost for labor, material, and equipment for each item shall be transferred to the corresponding item on the front of this form.

TIER 2 SUBCONTRACTOR

PCO # : _____

B BREAKDOWN OF DIRECT COSTS

Item No.	Items of Work Description	Qty	Unit	Material		Labor		BarO	Days	Rate	Equipment	
				Unit Cost	Total Cost	Unit Cost	Total Cost				Rental Cost	Owned Cost
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35	Continuation Page (Yes / No)											
DIRECT Tier 2 Subcontractor's Totals												
				Total \$		Total \$		Total \$		Total \$	Rental Cost	Owned Cost

CONTRACTOR'S PROPOSAL FOR CONTRACT MODIFICATION

DATE: _____

(05/11)

Project No. and Name:		CONTRACT NO.:	
Tier 3 Subcontractor:			
SHORT DESCRIPTION OF CHANGE:		Description attached	
TIER 3 SUBCONTRACTOR'S WORK			
1. Direct Materials		\$ -	
2. Sales Tax on Materials	9.25 % of Line 1	9.25%	\$0.00
3. Direct Labor		\$ -	
4. Insurance, Taxes, and Fringe Benefits	19.19 % of Line 3	19.19%	\$0.00
5. SUBTOTAL Materials and Labor (Add lines 1-4)			\$0.00
6. Rental Equipment		\$ -	
7. Sales Tax on Rental Equipment	9.25 % of Line 5	9.25%	\$0.00
8. Equipment Ownership and Operating Expenses		\$ -	
9. SUBTOTAL Equipment (Add Lines 6-8)			\$0.00
SUMMARY			
10. TIER 3 Contractor's Work (Add Lines 5 and 8)			\$0.00
11. Overhead and Profit On TIER 3 Material and Labor	15.00 % of Line 9	15.00%	\$0.00
12. Overhead and Profit On TIER 3 Equipment	10.00 % of Line 9	10.00%	\$0.00
13. Total of all Subcontractor's Work (See Backup)			
14. Tier 3 Overhead on Subcontractor's Work	0.00 % of Line 10	0.00%	\$0.00
15. SUBTOTAL (Add Lines 10-14)			\$0.00
16. TIER 3 Contractor's Bond Premium	1% % of Line 16	1.00%	\$0.00
17. TOTAL COST (Add Lines 15-16)			\$0.00
Estimated time extension and justification:		Work Days	
Tier 3 Subcontractor's Comments:			
Tier 2 Subcontractor's Name:			
Signature and Title of Preparer:		Date:	
<p>(1) Material (attach itemized quantity and unit cost plus sales tax)</p> <p>(3) Labor (attach itemized hours and rates)</p> <p>(4) Liability and Property Damage Insurance, Worker's, Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed as follows: FICA @ 6.2%- with a wage ceiling of \$84,900; Medicare @ 1.45%- no wage ceiling; FUTA @ .8%- with a wage ceiling of \$7,000; ETT and SUI @ 2.3%- with a wage ceiling of \$7,000; Workers' Compensation @ 3.94%; Liability and Property Damage @ 2.5%. Total not-to-exceed is 19.19%. (Note: Modifications to these percentages will be evaluated and possibly modified only on a case-by-case basis and only after proper proof of alternate percentages are documented and approved in advance. In addition, as wage ceilings are met, those corresponding percentages must drop from the "burden" calculations).</p> <p>(6, 8) Equipment (attach invoices)</p> <p>(13) If lower tier Subcontractor performed Work, use Subcontractor's sheets to calculate costs.</p> <p>(14) Subcontractor's Overhead and Profit on lower tier Subcontractor work. No more than five percent (5%) of Item (13). Subcontractor overhead and profit (all tiers cumulative) not to exceed fifteen percent (15%) of the lowest tier Subcontractor Total Cost.</p> <p>(15) Bond not to exceed two percent (2%) of Item (16). Use actual percentage from Performance/Payment bonds submitted at contract award.</p>			

INSTRUCTIONS FOR PREPARING CONTRACTOR PROPOSAL FOR CONTRACT MODIFICATION

All contract modification proposals shall be addressed to the District and be received only from the Prime Contractor. Proposals must clearly state the conditions and scope of the modification and shall be accompanied by a breakdown of costs, as indicated. Lump sum costs will not be accepted in either the prime or sub-contractor's breakdown of direct cost. The total cost for labor, material, and equipment for each item shall be transferred to the corresponding item on the front of this form.

TIER 3 SUBCONTRACTOR

PCO # : _____

B BREAKDOWN OF DIRECT COSTS

Item No.	Items of Work Description	Qty	Unit	Material		Labor		BarO	Days	Rate	Equipment	
				Unit Cost	Total Cost	Unit Cost	Total Cost				Rental Cost	Owned Cost
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35	Continuation Page (Yes / No)											
DIRECT Tier 3 Subcontractor's Totals												
				Total \$		Total \$		Total \$		Total \$	Rental Cost	Owned Cost

APPLICATION AND CERTIFICATION FOR PAYMENT			PAGE 1 OF XX	PAGES
TO OWNER:		PROJECT:	APPLICATION NO:	1
CCCCD		Number, Name	APPLICATION DATE:	Date
500 Court St.		Contra Costa College	PERIOD TO:	Date
Martinez, CA 94553		2600 Mission Bell Dr, San Pablo, CA 94806	ARCHITECT:	xxx
FROM CONTRACTOR:		VIA CONSTRUCTION MANAGER:	CONTRACT NO:	XXX
Name		CM Site Trailer	CONTRACT DATE:	XXX
Address		Contra Costa College		
Address		2600 Mission Bell Dr, San Pablo, CA 94806		
CONTRACTOR'S APPLICATION FOR PAYMENT			CERTIFICATE FOR PAYMENT	
Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet (Attachment A) is attached.			The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.	
1. ORIGINAL CONTRACT SUM	\$		CONTRACTOR:	
2. Net change by Change Orders	\$	0.00	By: _____ Date: _____	
3. CONTRACT SUM TO DATE (Line 1 ± 2)	\$	0.00		
4. TOTAL COMPLETED & STORED TO DATE (Column G on Attach. A)	\$	0.00		
5. RETAINAGE:				
a. % of Completed Work	\$	\$0.00		
(Column D + E on on Attach. A)				
b. % of Stored Material	\$	Included in above		
(Column F on on Attach. A)				
Total Retainage (Lines 5a + 5b or Total in Column I of Attach. A)	\$	0.00		
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)	\$	0.00		
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	\$			
8. CURRENT PAYMENT DUE	\$	0.00	AMOUNT CERTIFIED \$	
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	\$	0.00	ARCHITECT:	
			By: _____ Date: _____	
			CONSTRUCTION MANAGER	
			By: _____ Date: _____	
			INSPECTOR OF RECORD:	
			By: _____ Date: _____	
			PROJECT MANAGER:	
			By: _____ Date: _____	
CHANGE ORDER SUMMARY			This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.	
	ADDITIONS	DEDUCTIONS		
Total changes approved in previous months by Owner				
Total approved this Month				
TOTALS	\$0.00	\$0.00		
NET CHANGES by Change Order	\$0.00			

CALGREEN ENVIRONMENTAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

1.1.1. Section includes: Comply with CALGreen environmental requirements related to energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality.

1.1.1.1. Nonresidential Projects: Comply with specific CALGreen requirements for nonresidential projects.

1.2 ENVIRONMENTAL REQUIREMENTS

1.2.1 Mandatory Measures: Comply with CALGreen Mandatory Measures applicable to Project.

1.2.1.1 Design team and construction team are each required to participate to maximum degree possible to achieve CALGreen environmental requirements.

1.2.1.2 Project Criteria Documents are not intended to limit alternative means of achieving environmental requirements.

1.2.1.2.1. Suggestions from Design/Build Contractor, subcontractors, suppliers, and manufacturers for achieving environmental requirements are encouraged; team approach is also encouraged.

1.2.1.3. Voluntary Tiers: Construction team is encouraged to achieve enhanced Voluntary Tier levels by incorporating additional measures as defined in CALGreen Appendixes.

1.2.1.3.1 Design/Build team is required to achieve Mandatory Measures and to achieve as much as possible without unacceptable cost impact or schedule impact on Project.

1.2.2 Requirements: Design/Build team is required to review CALGreen requirements relative to Nonresidential Projects.

1.2.2.1. Energy Efficiency: Comply with California Energy Commission requirements.

1.2.2.2. Water Efficiency and Conservation: Comply with requirements for both indoor and outdoor water use.

1.2.3 Material Conservation and Resource Efficiency:

1.2.3.1. Nonresidential Projects: Provide weather-resistant exterior wall and foundation envelope including prevention of landscape irrigation spray on structures (if any), and prevent water intrusion at exterior entries.

1.2.3.2. Construction Waste: Provide construction waste management plan as defined by CALGreen with at least 50% of construction waste diverted from landfill by recycling or salvage for reuse.

1.2.3.3. Nonresidential Project Building Maintenance and Operation: Provide for commissioning requirements as required by CALGreen including but not limited to testing, documentation and training, testing and adjusting.

1.2.4 Nonresidential Projects Environmental Quality:

1.2.4.1. Mechanical Equipment Pollution Control: Cover duct and related air distribution component openings to prevent dust and debris accumulation.

1.2.4.2. Finish Material Pollution Control: Comply with CALGreen requirements for volatile organic compound (VOC) emissions including but not necessarily limited to following (as applicable):

- (1) Adhesives, sealants and caulks.
- (2) Paints and coatings.
- (3) Carpet systems including carpet, carpet cushion, and adhesives.
- (4) Resilient flooring systems.
- (5) Composite wood products formaldehyde limitations.

1.2.4.3. Filters: Comply with requirements for mechanically ventilated buildings to have air filtration media for outside and return air prior to occupancy.

1.2.4.4. Environmental Tobacco Smoke (ETS) Control: Comply with CALGreen requirements for ETS.

1.2.4.5. Interior Moisture Control: Comply with California Building Code requirements and CALGreen requirements for vapor retarder at concrete slab foundations and capillary break (aggregate base).

1.2.4.6. Building Material Moisture Content: Do not use water damage building materials, remove and place wet and high moisture content insulation, and do not enclose wall or floor framing when moisture content exceeds 19%.

1.2.4.7. Indoor Air Quality: Comply with CALGreen requirements for outside air delivery and carbon dioxide monitoring.

1.2.4.8. Environmental Comfort: Comply with CALGreen requirements for whole acoustical control and interior sound control.

1.2.4.9. Outdoor Air Quality: Comply with CALGreen requirements for reduction of greenhouse gases and ozone depletion.

1.2.5 Planning and Design: Construction team shall coordinate with Design Team regarding Project Planning and Design methods related to CALGreen requirements related to Project design and shall comply with requirements related to construction.

1.3 QUALITY ASSURANCE

1.3.1 Project Management and Coordination: Contractor to identify one person on Contractor's staff to be responsible for CALGreen issues compliance and coordination.

1.3.1.1. Experience: Environmental project manager to have experience relating to CALGreen building construction.

1.3.1.2. Responsibilities: Carefully review Contract Documents for CALGreen issues, coordinate work of trades, subcontractors, and suppliers; instruct workers relating to environmental issues; and oversee Project Environmental Goals.

1.3.1.3. Meetings: Discuss CALGreen Goals at the following meetings.

(1) Pre-construction meeting.

(2) Pre-installation meetings.

(3) Regularly scheduled job-site meetings.

1.3.2 CALGreen Issues Criteria: Comply with requirements listed in CALGreen and various Specification sections. .

PART 2 - PRODUCTS

2.1 MATERIALS

2.1.1. General Issues: Do not use materials with moisture stains or with signs of mold or mildew.

2.1.1.1. Moisture Stains: Materials that have evidence of moisture damage, including stains, are not acceptable, including both stored and installed materials; immediately remove from site.

2.1.1.2. Mold and Mildew: Materials that have evidence of growth of molds or of mildew are not acceptable, including both stored and installed materials; immediately remove from site.

PART 3 - EXECUTION

3.1 PROTECTION

3.1.1. Environmental Issues: Protect interior materials from water damage; where interior products not intended for wet applications are exposed to moisture, immediately remove from site.

3.1.1.1 Protect installed products using methods that do not support growth of molds and mildews. Immediately remove from site materials with mold and materials with mildew.

END OF SECTION

SECTION 01 40 50

MOCKUP REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Mockups, as follows:
 - a. Standalone Mockups.
 - b. First-in-Place Material Mockups.
 - 2. Quality control, special testing, and inspection of mockups.
- B. Materials to be furnished under the Contract Documents are subject to testing and inspection for compliance with the Drawings and Specifications. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Design Builder of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Design Builder's other quality assurance and control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Design Builder to provide quality assurance and control services required by other Specification Sections or by the District are not limited by provisions of this Section.
- C. Mockups, testing, and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Design Builder of responsibility for compliance with the Contract Document requirements.
 - 1. Specific mockup and testing requirements for individual elements of the Work are specified in the Sections that specify that Work. Requirements in those Sections may also cover production of standard products.
 - 2. Specified mockups, tests, inspections, and related actions do not limit Design Builder's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Design Builder to provide mockup construction and testing, including those required by authorities having jurisdiction, are not limited by provisions of this Section.
- D. Related Sections include the following:
 - 1. Section 01400 "Quality Control Requirements" for general testing and inspection requirements.
 - 2. Divisions 02 through 33 Sections for specific mockup requirements. (Refer to "Exhibit A" at the end of this Section)

1.2 DEFINITIONS

- A. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between adjacent materials and systems; and to demonstrate compliance with specified installation tolerances. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Standalone Mockups:
 - a. Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
 - b. Mockups of polished concrete flooring to establish visual and performance parameters of Design Reference Sample.
 - c. Mockup of exterior paving.
 - 2. Building Integrated Mockups (First-in-Place): Mockups erected into the building fabric. These mockups, if successful, may be left in place as part of the completed work at the sole discretion of the District.
- B. 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.
- C. 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 District's Representative.
- D. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
- E. NVLAP: A testing agency accredited according to the National Institute of Standards and Technology's (NIST's) National Voluntary Laboratory Accreditation Program.
- F. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- G. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to District's Representative, to establish product performance and compliance with industry standards.
- H. Source Quality Control Testing: Tests and inspections that are performed at the source (i.e., a plant, mill, factory, or shop).
- I. Field Quality Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- J. Testing Agency: An entity engaged to perform specific tests, inspections, or both that is certified as meeting the requirements applicable to the Work. Testing laboratory shall mean the same as testing agency.

- K. Testing, Inspection and Observation (TIO) Program: A program prepared for approval prior to issuance of the building permit that identifies the materials and tests to be performed on a project and the firm(s) and/or individual(s) responsible for performing those tests including, at a minimum, those required by applicable sections of the California Building Standards Code.
- L. Installer/Applicator/Erector: Design Builder or another entity engaged by Design Builder as an employee or Subcontractor of any tier to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- M. Experienced: As used herein, an individual or entity that has successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction to work in California.

1.3 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to District's Representative for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: 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. Refer uncertainties to District's Representative for a decision before proceeding.

1.4 ACTION SUBMITTALS

- A. Shop Drawings: For each type of integrated exterior mockup and for standalone mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.
 - 3. Submit detailed shop drawing of component exterior enclosure assembly. Drawing shall include all details for all components required for each composite exterior enclosure assembly mockup, required supports, water collection and drainage systems, anchorage, and other required work to complete composite mockup.
- B. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, finish and color designations, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.
- C. Sample Construction: Process submittal for field samples as specified for product submittal, for documentation.

- D. Delegated-Design Submittal: For standalone mockups to comply with structural requirements, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified professional engineer.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article 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.
- C. Installation Instructions:
 - 1. Include instructions specific to the use and conditions, including:
 - a. Sequence of component/assembly
 - b. Direction of operations for installation, unitized systems erection.
 - c. Surface preparation requirements.
 - d. All components of the system.
 - e. Coordination requirements for adjacent systems where appropriate.
 - 2. Provide 3 dimensional and "exploded views" to address components not easily expressed in orthographic drawings.
 - 3. Maintain mockup installation instructions for mockup erection on location and make available to all parties throughout mockup construction, testing, and reference.
- D. Design Builder's Mockup and Testing Plan: For quality-assurance and quality-control activities and responsibilities concerning mockups.
- E. Mock-up Completion: Process submittal for documentation when mock-up is complete.

1.6 DESIGN BUILDER'S MOCKUP AND TESTING PLAN

- A. Mockup and Testing Plan, General: Submit plan for mockup fabrication, construction, and testing before proceeding with Project submittals for associated exterior envelope Work.
 - 1. Include the following information in this plan, at a minimum:
 - a. Mockup shop drawing and submittals schedule.
 - b. Lead time for obtaining required mockup materials.
 - c. Times for testing, and if necessary, retesting of mockups.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests.
 - 3. Description of test.
 - 4. Identification of applicable standards.
 - 5. Identification of test methods.
 - 6. Number of tests required.
 - 7. Time schedule or time span for tests.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.7 REPORTS AND DOCUMENTS

- A. Test Reports: Prepare and submit certified written reports specified in other Sections. 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.
 5. Names of individuals making tests.
 6. Description of the Work and test method.
 7. Identification of product and Specification Section.
 8. Complete inspection data.
 9. Test results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of testing.
 11. Comments or professional opinion on whether tested Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.

1.8 GENERAL REQUIREMENTS FOR MOCK-UPS

- A. Maintain quality control over Work of various Section of Specifications, manufacturers, products, services, workmanship, and site conditions to produce mock-ups in accordance with the Contract Documents.
- B. Pre-Installation Conference
1. Conduct pre-installation conference in accordance with Division 01 requirements.
 2. Convene pre-installation conference at least one week prior to commencing work on Mockups.
- C. Workmanship:
1. Comply with standards specified in technical specification sections.
 2. Provide qualified personnel to produce mock-up of specified quality.
 - a. Use products, materials, finishes, fabrication methods, details, anchorage system, and construction methods identical with those required for the Work.
 - b. Use supervisor who will be involved in the actual construction.
 3. Secure mock-ups in place with positive anchorage devices designed and sized to withstand stresses, vibration, and tests.
 4. Provide finish to match approved samples.
- D. Assemble and erect complete, with specified attachment and anchorage devices, flashings, seals and finishes.
1. Anchorage and assembly shall conform to code requirements for seismic stability.
 2. Include, as part of the mock-up, required shoring and bracing to support mock-up.
 3. Coordinate mock-up construction with delivery and assembly of related materials and components to be included in each mock-up.
- E. Visual examination and testing of composite exterior enclosure assembly mockup shall be completed prior to fabrication and installation of any component system.

- F. Correct work installed within the composite exterior enclosure assembly mockup which is not acceptable to the District's Representative or does not pass testing requirements at no additional cost to the District. Correct subsequent installations elsewhere in the Work, which is not in accordance with the approved mockup at no additional cost to the District.
- G. District's approval of component exterior enclosure assembly mockup will not relieve Design Builder of the responsibility for any deviations from the requirements of the Contract Documents unless Design Builder has specifically informed the District's Representative in writing of any deviation at the time of the mockup review and the District's Representative has given written approval of the specific deviation.
- H. Make necessary additions and modifications to the details shown on the Drawings as may be required to comply with specified performance requirements while maintaining the design concept.
- I. Maintain composite exterior enclosure assembly mockup in a clean and undamaged condition during construction and dispose of mockups when no longer required as determined by District's Representative.
- J. Exterior Enclosure Mockup support framing, seismic bracing, connections, and related hardware shall be designed under the direct supervision of a Professional Engineer experienced in the design of the work, registered and licensed in the state of California, using performance and design criteria and requirements specified.

1.9 DESCRIPTION OF MOCK-UPS

- A. First-in-Place Mockups: Refer to individual Specification Sections for requirements. These mockups may remain in place after approval.
- B. Standalone Composite Exterior Enclosure: Free-standing composite exterior enclosure assembly mockup to be constructed at a location near the Project site, as shown on the Drawings, or, if not shown, as directed by District.
 - 1. This mockup will be constructed "out of sequence" with respect to normal sequence of construction of component parts of the exterior enclosure to obtain approval by District before commencing with the work represented by the composite exterior enclosure mockup.
 - 2. Construct mockup as shown on the Drawings.
 - 3. Mockup shall include:
 - a. Exterior wall assembly components as specified in Division 05 Section "Cold-Formed Metal Framing", Division 06 Section "Sheathing", Division 07 Sections for "Thermal Insulation", "Air Barriers", and "Sheet Metal Flashing and Trim." For New Art Complex, see attached Mock-Up Sketch.
 - b. Metal wall panels as specified in Division 07 Section "Metal Wall Panels."
 - c. Solid phenolic panel as specified in Division 07 Section "Solid Composite Wall Panels",
 - d. Joint sealants as specified in Division 07 Section "Joint Sealants."
 - e. Flashings as specified in Division 07 Section "Sheet Metal Flashing and Trim."
 - f. Exterior hollow metal frames as specified in Division 08 Section "Hollow Metal Doors and Frames."

- g. Glazed-aluminum curtain wall systems as specified in Division 08 Section "Glazed-Aluminum Curtain Walls" and Structural-Sealant-Glazed Curtain Walls."
 - h. Glazed-aluminum storefront systems as specified in Division 08 Section "Aluminum Entrances and Storefronts"
 - i. Glazing as specified in Division 08 Section "Glazing."
 - j. Cement plastering as specified in Division 09 Section "Portland Cement Plastering."
4. Demolish and remove mockup when directed by District.
- C. Polished Concrete: Mockup to be constructed at location near the Project Site, as directed by District.
- 1. This mockup will be constructed "out of sequence" with respect to normal sequence of construction to obtain approval by District before commencing of work represented by the polished concrete mockup.
 - 2. Size: Minimum 10 feet by 10 feet.
 - 3. Mock up shall be for Type SA-1 Radiant Slab
 - 4. Demolish and remove mockup when directed by District.

1.10 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual 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. Installers shall be qualified by the product or equipment manufacturer, if required for warranty or other performance guarantees.
- C. Manufacturer Qualifications: A firm experienced in fabricating 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 as required to meet the Project schedule.
- D. Fabricator Qualifications: A firm experienced in procuring 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 as required to meet the Project schedule.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in California and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of systems, assemblies, or products that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: 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.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, including the requirements of ASTM D3666, D3740, E329, E543, and E548 as applicable; and with additional qualifications specified in individual Sections; and that is acceptable to District. All testing shall be performed under the supervision and control of a California registered professional engineer employed by the testing agency.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of a manufacturer who is trained and approved by the manufacturer to inspect installation of the manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Laboratory Testing: Where testing agency is indicated to perform preconstruction laboratory testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Design Builder responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to District with copy to Design Builder. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. Mockups, General: 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 on-site field mockups and sample panels in location indicated or, if not indicated, as directed by District. Provide the following types as indicated:
 - a. Standalone Exterior Enclosure Mockups: Include material and products indicated in Drawings. Provide composite Shop Drawings for District approval.
 - b. Building Integrated First-in-Place Mockups: Build portion of Work and obtain Districts approval before proceeding.
 - c. Preconstruction Testing: When required, either as part of preconstruction mockup or as required by individual Sections, provide material to testing agency for testing prior to commencement of that portion of Work.
 - 2. Notify District and District at least 7 days in advance of dates and times when mockups will be constructed, unless otherwise indicated or required.
 - 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. Obtain District's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 - 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 7. Demolish and remove mockups when directed by District unless otherwise indicated.

- K. Standalone Exterior Enclosure Mockups: Prior to commencing exterior construction, build freestanding composite mockup of exterior assemblies as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.
 - 1. Construct stand-alone mockup as indicated for visual observation and performance testing indicated.
 - 2. Visual Mockups Review: Construct stand-alone mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 3. Performance Testing: Follow indicated testing procedures for Field Quality Control testing and inspections, unless otherwise indicated.

- L. Building Integrated First-in-Place Mockups: Install portion of material or product indicated for visual review by District and/or for performance testing in actual facility. construction. Coordinate installation of specified materials and products for which mockups are required in individual Specification Sections, along with supporting materials.
 - 1. Construct in-place mockup in size or configuration indicated in individual Specification Sections, or as directed by District.
 - 2. Visual Mockups Review: Construct in-place mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 3. Performance Testing: Follow indicated testing procedures for Field Quality Control testing and inspections, unless otherwise indicated.
 - 4. Obtain District's approval prior to commencement of remaining Work of that section.

- M. Preconstruction Laboratory Testing: Comply with requirements of preconstruction testing as specified in individual Specification Sections, including, but not necessarily limited to, the following:
 - 1. Concrete testing.
 - 2. Joint Sealant Compatibility and Adhesion testing.
 - 3. Structural sealant testing.

1.11 QUALITY CONTROL

- A. District Responsibilities: Where quality control services for mockups are indicated as District's responsibility, District will engage a qualified testing agency to perform these services.
 - 1. Specified inspection and testing shall be performed in accordance with Part 1, Title 24, Article 4, Paragraph 7-149, California Code of Regulations.
 - 2. District will furnish Design Builder with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspections they are engaged to perform.
 - 3. Payment for these services will be by the District.
 - 4. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Design Builder, and the Contract Sum will be adjusted by Change Order.
 - 5. District's Project Inspector:
 - a. A Project Inspector employed by the District in accordance with the requirements of the California Building Code will be assigned to the work. The Project Inspector's duties are specifically defined in CCR Title 24 Part 1.

- b. The Design Builder shall notify the Project Inspector a minimum of 2 working days in advance of execution of all Work that requires inspection.
 - c. The Work in all stages of progress shall be subject to the personal continuous observation of the Project Inspector. He or she shall have free and safe access to any or all parts of the work at any time. The Design Builder shall furnish the Project Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Design Builder from any obligation to fulfill this Contract.

- B. Design Builder Responsibilities: Tests and inspections not explicitly assigned to District are Design Builder's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Design Builder by authorities having jurisdiction, whether specified or not.
 - 2. Where services are indicated as Design Builder's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Design Builder shall not employ same entity engaged by District, unless agreed to in writing by District.
 - 3. Schedule testing agencies functions sufficiently in advance of testing or inspecting to allow District and Construction Manager observations.
 - 4. Testing and inspecting requested by Design Builder and not required by the Contract Documents are Design Builder's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. Manufacturer's/Fabricator's Technical Services: Engage manufacturer's technical representatives to observe and inspect the mockups. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed mockups, witnessing testing, and submittal of written reports.

- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Design Builder's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

- E. Testing Agency Responsibilities: Cooperate with District and Design Builder in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify District and Design Builder promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Coordinate the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Design Builder.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform any duties of Design Builder.
- F. Associated Services: 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.
 - G. Coordination: 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.
 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
 - H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Design Builder's construction schedule. Update as the Work progresses.
 1. Distribution: Distribute schedule to District, testing agencies, and each party involved in performance of portions of the mockups and testing.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Except as otherwise specified, materials for mock-up shall be as shown and specified in the respective Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine site and area to receive mock-up and conditions under which mock-ups are to be constructed. Correct any deficiencies.

3.2 REVIEW AND ACCEPTANCE

- A. Upon completion of mock-up construction, notify District's Representative and make arrangements for review.
- B. Acceptable mock-ups shall become the standard of quality for the Work, as approved by District.
- C. Maintain mock-ups in a neat, clean, and "as-accepted" conditions.
- D. Mock-ups shall be completed and shall be approved by the District in writing, prior to commencing with Work.
- E. Modify the mock-ups, or construct new components if requested by the District's Representative, for further evaluation and until final acceptance is obtained.

3.3 TESTING OF COMPOSITE EXTERIOR ENCLOSURE ASSEMBLY

- A. Conduct testing in the presence of District Representative. Provide minimum one week prior notice of date and time of testing, unless otherwise indicated.
- B. Composite exterior enclosure assembly mockup is subject to observation and inspection by District throughout construction and testing.
- C. Construct test chamber in accordance with procedures and requirements of ASTM E 1105. Construct portable negative pressure enclosure unit sealed against the composite exterior wall mock-ups on the indoor side, and use suspended pipe grid with nozzles to supply the required water flow to the exterior of composite exterior wall mockups. Provide test enclosure equivalent in size to composite exterior wall mockups, unless directed otherwise. Provide air system, pressure measuring apparatus, and water-spray system in accordance with ASTM E 1105.
 - 1. Perform water penetration tests on exterior glazed openings in accordance with procedures and requirements of ASTM E 1105, Procedure B with at least 3 cycles. Water-spray system shall deliver water uniformly against exterior surface of composite exterior wall mock-up at a minimum rate of 5 gallons per square foot per hour. Test pressure shall be an air pressure difference of 20 percent of design pressure, with minimum differential of 6.24 lbf/ft² and maximum of 12.0 lbf/ft².
 - 2. Perform a separate water penetration tests of the portland cement plaster assembly including wall system, sheathing, air barriers, including reveals, control joints, trim, and joints with adjacent materials using a modified ASTM E 1105 test for which no chamber test is required. Spray water into the mockup at a rate of 5 gallons per square foot per hour for a period of 1.5 hours.
 - 3. Water Leakage: Water leakage is defined as any controlled water that appears on any normally exposed interior surfaces, that is not contained or drained back to the exterior, or that can cause damage to adjacent materials or finishes. Water contained within drained flashings, gutters, and sills is not considered water leakage.
 - 4. Prepare test reports as required by ASTM E 1105.
 - 5. If water leakage occurs, revise and retest composite exterior wall mock-ups. Modifications must be realistic in terms of job conditions, must maintain standards of quality and durability, and are subject to review and action by Project Manager. Leave composite exterior wall mock-ups in place during installation of work
 - 6. Approval of composite exterior wall mock-ups is a prerequisite for final approval of component Shop Drawings.

3.4 TEST AND INSPECTION LOG

- A. Tracking: Prepare plan and elevations indicating locations and results of testing for integrated exterior mockups. Update testing completion as work proceeds.
- B. Prepare a sequentially numbered record of tests and inspections. Include the following:
 - 1. Request for Inspection
 - 2. Date test or inspection was conducted.
 - 3. Description of the Work tested or inspected.
 - 4. Applicable Construction Drawing and Specification numbers
 - 5. Date test or inspection results were transmitted to District's Representative.
 - 6. Identification of testing agency or special inspector conducting test or inspection.

- C. Maintain log at Site. Post changes and modifications as they occur. Provide access to test and inspection log for District and its representatives' reference during normal working hours.
- D. Submit: With record documents.
 - 1. Provide updated copies of documents to District and Construction Manager upon completion of mockups and testing by type and location.

3.5 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Comply with the Contract Document requirements for cutting and patching.
- B. Protect construction exposed by or for quality control service activities.
- C. Repair and protection are Design Builder's responsibility, regardless of the assignment of responsibility for quality control services.
- D. Protect standalone mockups until released for demolition or removal from Site by District.

3.6 REMOVAL

- A. Remove unacceptable mock-ups.
- B. Except as otherwise specified, remove free-standing mock-ups which are not to be permanent prior to completion of Project when directed by District but not before the work they are being used to judge has been accepted by District.

END OF SECTION 01 40 50

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- 1.1.1 This section includes regulatory requirements applicable to the Project.
- 1.1.2 Specific reference in the specifications to codes and regulations or requirements of regulatory agencies shall mean the latest printed edition of each adopted by the regulatory agency in effect at the date of award of the Design/Build Agreement, even if an earlier version was used in development of, and/or specified elsewhere in the Contract Documents, Request for Proposals or Criteria Documents.
- 1.1.3 Should any conditions develop not covered by the Contract Documents wherein the finished work will not comply with current codes, Design Builder shall address such conditions so that the finished work conforms to current codes.

1.2 REFERENCES TO REGULATORY REQUIREMENTS

- 1.2.1 Codes, laws, ordinances, rules and regulations referred to in the Contract Documents shall have full force and effect as though printed in full in these specifications. Codes, laws, ordinances, rules and regulations are not furnished to the Design Builder, because the Design Builder is assumed to be familiar with their requirements. The listing herein of applicable codes, laws and regulations, including those for hazardous waste abatement work, in the Contract Documents is supplied to the Design Builder as a courtesy and shall not limit the Design Builder's responsibility for complying with all applicable laws, regulations or ordinances applicable to the Work. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be used.
- 1.2.2 All of the Work shall conform to all applicable Federal, State, and local codes, laws, ordinances, rules and regulations.
- 1.2.3 Precedence:
 - 1.2.3.1 Where specified requirements differ from the requirements of applicable codes, ordinances and standards, the more stringent requirements shall take precedence.
 - 1.2.3.2 Where the Drawings, Plans or Specifications require or describe products or execution of better quality, higher standard or greater size than required by applicable codes, ordinances and standards, the Drawings, Plans and Specifications shall take precedence so long as such increase is legal.

- 1.2.3.3 Where no requirements are identified in the Drawings, Plans or Specifications, Design Builder shall comply with all requirements of applicable codes, ordinances and standards of governing authorities having jurisdiction.
- 1.2.3.4 The Project shall be governed by applicable regulations, including, without limitation, the State of California's Administrative Regulations for the Division of the State Architect - Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, CCR, and the most current version on the date the proposals are opened and as it pertains to school construction including, without limitation:
 - 1.2.3.4.1 Test and testing laboratory per section 4-335.
 - 1.2.3.4.2 Special inspections per section 4-333 ©
 - 1.2.3.4.3 Verified reports per section 4-365 & 4-343 ©
 - 1.2.3.4.4 Duties of the Architect and Engineers shall be per section 4-333 (a) and 4-341.
 - 1.2.3.4.5 Duties of the Design Builder shall be per section 4-343.
 - 1.2.3.4.6 Addenda and Change Orders per section 4-338.

1.3 CODES

- 1.3.1 Codes which apply to the Contract Documents include, but are not limited to, the following:
 - 1.3.1.1 California Building Code (Title 15, Part 2, Title 24, C.C.R., including, without means of limitation, sections 16A, 102A.23, 308, 420A, 504-506, 904.2.6, 1019 and 1604)
 - 1.3.1.2 California Electrical Code (Part 5, Title 24, C.C.R.)
 - 1.3.1.3 California Mechanical Code (Part 3, Title 24, C.C.R.)
 - 1.3.1.4 California Plumbing Code (Part 4, Title 24, C.C.R.)
 - 1.3.1.5 California Elevator Safety Regulations (Part 7, Title 24, C.C.R.)
 - 1.3.1.6 International Building Code
 - 1.3.1.7 Uniform Plumbing Code
 - 1.3.1.8 Uniform Mechanical Code
 - 1.3.1.9 National Electrical Code
 - 1.3.1.10 California Energy Code
 - 1.3.1.11 California Fire Code
 - 1.3.1.12 CALGreen Code

1.4 LAWS, ORDINANCES, RULES AND REGULATIONS

- 1.4.1 During prosecution of Work to be done under the Contract Documents, comply with applicable laws, ordinances, rules and regulations, including, but not limited to, the following:

1.4.2 Federal

- 1.4.2.1 Americans With Disabilities Act of 1990 ADA
- 1.4.2.2 29 CFR, Section 1910.1001, Asbestos
- 1.4.2.3 40 CFR, Subpart M, National Emission Standards for Asbestos
- 1.4.2.4 Executive Order 11246
- 1.4.2.5 Federal Endangered Species Act
- 1.4.2.6 Clean Water Act
- 1.4.2.7 Federal Occupational Safety & Health Administration Act

1.4.3 State of California

- 1.4.3.1 California Code of Regulations, Titles 5, 8, 12, 13, 15, 17, 19, 20, 21, 22, 23 24 and 25
- 1.4.3.2 California Public Contract Code
- 1.4.3.3 California Health and Safety Code
- 1.4.3.4 California Government Code
- 1.4.3.5 California Labor Code
- 1.4.3.6 California Civil Code
- 1.4.3.7 California Code of Civil Procedure
- 1.4.3.8 CPUC General Order 95, Rules for Overhead Electric Line Construction
- 1.4.3.9 CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
- 1.4.3.10 California Occupational Safety and Health Administration (Cal OSHA)
- 1.4.3.11 Occupational Safety and Health Administration (OSHA): Hazard Communications Standards
- 1.4.3.12 California Endangered Species Act
- 1.4.3.13 Water Code
- 1.4.3.14 Fish and Game Code
- 1.4.3.15 California Education Code

1.4.4 State of California Agencies

- 1.4.4.1 State and Consumer Services Agency
- 1.4.4.2 Office of the State Fire Marshal
- 1.4.4.3 CalTrans
- 1.4.4.4 Department of Fish and Game

- 1.4.4.5 Division of the State Architect
- 1.4.4.6 Office of Public School Construction
- 1.4.4.7 State Allocation Board
- 1.4.4.8 California Department of Education

1.4.5 Local Agencies:

- 1.4.5.1 City of Oakland
- 1.4.5.2 City of Oakland Fire Marshal
- 1.4.5.3 Bay Area Air Quality Management District
- 1.4.5.4 EBMUD – East Bay Municipal Utility District

1.4.6 Other Requirements:

1.4.6.1 National Fire Protection Association (NFPA): Pamphlet 101, Life Safety.

1.4.6.2 The following NFPA Standards apply (latest edition):

NFPA Standard

- 13 Installation of Sprinkler Systems
- 14 Installation of Standpipes and Hose Systems
- 20 Installation of Centrifugal Fire Pumps
- 24 Installation of Private Fire Service Mains
- 50 Bulk Oxygen Systems
- 72 National Fire Alarm Code (as amended)
- 80 Fire Doors and Fire Windows
- 92A Smoke Control Systems
- 2001 Clean Agent Fire Extinguishing Systems

1.4.6.3 The Design Builder shall comply with Standard Specifications such as California Standard Specification, ASTM, ANSI, AASHTO, AISC, Commercial Standards, Federal Specifications, NFPA, NEMA, AWWA, UL, and the like.

1.4.6.4 References on the Drawings Plans or in the Specifications to “code” or “building code” not otherwise identified shall mean the codes specified in this Section 01 41 00 together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction.

1.4.7 Design Builder shall provide access to all of the foregoing within twenty-four (24) hours and maintain a copy of each of the above documents in the Design Builder’s field office.

1.4.8 It shall be understood that manufacturers, producers, and their agents of materials are required either to have such specifications available for reference or to be fully familiar with their requirements as pertains to their project or material

1.4.9 Other Applicable Laws, Ordinances and Regulations:

1.4.9.1 Work shall be accomplished in conformance with all applicable laws, ordinances, rules and regulations of Federal, State and local governmental agencies and jurisdictions having authority over the Project.

1.4.9.2 Work shall be accomplished in conformance with all rules and regulations of public utilities and utility districts.

1.4.9.3 Where such laws, ordinances rules and regulations require more care or greater time to accomplish Work, or require better quality, higher standards or greater size of products, Work shall be accomplished in conformance to such requirements with no change to the Contract Time and Stipulated Sum.

1.4.10 Change Orders and Claims:

1.4.10.1 The Public Contract Code, including but not limited to § 7105(d)(2), and Government Code § 930.2 *et seq.*, apply to all contract procedures for changes, time extensions, change orders (time or compensation) and claims.

1.4.10.2 Any change, waiver, or omission to implement contract change order and claim procedures shall have no legal effect unless expressly authorized in a fully executed change order approved by District.

1.5 DEFERRED APPROVAL

1.5.1 Where noted in technical Specification sections, certain items of material may require deferred approval pending submittal of shop drawings. It is the District's intent to minimize the number of deferred submittals for this project. For these items, Contractor shall submit details and structural calculations for anchorage, to comply with State of California Code of Regulations Title 24, including Table 16-B. Calculations shall be made by a Structural Engineer registered in the State of California.

1.6 CONFLICTS

1.6.1 Between referenced regulatory requirements: Comply with the one establishing the more stringent requirement.

1.6.2 Between referenced regulatory requirements and the Contract Documents: Comply with the one establishing the more stringent requirement.

1.7 COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT

- 1.7.1 The Design Builder acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a Design Builder, must be accessible to the disabled public. The Design Builder shall provide the services specified in this Agreement in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. The Design Builder shall not discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of the Design Builder, its employees, agents or assigns shall constitute a material breach of this Agreement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 41 10
TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01400 – “Quality Control Requirements”
- C. Section 01410 – “Regulatory Requirements”
- D. Section 01412 – “Hazardous Material”
- E. Section 01770 – “Contract Closeout Procedures”
- F. Division 2 through 33 Sections for Special Inspections, tests required and standard for testing.

1.3 SUMMARY

- A. This section describes the requirements and procedures for work involving the testing laboratory.

1.4 REFERENCES

- A. CBC - California Building Code.
- B. CCR - California Code of Regulations.
- C. ANSI/ASTM D3740 – Practice for Evaluation of agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- D. ANSI/ASTM E329 – Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as Used in Construction.

1.5 REGULATORY REQUIREMENTS

- A. Testing, sampling and preparing samples will be in accordance with the standards referenced in individual specification sections and in the applicable sections of CBC State Chapters.
- B. Testing and submitting test reports will conform to provisions of Section 4-335, Part 1, Title 24, CCR.
- C. Comply with Requirements of ANSI/ASTM E329 and ANSI/ASTM D3740.
- D. Laboratory shall maintain a full-time registered Engineer on staff to review services.
- E. Laboratory authorized to operate in State in which Project is located.
- F. Testing Equipment shall be calibrated at reasonable intervals with devices of accuracy traceable to either NSB Standards or accepted values of natural physical constants.

1.6 SELECTION AND PAYMENT

- A. The District will employ and pay for the services of testing laboratory and/or testing agencies acceptable to the Division of the State Architect to conduct required tests and inspections for the Project.

1. Soils: The testing laboratory will observe excavating, grading, and filling operations and provide testing of soil materials as required by the Division of the State Architect and as specified in the Contract Documents. The Soils Engineer will have management, laboratory and field supervisory personnel with minimum 5 years' experience in testing and inspection of soils materials and will have adequate facilities, equipment, and technical references to permit performance of testing and inspections within applicable regulations and standards in accordance with Section 4-335, Part 1, Title 24, CCR.
2. Other Construction: The testing laboratory will conduct tests, inspections, and special inspections as required by the Division of the State Architect and as specified in the Contract Documents.
 - a. Construction Requiring Testing and Inspection Other Than Special Inspection: The testing laboratory will have management, laboratory and field supervisory personnel with minimum 5 years' experience in testing and inspection of work and materials of construction and will have adequate facilities, equipment, and technical references to permit performance of testing and inspections within applicable regulations and standards in accordance with Section 4-335, Part 1, Title 24, CCR.
 - b. Construction Requiring Special Inspection: The testing laboratory will have special inspectors approved by the Division of the State Architect to conduct special inspections as required by the Division of the State Architect under provisions of Section 4-333, Part 1, Title 24, CCR.
- B. Retesting: When initial tests indicate non-compliance with the Contract Documents, subsequent retesting caused by the non-compliance shall be performed by the same testing agency and the costs thereof will be deducted by the District from the Design Builder's Contract Price by Change Order.
- C. Retesting Covered Work: Re-examination of previously tested and inspected work may be ordered by the District. The Design Builder shall uncover such work if retesting is ordered. If work is found in accordance with Contract Documents, the

District will pay costs of uncovering, removing, retesting and replacing. If work is found not in accordance with Contract Documents, the District will deduct the cost of retesting from the Contract Price by Change Order and the Design Builder will bear the costs of uncovering, removing and replacing work.
- D. Testing and inspecting performed for Design Builder's convenience, such as testing and inspection to establish equivalence of substitutions, equivalence of repairs to damaged materials, and testing and inspecting to expedite the operations, shall be the Design Builder's responsibility.
 1. The Design Builder shall employ a licensed professional engineer of the discipline required to develop a testing program which will establish equivalency.
 2. The Design Builder shall submit the testing program to the District for review.
 3. The Design Builder shall arrange testing in accordance with the accepted testing program to be performed by the District's testing laboratory.
 4. The costs of testing done by the District's testing laboratory for the Design Builder will be deducted from the Contract Price by Change Order.

5. The Design Builder may not arrange for testing upon portions of the work already completed except with the written consent of the District.
- E. Employment of testing laboratory shall in no way relieve Design Builder of obligation to perform work in accordance with requirements of Contract Documents.
- F. The District shall have the right to make tests at any time on materials or work done whether those materials are specified or substituted items.

1.7 LABORATORY RESPONSIBILITIES

- A. Provide qualified personnel at site. Cooperate with District, Project Inspector and Design Builder in performance of services.
- B. Perform specified sampling and testing of materials in accordance with specified standards.
- C. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- D. Promptly notify Division of the State Architect, District, Project Inspector and Design Builder of observed irregularities and non-conformance of work and products.
- E. Perform additional tests required by District, and Division of the State Architect.
- F. Attend Pre-Construction Meeting, Progress Meetings and other meetings as requested by District.
- G. Perform all tests required by the Division of the State Architect for this Project. See form DSA-103 in this Project Manual and individual specification sections.

1.8 LABORATORY REPORTS

- A. Test/Inspection Reports:
 1. Reports will comply with Section 4-335(d), Part 1, Title 24, CCR.
 2. Include every test and inspection made regardless of whether such tests and inspections indicate that the material and procedures are satisfactory or unsatisfactory.
 3. Include records of special sampling operations as required.
 4. Indicate that materials were sampled and tested in accordance with requirements of CCR regulations and Construction Documents.
 5. Indicate specified design strength of materials such as masonry, concrete and steel.
 6. State whether or not materials and procedures comply with requirements of the Contract Documents.
 7. Submit copies of reports to Division of the State Architect, District, Project Inspector, and Design Builder within 14 days of tests. Submit copies of reports of non-complying materials and procedures immediately.
- B. Verified Reports:
 1. Soils Engineers inspecting placement of fills and Special Inspectors will submit Verified Reports in accordance with Section 4-336, Part I, Title 24, CCR.
 - a. Special inspections requiring Verified Reports include, but are not limited to, inspections of masonry construction, glued-laminated timber fabrication, wood framing using timber connectors, manufactured trusses, ready-mixed concrete batching, shotcrete application, shop welding and field welding.

- b. Submit two copies of reports directly to the Office of Regulation Services; forward one copy each to District and Project Inspector.
- 2. Soils Engineers and testing laboratories conducting tests on materials will submit verification of test reports at completion of testing program and when required by Office of Regulation Services in accordance with Section 4-335(e), Part I, Title 24, CCR.
 - a. The Final Laboratory Verified Report or Laboratory Affidavit will indicate whether every material tested passed and disposition of problems associated with earlier deficient test reports.
 - b. Submit two copies of each report directly to Office of Regulation Services; forward one copy each to District and Project Inspector.

1.9 LIMITS ON AGENCY OR TESTING LABORATORY AUTHORITY

- A. Agency or laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.
- B. Agency or laboratory may not approve or accept any portion of the work.
- C. Agency or laboratory may not assume any duties of Design Builder.
- D. Agency or laboratory has no authority to stop work.

1.10 DESIGN BUILDER RESPONSIBILITIES

- A. Package and deliver to laboratory at designated location adequate samples of materials proposed to be used which require testing. Samples shall be selected by laboratory personnel. Allow proper time for selecting samples, and making tests or considerations.
- B. Cooperate with laboratory personnel, and provide access to work and to manufacturer's facilities.
- C. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples as selected by laboratory personnel at the site or at source of products to be tested, to facilitate tests and inspections, and for storage and curing of test samples.
- D. Schedule all tests and inspections with the testing and inspections firm and to notify District and Project Inspector a minimum of 3 working days prior to expected time for operations requiring inspection and testing services. Do not allow work to be covered prior to inspection and testing.
- E. Cooperate fully with the testing laboratory's personnel and with special inspectors in inspecting any part of the construction and in taking any samples of materials required to be tested. Provide access to the work. The Design Builder's personnel shall furnish and cut or prepare all samples in the presence of either the testing laboratory personnel or the special inspectors and secure the witness's initial on each sample prepared.
- F. Notify the testing laboratory to send a bonded messenger to pick up the initialed samples the same day the samples were prepared. Alert the testing laboratory 3 working days in advance as to the times and location of the required sampling, tests and inspections so as to not delay the work of the project, and make sure that the required sampling, tests inspections are promptly completed.

1.11 INSPECTIONS AND TESTS

Required inspections and tests may include, but are not limited to, the following:

- A. Testing Certificates to be provided by Design Builder:
 - 1. Mill test reports for reinforcing steel.
 - 2. Mill test reports for cement.
 - 3. Weighmaster's tickets for each load of transmit mixed concrete.
 - 4. Weighmaster's affidavit.
 - 5. Certifications of welders.
 - 6. Certifications of materials.
- B. Initial Testing Provided by District:
 - 1. Site Clearing: Test compaction of excavation backfill.
 - 2. Earthwork:
 - a. Sample and test fill and base materials for compliance with specified requirements.
 - b. Inspect placement of engineered fill.
 - c. Inspect bottoms of footings and foundation trenches.
 - d. Test compaction of each layer of engineered fill.
 - 3. Trenching:
 - a. Inspect placement of trench backfill.
 - b. Test compaction of trench backfill.
 - 4. Asphaltic Concrete Paving:
 - a. Sample and test quality of paving and base if directed by District.
 - b. Test compaction of paving and base if directed by District.
 - 5. Portland Cement Concrete Paving:
 - a. Review mix designs.
 - b. Sample and test compressive strength of concrete.
 - c. Sample and test slump of concrete.
 - 6. Concrete Reinforcing:
 - a. Review mill tests.
 - b. Sample and test unidentified reinforcing steel.
 - c. Sample and test identified reinforcing steel.
 - d. Inspect placement and installation of reinforcing steel.
 - e. Inspect field welding of reinforcing steel.
 - 7. Cast-In-Place Concrete:
 - a. Sample and test cement.
 - b. Sample and test aggregate.
 - c. Review mix designs and confirm mix design proportions with weighmaster.

- d. Perform initial batch plant inspection.
 - e. Inspect concrete placement.
 - f. Sample and test slump of concrete.
 - g. Test air content of concrete.
 - h. Sample and test concrete for compressive strength.
 - i. Test concrete for shrinkage.
8. Structural Steel:
- a. Review mill certificates for shapes and plates.
 - b. Sample and test unidentified steel.
 - c. Establish recommended procedures for shop and field welding.
 - d. Inspect shop and field welding, including welded studs.
 - e. Test full penetration welds.
9. Metal Fabrications:
- a. Inspect shop and field welding of load bearing fabrications.
 - b. Test full penetration welds in load bearing fabrications.
10. Rough Carpentry: Load test expansion anchors.
11. **DSA 103 Form. See the DSA 103 form, following Section 00007, for required tests.**
- C. The cost of the following initial tests, if required, will be deducted by the District from the Contract Price by Change Order.
- 1. Testing to establish equivalence of material not properly identified.
 - 2. Testing to establish equivalence of substitutions.
 - 3. Testing required to expedite Design Builder's operations.
 - 4. Testing relating to repair of work which fails to meet specifications.
 - 5. Testing and inspection required to correct damage to material in shipping and erection.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01 41 10

SECTION 01 41 40

GUIDELINES FOR OPERATIONS DURING A PROTEST

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”

1.3 SUMMARY

- A. Project Security
 - 1. Project security is the responsibility of the Design Builder. However, there may be occasions where campus events elicit a protest response from campus and community constituencies. If protests occur at the Site, the District will attempt to insure a safe work environment for construction activities. If the safety of the Site cannot be assured by the District (both for the construction personnel and for the equipment and materials), the Design Builder will be directed to vacate the Site and asked not to return until the Site can be secured.

1.4 PROCEDURES DURING A PROTEST

- A. Known Protests (Most Common):
 - 1. In most cases, protests will be anticipated. Information is provided in advance to the Campus Police Department (CPS), or the assemblage can be seen from the Site.
 - 2. Under these conditions, CPS will dispatch officers to the Site. CPS will notify the District Representative who will contact the Project Inspector. Once on Site, the supervising CPS officer will introduce himself to the Design Builder's Superintendent, the Project Inspector and a review of the situation will be made.
 - 3. The supervising CPS officer will determine if the Design Builder should cease work in certain areas, relocate his work forces, or vacate the premises.
 - 4. The Project Inspector, and Design Builder will document the action in their daily report(s), and consideration shall be given to the Design Builder for an extension of contract time only. Any extension of Contract Time will be by an executed Change Order and shall be reviewed and approved by District.
- B. Unknown Event:
 - 1. In the event that protest activities occur without prior notification and consultation with CPS, the Design Builder is to cease all work activities that may directly or indirectly cause harm to a worker or protestor.
 - 2. The Design Builder should leave the affected area, and if possible, remove tools, equipment and construction materials. The Design Builder's Superintendent will notify the Project Inspector of the event.
 - 3. The Project Inspector will record this activity in their daily report) and consideration may be

given by District to the Design Builder for an extension of Contract Time.

- C. If the Design Builder is prevented from vacating the affected area by protestors, CPS will attempt to provide safe egress for the Design Builder.
- D. Under no circumstances is the Design Builder to confront protestors, incite activity, or physically impede their intended activity.
- E. The Design Builder shall be aware of the work area and cognizant of any unusual visitors to the Site.
- F. Jurisdiction is as follows:

On-Campus Events:

Diablo Valley College Police Services
Phone: 925-969-2785

Off-Campus Events:

City of Pleasant Hill Police Department (Non-Emergency)
Phone: 925-288-4600

Emergency:

911

END OF SECTION 01 41 40

SECTION 01 41 50

MITIGATION MONITORING REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Specification Sections shall apply to this Section without limitation.

1.2 SUMMARY

- A. This Mitigation Monitoring and Reporting Program (MMRP) was formulated based on the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Los Medanos College Improvement Implementation Project. This MMRP is in compliance with Section 1509 of the *CEQA Guidelines*, which requires that the Lead Agency “adopt a program for monitoring or reporting of the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects.” The MMRP lists mitigation measures recommended in the IS/MND and identifies mitigation monitoring requirements.
- B. The District has attempted to insert these MMRP requirements into the various other Specification Sections that are related to the nature of each mitigation measure. This Section is included to provide a consolidated location for all of the CEQA requirements. Where measures are found in any of the Contract Documents that conflict with these measures, the more stringent measure shall apply.
 - 1. Table 1 presents the mitigation measures identified for the Project. Each mitigation measure is numbered according to the topical section to which it pertains in the IS/MND. As an example, Mitigation measure AIR-1 is the first mitigation measure identified in the IS/MND for the Project.
 - a. Elements of the MMRP which have been stricken out do not apply to this project.
 - b. The first column of Table 1 identifies the mitigation measure from the IS/MND.
 - c. The second column, entitled “Action and Implementation Timing,” describes each mitigation measure.
 - d. The third column, “Party Responsible for Monitoring,” names the party ultimately responsible for ensuring that the mitigation measures are implemented.
 - e. The fourth column “Action by Monitor,” outlines the steps for monitoring the action identified in the mitigation measure.
 - f. The fifth column entitled “Monitoring Timing,” states the time the monitor must ensure that the mitigation measure has been implemented.
 - g. The last column will be used by the District to ensure that individual mitigation measures have been monitored.

Table 1: Mitigation Monitoring and Reporting Program for Contra Costa College

Recommended Mitigation Measures	Action and Implementation Timing	Party Responsible for Implementing Mitigation	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing	Verification of Compliance Name/Date
III. AIR QUALITY						
<p>AIR-1: Consistent with guidance from the BAAQMD, the District shall require contractors to include emissions control measures in construction specifications for the project. The District shall review the final construction specifications to verify that the requirements have been included prior to beginning grading and excavating activities for the project. The District shall verify via field inspection at least twice during construction that the measures are being implemented. The following actions are required:</p> <ul style="list-style-type: none"> • Idling time of diesel powered construction equipment shall be limited to 2 minutes; • Alternative powered construction equipment (i.e., CNG, biodiesel, electric) shall be utilized when feasible; • Add-on control devices shall be used such as diesel oxidation catalysts or particulate filters; • Project construction shall be phased; and • Operating hours of heavy duty equipment shall be minimized. 	Implement the emission control measures listed in Mitigation Measure AIR-1 during construction	Contra Costa Community College District and construction contractor	Contra Costa Community College District	<p>1. Review final construction specifications to ensure all requirements listed in Mitigation Measure AIR-1 are included</p> <p>2. Visit project site at least twice to verify that emission control measures are being implemented</p>	<p>1. Before grading begins</p> <p>2. During project construction</p>	<p><i>Name:</i></p> <p><i>Date:</i></p>

Recommended Mitigation Measures	Action and Implementation Timing	Party Responsible for Implementing Mitigation	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing	Verification of Compliance Name/Date
<p>AIR-2: AIR-2: Consistent with the guidance from the BAAQMD, the District shall include dust control measures in construction contracts and specifications for the project. The District shall verify via field inspection at least twice during construction of each project that the measures are being implemented. The following controls shall be implemented at all construction sites:</p> <ul style="list-style-type: none"> • Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers to control dust; • Cover all trucks hauling soil, land, and other loose materials or require all trucks to maintain at least two feet of freeboard; • Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, inactive construction areas, and staging areas at construction sites; • Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality; • Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets; 	Implement the dust control measures listed in Mitigation Measure AIR-2 during construction	Contra Costa Community College District and construction contractor	Contra Costa Community College District	<p>1. Review final construction specifications to ensure all requirements listed in Mitigation Measure AIR-2 are included</p> <p>2. Visit project site at least twice to verify that dust control measures are being implemented</p>	<p>1. Before grading begins</p> <p>2. During project construction</p>	<p>Name:</p> <p>Date:</p>

Recommended Mitigation Measures	Action and Implementation Timing	Party Responsible for Implementing Mitigation	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing	Verification of Compliance Name/Date
<p><i>AIR-2 Continued</i></p> <ul style="list-style-type: none"> • Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.); • Install base rock at entryways for all existing trucks, and wash off the tires or tracks of all trucks and equipment in designated areas before leaving the site; • Limit traffic speeds on unpaved roads to 15 mph; • Install sandbags or other erosion control measures to prevent silt runoff to public roadways; • Replant vegetation in disturbed areas as quickly as possible; and • Suspend excavation and grading activity when sustained wind speeds exceed 25 mph. Sustained wind speed shall be determined by averaging observed values over a two- minute period. Wind monitoring by the construction manager shall be required at all times during excavation and grading activities. 						
AIR-3a: Implement Mitigation Measure AIR-1.	See Mitigation Measure AIR-1					
AIR-3b: Implement Mitigation Measure AIR-2.	See Mitigation Measure AIR-2					
IV. BIOLOGICAL RESOURCES						
<p>BIO-1: Prior to construction, the District shall prepare and submit a Notification of Lake or Streambed Alteration application package (Form FG2023) to the California Department of Fish and Game (CDFG) for working within the riparian corridor of the Rheem Creek tributary. The application shall include a Riparian Restoration Plan prepared by a qualified restoration ecologist for any vegetation removal within the riparian corridor. This plan shall be reviewed and approved by the District. The amount of riparian vegetation trimmed, removed, or disturbed shall be kept to a minimum.</p>	Submit a Notification of Lake or Streambed Alteration application package prior to construction of bridges	Contra Costa Community College District	Contra Costa Community College District	Verify that Notification of Lake or Streambed Alteration application package is submitted to California Department of Fish and Game	Prior to construction	<i>Name:</i> <i>Date:</i>

Recommended Mitigation Measures	Action and Implementation Timing	Party Responsible for Implementing Mitigation	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing	Verification of Compliance Name/Date
<p>BIO-2a: To determine the extent of Corps jurisdiction at the proposed bridge locations, a qualified wetland scientist shall delineate waters of the U.S. in areas where bridges would be constructed using Corps methodology. The delineation shall be verified by the Corps.</p>	<p>Delineate waters of the U.S. in areas where bridges would be constructed using Corps methodology prior to construction of bridges</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Submit the delineation to the Corps for verification</p>	<p>Prior to construction</p>	<p>Name: Date:</p>
<p><i>BIO-2 Continued</i> BIO-2b: The District shall obtain the appropriate federal and State permits for any construction activities and/or structures located below the OHWM of Rheem Creek and/or its tributary. Assuming that the total area impacted would be less than 0.5 acre (21,780 square feet), construction of the pedestrian bridges would likely qualify for authorization under Nationwide Permit (NWP) 14 (Linear Transportation Projects), which regulates “activities required for the construction, expansion, modification, or improvement of linear transportation crossings (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the U.S...”</p>	<p>Obtain the appropriate federal and State permits for any construction activities located below OHWM of Rheem Creek prior to construction</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that appropriate federal and State permits are received</p>	<p>Prior to construction</p>	<p>Name: Date:</p>

Recommended Mitigation Measures	Action and Implementation Timing	Party Responsible for Implementing Mitigation	Party Responsible for Monitoring	Action by Monitor	Monitoring Timing	Verification of Compliance Name/Date
<p>BIO-3: If feasible, all vegetation removal shall be conducted during the non-breeding season (i.e., August 1 to February 28) to avoid direct impacts to nesting birds. If such work is scheduled during the breeding season, a qualified ornithologist shall conduct a pre-construction survey to determine if any birds are nesting in the vegetation to be removed. The pre-construction survey shall be conducted within 15 days prior to the start of work from March through May (since there is higher potential for birds to</p>	<p>Restrict vegetation removal activities to the period from August 1 to February 28. If not possible, have a qualified ornithologist create a buffer around nests in which no work shall be allowed until the young have successfully fledged prior to construction</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that construction is not taking place during breeding season, or ensure a proper buffer is created for nesting birds</p>	<p>Prior to construction</p>	<p>Name: Date:</p>
<p>BIO-3Continued initiate nesting during this period), and within 30 days prior to the start of work from June through July. If active nests are found during the survey, the biologist shall determine an appropriately sized buffer around the nest in which no work shall be allowed until the young have successfully fledged. The size of the nest buffer shall be determined by the biologist in consultation with the CDFG, and shall be based on the nesting species, its sensitivity to disturbance, and the expected types of disturbance.</p>						

V. CULTURAL RESOURCES						
<p>CULT-1: The Contra Costa Community College District shall inform its contractor(s) of the sensitivity of the project area for archaeological resources by including the following directive in contract documents: “If prehistoric or historical archaeological deposits are discovered during project activities, all work within 25 feet of the discovery shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the</p>	<p>1. Include the directive described in Mitigation Measure CULT-1 in contract documents</p> <p>2. Evaluate any archaeological resources discovered during project construction as described in CULT-1 and submit report of findings to the District and the NWIC</p>	<p>1. Contra Costa Community College District</p> <p>2. Construction contractor</p>	<p>1. Contra Costa Community College District</p> <p>2. Contra Costa Community College District</p>	<p>1. Verify that the appropriate language has been incorporated in contract documents</p> <p>2. Visit project site and verify that measures are being implemented and that any reports are submitted to the NWIC</p>	<p>1. Before grading begins</p> <p>2. During project construction</p>	<p><i>Name:</i></p> <p><i>Date:</i></p>
<p>CULT-1 Continued</p> <p>discovery. Project personnel should not collect or move any archaeological materials or human remains and associated materials. Archaeological resources can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone-milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.”</p> <p>The Contra Costa Community College District shall verify that the language has been included in the contract documents.</p>						

<p><i>CULT-1 Continued</i></p> <p>Adverse effects to archaeological deposits should be avoided by project activities. If such deposits cannot be avoided, they shall be evaluated for their California Register of Historical Resources eligibility to determine if such deposits qualify as "historical resources" under CEQA (CCR Section 15064.5(c)(1)). If the deposit is not eligible, a determination shall be made as to whether it qualifies as a "unique archaeological resource" under CEQA. If the deposit is neither a historical nor unique archaeological resource, avoidance is not necessary. If the deposit is eligible to the California Register, or is a unique archaeological resource, it will need to be avoided by adverse effects or such effects must be mitigated. Mitigation may consist of, but is not necessarily limited to, systematic recovery and analysis of archaeological deposits; recording the resource; preparation of a report of findings; and accessioning recovered archaeological materials at an appropriate curation facility. Public educational outreach may also be appropriate. Upon completion of the assessment, the archaeologist shall prepare a report documenting the assessment methods and results, and provide recommendations for the treatment of the archaeological materials discovered. The report shall be submitted to the Contra Costa Community College District and the Northwest Information Center.</p>						
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<p>CULT-2: A qualified paleontologist shall monitor initial project ground-disturbing activities. The paleontologist can then determine whether further monitoring, periodic site reviews, or no further monitoring is appropriate. Paleontological monitoring shall include inspection of mechanically exposed, paleontologically sensitive geological formations underlying the project site. Samples of matrix shall be collected for processing, sorting, and microscopic examination to determine if microfossils are present within exposed geological formations. If paleontological resources are discovered during project activities, all work within 25 feet of the discovery shall be redirected until the paleontological monitor has assessed the situation and made recommendations regarding their treatment. It is recommended that adverse effects to paleontological resources be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. Paleontological resources are considered significant if they possess the possibility of providing new information regarding past life forms, paleoecology, stratigraphy, and geological formation processes. If the resources are not significant, avoidance is not necessary. If the resources are significant, they must be avoided by adverse effects, or such effects must be mitigated. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, a technical data recovery report, and accessioning the fossil material and technical report to a paleontological repository. Public educational outreach may also be appropriate.</p>	<p>1. Have a paleontologist monitor project ground-disturbing activities prior to construction</p> <p>2. Evaluate any paleontological resources discovered during project construction as described in CULT-2 and submit report of findings to the District and a paleontological repository</p>	<p>1. Contra Costa Community College District</p> <p>2. Construction contractor</p>	<p>1. Contra Costa Community College District</p> <p>2. Contra Costa Community College District</p>	<p>1. Verify that the appropriate language has been incorporated in contract documents</p> <p>2. Visit project site and verify that measures are being implemented and that any reports are submitted to a paleontological repository</p>	<p>1. Before grading begins</p> <p>2. During project construction</p>	<p><i>Name:</i></p> <p><i>Date:</i></p>
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<p><i>CULT-2 Continued</i></p> <p>Upon completion of the paleontological monitoring, a report of findings with an appended, itemized inventory of specimens—as appropriate—should be prepared and submitted to an appropriate repository, such as the University of California Museum of Paleontology.</p>						
<p>CULT-3: If human remains are encountered, these remains shall be treated in accordance with Health and Safety Code Section 7050.5. The Contra Costa College District shall inform its contractor(s) of the cultural sensitivity of the project area for human remains by including the following directive in contract documents: “If human remains are encountered during project activities, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.”</p>	<ol style="list-style-type: none"> 1. Include the directive described in Mitigation Measure CULT-3 in contract documents 2. Stop work within 25 feet of human remains discovered during project construction; prepare and submit report of findings to the District and NWIC. 	<ol style="list-style-type: none"> 1. Contra Costa Community College District 2. Construction contractor 	<ol style="list-style-type: none"> 1. Contra Costa Community College District 2. Contra Costa Community College District 	<ol style="list-style-type: none"> 1. Verify that the appropriate language has been incorporated in contract documents 2. Visit project site and verify that measures are being implemented and that any reports are submitted to NWIC 	<ol style="list-style-type: none"> 1. Before grading begins 2. During project construction 	<p><i>Name:</i></p> <p><i>Date:</i></p>

<p>CULT-3 <i>Continued</i> The Contra Costa Community College District shall verify that the language has been included in the contract documents. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the Contra Costa Community College District and the Northwest Information Center.</p>						
<p>VI. GEOLOGY AND SOILS</p>						
<p>GEO-1a: Prior to construction, a subsurface fault investigation shall be performed by a Certified Engineering Geologist or Geotechnical Engineer to identify potentially active fault traces within the footprint of proposed structures intended for human occupancy and 50 feet beyond. All future structures used or intended for supporting or sheltering humans for more than 2,000 person-hours per year shall be setback at least 50 feet from active faults, unless it is proven that there are no active branches of that fault in accordance with Section 3603 (d) of Appendix B of Special Report 42. In no case shall a structure for human habitation be constructed so as to cross the trace of an active fault. CCCCDC Facilities staff and the Division of the State Architect (DSA) shall review the findings and recommendations of the subsurface fault investigation and verify that the project design has implemented appropriate setbacks from faults based on those findings prior to DSA project approval.</p>	<p>Complete a subsurface fault investigation prior to construction</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that subsurface fault investigation is completed</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>

<p>GEO-1b: The design of project improvements, including sidewalks, parking lots, and subsurface utilities, shall consider the potentially active and active fault traces and incorporate measures to ensure that potential damage due to rupture is minimized; utility (electricity, natural gas, telecommunications, water, sewer) crossings at potentially active and active fault traces shall be engineered with flexible connections or an equally effective alternate engineered solution so as to minimize damage from seismic activity and in accordance with the recommendations of subsection F of Appendix C of Special Publication 42. CCCC Facilities staff and the DSA shall review and approve the design of project improvements and utilities prior to DSA project approval.</p>	<p>Consider the potentially active and active fault traces and incorporate measures to ensure damage due to rupture is minimized prior to construction</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify with DSA that design measures minimize potential damage from rupture</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>GEO-2: Prior to construction, a geotechnical investigation shall be performed by a Certified Engineering Geologist or Geotechnical Engineer to identify potential liquefiable sediments southwest of and adjacent to Rheem Creek. If liquefiable sediments are identified at the project site, the District shall implement appropriate grading, drainage, and foundation design elements recommended by a Certified Engineering Geologist or Geotechnical Engineer and approved by the DSA to reduce the potential impact from liquefaction.</p>	<p>Perform a geotechnical investigation to identify potential liquefiable sediments by Rheem Creek</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that geotechnical investigation is completed</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>GEO-3: A geotechnical investigation shall be performed by a Certified Engineering Geologist or Geotechnical Engineer to evaluate slope stability along the hillside portion of the project side. If slopes susceptible to seismic failure are identified at the project site, the District shall implement appropriate slope grading, drainage, and reinforcements as recommended by a Certified Engineering Geologist or Geotechnical Engineer and approved by the DSA to reduce the potential impact from slope failure.</p>	<p>Perform a geotechnical investigation to evaluate slope stability along the hillside portion of the project site</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that geotechnical investigation is completed</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>GEO-4: Implement Mitigation Measure HYD-1.</p>	<p>See Mitigation Measure HYD-1.</p>					

<p>GEO-5: Prior to construction, a geotechnical investigation shall be performed by a Certified Engineering Geologist or Geotechnical Engineer and the resulting report shall include evaluation of dynamic compaction potential at the project site. If soils susceptible to dynamic compaction are present the project site, the District shall implement proper grading and compaction measures as recommended in the final report and approved by the DSA to reduce the potential impacts from dynamic compaction to a less-than-significant level.</p>	<p>Perform a geotechnical investigation to identify the dynamic compaction potential at the project site</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that geotechnical investigation was completed</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>GEO-6a: The District shall incorporate all recommendations of a final site-specific design-level geotechnical investigation as prepared by a Certified Engineering Geologist or Geotechnical Engineer into all development plans submitted for the project, including recommendations for grading, placement of fill materials, pretreatment of expansive soils, and avoidance of settlement and/or differential settlement of infrastructure and buildings.</p>	<p>Incorporate recommendations from geotechnical investigations into development plans</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that recommendations from geotechnical investigations are incorporated into all development plans</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>GEO-6b: The District shall incorporate all recommendations of a final site-specific design-level geotechnical investigation as prepared by a Certified Engineering Geologist or Geotechnical Engineer into all development plans submitted for the project, including recommendations to protect iron, steel, metal and concrete from deterioration caused by contact with corrosive soils.</p>	<p>Incorporate recommendations from geotechnical investigations into development plans</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that recommendations from geotechnical investigations are incorporated into all development plans</p>	<p>Prior to construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>VII. HAZARDS AND HAZARDOUS MATERIALS</p>						
<p>HAZ-1a: Prior to demolition of structures on the site, a comprehensive lead-based paint survey shall be conducted. If any lead-based paint is identified, it shall be removed from the site in accordance with all applicable regulations, including Occupational Safety and Health Administration (OSHA) guidelines. The District shall verify that the survey has been conducted before beginning demolition of the buildings.</p>	<p>Complete a lead-based paint survey as described in Mitigation Measure HAZ-1a</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that the survey has been conducted</p>	<p>Before demolition begins</p>	<p><i>Name:</i> <i>Date:</i></p>

<p><u>HAZ-1b</u>: Prior to demolition of structures on the site, a complete Asbestos Hazard Emergency Response Act-Level Pre-Demolition Asbestos Survey shall be conducted. If asbestos is identified, a licensed asbestos abatement contractor shall be retained to abate identified asbestos-containing material in accordance with all applicable regulations. The District shall verify that the survey has been conducted before beginning demolition of the buildings.</p>	<p>Complete an asbestos survey as described in Mitigation Measure HAZ-1b</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that the survey has been conducted</p>	<p>Before demolition begins</p>	<p><i>Name:</i> <i>Date:</i></p>
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VIII. HYDROLOGY AND WATER QUALITY

<p>HYD-1: As a condition of approval of the project plans, the District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential impacts to surface water quality through the construction and operational periods of the project including all on- and off-site improvements. The SWPPP shall be submitted for approval to the Facilities Division of the CCCCD and Division of the State Architect prior to issuance of project approvals. The SWPPP shall be maintained on-site and made available to Water Board staff upon request. The SWPPP shall include specific and detailed BMPs designed to mitigate construction-related and operational period pollutants.</p> <p><i>Construction Period:</i> At a minimum, BMPs shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain.</p> <p>An important component of the stormwater quality protection effort is the knowledge of the site supervisors and workers. To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.</p>	<p>Facilities Division of the District shall prepare and the Division of the State Architect shall approve a SWPPP that includes requirements listed in HYD-1</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that the SWPPP has been prepared</p>	<p>Before construction begins</p>	<p><i>Name:</i> <i>Date:</i></p>
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<p>HYD-1 Continued</p> <p>The SWPPP shall include operational-period BMPs that would result in treatment of an appropriate percentage of the runoff from the project including all on- and off-site improvements. The SWPPP shall include as many LID BMPs as feasible. CCCC Facilities staff and the Division of the State Architect shall review and approve the SWPPP, including operational period BMPs, prior to approval of the project plans.</p>						
<p>HYD-2: Implement Mitigation Measure HYD-1.</p>		<p>See Mitigation Measure HYD-1.</p>				
<p>HYD-3: During design development and prior to construction of the bridges, a qualified engineering professional shall design the foundations and support structures for the proposed prefabricated pedestrian bridge(s) in such a way as to span the creek(s) from outside the 'top-of-bank' points of the stream banks, or:</p> <p>A Location Hydraulic Study (LHS) shall be prepared showing that any appurtenance structures required for the bridges will not exacerbate flooding up or downstream of the project site, result in bank or bottom scour, or accelerate bank erosion and result in degradation of water quality from creek damage.</p>	<p>Prepare a Location Hydraulic Study during project design</p>	<p>Contra Costa Community College District</p>	<p>Contra Costa Community College District</p>	<p>Verify that the Location Hydraulic Study has been prepared and the results considered in the project design</p>	<p>Before construction begins</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>HYD-4: Implement Mitigation Measure HYD-1.</p>		<p>See Mitigation Measure HYD-1.</p>				
<p>XI. NOISE</p>						
<p>NOISE-1: The project shall implement the following noise reduction measures:</p> <ul style="list-style-type: none"> • The District shall coordinate with the CCC campus administration and the construction contractor to schedule loud construction activities to less sensitive time periods. • All heavy construction equipment used on the project site shall be maintained in good operating condition, with all internal combustion, engine-driven equipment fitted with intake and exhaust mufflers that are in good condition. 	<p>Implement the noise-reducing measures described in Mitigation Measure NOISE-1</p>	<p>Construction contractor</p>	<p>Contra Costa Community College District</p>	<p>Visit project site and verify that noise control measures are being implemented</p>	<p>During project construction</p>	<p><i>Name:</i> <i>Date:</i></p>
<p>NOISE-2: Implement Mitigation Measure NOISE-1.</p>		<p>See Mitigation Measure NOISE-1.</p>				

PART 2 – PRODUCTS - Not Used.

PART 3 – EXECUTION - Not Used.

END OF SECTION 01 41 50

SECTION 01 41 60
SPECIAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01290 – “Payment Procedures”
- C. Section 01330 – “Submittal Procedures”
- D. Section 01740 – “Warranties and Guaranties”
- E. Section 01780 – “Project Record Documents”
- F. Section 01820 – “Demonstration and Training”
- G. Divisions 2 through 33 Sections for Contract Closeout Procedure requirements for the work in those Sections.

1.3 SUMMARY

- A. In Compliance with CEQA requirements, the District conducted an Initial Study to ascertain if the project may have an effect on the environment. The Initial Study identified potential impacts on the environment. However, all potential impacts of the proposed Project can be avoided or reduced to a less-than-significant level by implementation of the following mitigation measures. Design Builder shall conform with the following mitigation measures, including but not limited to, the following:
 - 1. Noise Control Plan
 - 2. Dust Control Plan
 - 3. Traffic Control Plan
 - 4. Spill Prevention, Control and Countermeasure Program
 - 5. Tree Protection Plan
 - 6. Migratory Bird Protection Plan
 - 7. Cultural Resources Protection Plan
- B. In no case shall the restrictions identified in this Section limit the Design Builder's responsibility for compliance with all Federal, state, and local safety ordinances and regulations.

1.4 NOISE CONTROL

- A. Definitions

1. Noise is any audible sound which has the potential to annoy or disturb humans, or to cause an adverse psychological or physiological effect on humans.
 2. Daytime refers to the period from 7 AM to 7 PM local time daily, except Sundays and Federal holidays.
 3. Evening refers to the period from 7 PM to 10 PM local time daily, except Sundays and Federal holidays.
 4. Nighttime refers to the period from 10 PM to 7 AM local time daily, as well as all day Sunday and Federal holidays.
 5. Nuisance Noise refers to sound levels that annoy or disturb a reasonable person of normal sensitivities, but do not exceed the noise limits specified herein.
 6. Lot-line refers to the line separating the campus from another parcel or from the street.
 7. Background Noise shall be defined as the measured ambient noise level associated with all existing environmental, transportation, and community noise sources in the absence of any audible construction activity.
 8. dBA shall be defined as the sound level (in decibels referenced to 20 micro-pascals) as measured using the A-weighting network on a sound level meter, in accordance with ANSI S1.4 Standards.
 9. Lmax shall be defined as the maximum measured sound level at any instant in time.
 10. Leq shall be defined as the equivalent sound level, or the continuous sound level that represents the same sound energy as the varying sound levels, over a specified monitoring period.
 11. L10 shall be defined as the sound level exceeded 10 percent of the time for a specified monitoring period.
 12. Slow specifies a time constant or 1 second for the root-mean-square (RMS) detector used by a sound level meter, in accordance with ANSI S1.4 Standards.
 13. Impact noise is noise produced from impact or devices with discernible separation in sound pressure maxima. Examples for impact equipment include, but are not limited to; blasting, clam shovel or chisel drops, pavement breakers, jackhammers, hoe rams, mounted impact hammers, and impact pile drivers (but not vibratory pile drivers).
- B. The intent of this Section is to minimize construction noise within construction areas, lay-down areas, and communities adjacent to the construction site. To this end, the Design Builder and all subcontractors, suppliers, and vendors, are required to comply with all applicable noise regulations, specification requirements, and the noise level limits specified herein.
 - C. The Design Builder shall use equipment with efficient noise-suppression devices and employ other noise abatement measures such as enclosures and barriers necessary for the protection of the public, as necessary.
 - D. The Design Builder shall schedule and conduct operations in a manner that will minimize, to the greatest extent feasible, the disturbance to the public in areas adjacent to the Work and to occupants of buildings in the vicinity of the Work.
 - E. After the Preconstruction Meeting and prior to the commencement of the Work at the Site, Design Builder shall submit a Noise Control and Monitoring Plan for review and acceptance by the District.

1. The Noise Control and Monitoring Plan shall describe the noise monitoring and reporting procedure to be used during construction, the procedures for predicting construction noise levels prior to performing construction activities, and describe the noise reduction measures required to meet the noise level limitations and minimize nuisance noise conditions. Noise generating equipment shall not be operated prior to acceptance of the Noise Control and Monitoring Plan.
 2. The Noise Control and Monitoring Plan shall identify and describe the following in detail:
 - a. The receptor locations where noise monitoring will be performed. Include a site plan showing all locations.
 - b. The type of noise level measurement device that will be used.
 - c. The noise monitoring methods and procedures that will be used.
 - d. The data reporting method that will be used.
 - e. The response procedure and actions to be taken by the Design Builder for any lot-line, educational facility, or equipment noise level that exceeds the noise limits specified in this Section. The response procedure may include, but not be limited to, use of additional noise reduction materials and equipment.
 - f. The noise complaint response and resolution procedures.
 - g. A description of the anticipated significant noise generating construction activities.
 - h. An inventory of construction equipment to be utilized and the associated noise levels for each.
- F. Submit a current laboratory calibration conformance certificate for the noise monitoring equipment to be used prior to performing any noise level monitoring. Submit updated certificates following subsequent yearly calibrations, or upon completion of repairs to the instrument, for the duration of this Contract.
- G. Noise Control Measures: Design Builder shall implement the following noise-control measures to reduce and control noise generated from construction, demolition, and construction related activities:
1. Restrict noise-producing construction activities Monday through Friday between the hours of 7:00am to 3:30pm, or until 5:30pm with city engineers approval. Saturday from 8:00am to 5:00pm with city engineers approval. Construction on Sundays shall be avoided, if possible, and there will be no construction on public holidays without prior written request submitted to and written approval returned by the District, at its sole discretion. A decision by the District to deny Sunday or holiday work shall not be deemed to cause a delay in the Contract Time. When activities must occur outside the hours specified above, conform with notification requirements of this Section and utilize local barriers around equipment and other noise attenuating devices if necessary to limit noise to acceptable levels.
 2. Comply with all City of Pleasant Hill requirements regarding both allowable hours of Work and noise level limitations.
 3. Design Builder shall comply with applicable regulatory requirements for the operation of powered construction equipment during all phases of construction.
 4. All construction equipment shall have appropriate mufflers, intake silencers, and other required noise-control features, shall be properly maintained and in compliance with State standards.

5. Vehicles and other gas or diesel powered equipment shall be prohibited from unnecessary warming up, idling, and engine revving.
 6. Impact tools shall utilize “quiet technology” to minimize noise.
 7. Design Builder shall provide and post signs at the Site giving the name and telephone number or e-mail address of the District and/or designated College Representative whom the public should contact regarding any noise complaints. If necessary due to complaints, Design Builder shall provide additional noise-attenuating measures such as additional mufflers or engine shrouding.
- H. Secure written permission from the District at least three (3) working days prior to using noisy and vibratory equipment, such as jackhammers, concrete saws, impact tools, and high frequency electrical equipment. Cooperate with District if the use of noisy equipment becomes objectionable to college employees and/or students
- I. The work must be conducted so that nearby residents will not be disturbed at any time during the Work including, but not limited to, the following requirements:
1. The Design Builder shall perform all work within the permissible noise levels, day of week, or weekend and hour of day limitations, and within the guidelines established by applicable federal, state, and municipal codes, regulations, laws, and standards.
 2. During the Work, the Design Builder shall ensure that all noise generated from construction-related equipment and construction activity complies with applicable Contra Costa County and City of Pleasant Hill noise standards and thresholds where technically feasible. Noise standards and thresholds of Contra Costa County and City of Pleasant Hill are therefore included, by reference, in the Design Builder’s contract.
 3. In the event of complaints from nearby residents or the campus community, the Design Builder shall measure noise levels at adjacent residential lot lines. In the event that construction noise exceeds the specified limits, the responsible construction activity shall cease until appropriate noise control measures are implemented. In the event that the measured noise level exceeds allowable limits as specified in this Section, or is resulting in nuisance conditions, the Design Builder shall immediately alter operations or use noise reduction materials and methods to reduce noise levels or to alleviate the nuisance conditions.
 4. Do not use loud vocal or mechanical signals. Use of outside speakers, loud radios and similar devices are prohibited.
 5. Not Used.
 6. Work shall be performed in a manner to prevent nuisance conditions such as noise which exhibits a specific audible frequency or tone (e.g., backup alarms, poorly maintained equipment, brake squeal, etc.) or impact noise (e.g., jackhammers, hoe rams). The District will make any final interpretation concerning whether or not nuisance noise conditions exist. Only the District representatives and specifically designated College representatives have the authority to stop the Work until nuisance noise conditions are resolved, without additional Contract Time or compensation for the Design Builder.

1.5 DUST CONTROL PLAN

- A. Design Builder shall develop and submit, in accordance with Section 01330, a Dust Control Plan, and implement dust control measures to protect air quality during construction to control dust

emissions generated during construction, implement the following Bay Area Air Quality Management District (BAAQMD) measures for construction emissions of particulate matter over 10 microns in size (PM10):

1. Water all active construction areas at least twice daily.
2. Cover all trucks hauling soil, sand and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
3. Apply water three times daily or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at the Site.
4. Sweep driveways and adjacent public streets daily (with water sweepers) if visible soil materials have been carried onto adjacent public streets.
5. Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour.
6. Limit speed of vehicles to 10 miles per hour or less on the Site.
7. If Campus or neighborhood complaints regarding objectionable dust are received by the College, the Design Builder shall take immediately action to abate such conditions.

1.6 TRAFFIC CONTROL PLAN

- A. Design Builder shall develop and submit a Traffic Control Plan, and implement the traffic control plan to minimize the effects of construction traffic on the Campus and surrounding residential areas, as appropriate. Submit the plan in accordance with Section 01330 to the District for review and approval.
- B. The Construction traffic control plan will include, at a minimum, the following requirements:
 1. Provide clearly marked pedestrian detours if any sidewalk or pedestrian walkway closures are necessary. Provide clear directional signage as required.
 2. Provide clearly marked bicycle detours if bicycle routes must be closed, or if bicyclist safety would be otherwise compromised. Provide clear signage as required.
 3. Provide crossing guards and/or flag persons as needed to avoid traffic conflicts and ensure both pedestrian and bicyclist safety at all times.
 4. Use nonskid traffic plates over open trenches to minimize hazard.
 5. Locate all stationary equipment as far away as possible from areas used heavily by vehicles, bicyclists and pedestrians.
 6. Notify and consult with emergency service providers, including the Campus Police Department, and maintain clear, unobstructed access by whatever means necessary to expedite and facilitate the passage of emergency vehicles.
 7. Obtain City of Pleasant Hill approval for preferred construction traffic routing over public streets, location of temporary curb cuts, if any, and/or other construction traffic access and egress from public streets to the Site. Consult with District concerning preferred construction traffic routing prior to requesting City approval. Design Builder shall be responsible for obtaining any required permits and for all associated costs.
 8. Avoid routing construction traffic through residential areas to the extent feasible. Prohibit mobilization and demobilization of heavy construction equipment during AM and PM peak traffic hours, and pursuant to City of Pleasant Hill requirements.

9. Provide access for drive ways and private roads outside the immediate construction zone by using steel plates or temporary backfill as necessary.
 10. Prohibit construction worker parking in student parking lots and in residential areas.
- C. Design Builder shall notify the District, Project Inspector, Campus Police Department, city and county agencies, as applicable, a minimum of five (5) working days in advance of performing work which necessitates closing or interfering with traffic on public thoroughfares, parking areas, driveways and walks. Obtain written permission prior to effecting such closures and interruptions.
- D. The District will designate an entrance to the Site for the Design Builder's use for the Work.

1.7 SPILL PREVENTION, CONTROL AND COUNTERMEASURE PROGRAM

- A. Design Builder shall prepare and implement a Spill Prevention, Control and Countermeasure Program (SPCCP) to minimize the potential for and effects from spills of hazardous, toxic or petroleum substances during construction and demolition activities. Submit a SPCCP Plan to the District in accordance with Section 01330 and obtain approval of the SPCCP before any construction or demolition activities begin at the Site.
- B. Design Builder shall routinely inspect the construction area to verify that the measures specified in the SPCCP are properly implemented and maintained. Inform the District immediately if there is a noncompliance issue and take immediate measures to restore compliance.
- C. The federal reportable spill quantity for petroleum products, as defined in 40 CFR 110, is any oil spill that includes any of the following:
1. Violates applicable water quality standards.
 2. Causes a film or sheen on or discoloration of the water surface or adjoining shoreline.
 3. Causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.
- D. If a spill is reportable, notify the District's Representative and take action to contact appropriate safety and clean-up crews to ensure that the SPCCP is followed.
1. A written description of reportable releases must be submitted to the District's Representative and to the San Francisco Bay Regional Water Quality Control Board (RWQCB). This submittal must contain a description of the spill, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred and a description of the steps taken to prevent and control future releases. Document the releases on a spill report form.
 2. If a reportable spill has occurred and results determine that project activities have adversely affected surface water or groundwater quality, the District will engage a registered environmental assessor at Design Builder's expense for a detailed analysis to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination.
 3. Based on this analysis, the Design Builder shall select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the District.

1.8 TREE PROTECTION PLAN

- A. Develop and submit a Tree Protection Plan to the District in accordance with Section 01330 and obtain approval prior to Start or Work on site. The plan shall include full-size drawings of the Site and indicate all trees that may be impacted by the Work, and all trees that will require proactive protection from damage. Protective measures must be indicated in the plan and on the Drawings.
- B. Definitions:
 - 1. Dripline: The area on the ground from the trunk of any tree to the point directly below the outermost tips of the foliage of that tree.
 - 2. Root Protection Zone ("RPZ"): The areas enclosed with tree protection fencing as designated on the Drawing(s).
 - 3. Tree damage: Tree damage shall include, but not limited to, the following: Significant injury to the root system or other parts of a tree including burning, application of toxic substances, damaging through contact with equipment or machinery, changing the natural grade within the Dripline or RPZ, compacting the soil within the Dripline or RPZ, interfering with the normal water requirements of the tree, unauthorized trenching or excavating within the Dripline or RPZ, or unauthorized removal of more than 1/3 of the live wood, foliage or roots.
- C. Root Protection: No storage of materials or equipment will be allowed within the Dripline. Whenever possible, excavation shall be on a radial line, diverging from the tree trunk. For items of Work delayed materially beyond the date of Substantial Completion, provide update submittal within 14 Days after acceptance, listing date of acceptance as start of warranty period.
- D. Exposure to harmful substances: No storage or dumping of any substances that may be harmful to trees shall occur at any location on the Site.
- E. Where construction is to be performed in the vicinity of trees and shrubbery, the Work shall be carried on in a manner that will cause minimum damage. District will designate trees that are to be removed. Under no circumstances are additional trees to be removed without written permission from District. Trees and shrubbery that are not to be removed shall be protected from injury or damage resulting from Design Builder's operations.
- F. Any tree that is removed without District's permission or is irreparably damaged, in the opinion of District, shall cost Design Builder in damages [\$100.00] per square inch of cross section, measured at 4 ½ feet above ground, but not less than [\$250.00], such cost to be deducted from monies due or to become due under the Contract. If tree protection is not performed or is not performed adequately and District determines that a tree has been irreparably damaged, Design Builder shall pay the same amount of damages as for unauthorized removal of a tree. Design Builder shall immediately report all tree damage to District, so that District may determine applicable damages.

1.9 MIGRATORY BIRD PROTECTION

- A. Conduct tree removal and building demolition outside of the migratory bird nesting season. The bird nesting season for migratory birds in this part of California is March 1st through July 31. See Section 01415, Table 1, Section IV, Biological Resources for more information on the bird nesting season.

- B. If tree removal or building demolition must take place during the bird nesting season, these activities shall be preceded by a survey paid for by the District for nesting migratory birds by a certified Wildlife Biologist in the State of California. If bird nests are discovered in the trees or on the buildings, they shall not be removed while the nest(s) are active. Design Builder shall plan and schedule to remove all trees and buildings during the non-bird nesting season, which is between August 1st and February 28th each year to avoid the need for such activities during the bird nesting season. Any delays as result of tree or building removal that could not occur during the bird nesting season due to active nests are the responsibility of the Design Builder if said delays were within the control of the Design Builder by performing the work in the non-bird nesting season.

1.10 CULTURAL RESOURCES PROTECTION PLAN

- A. Develop and submit a Cultural Resources Protection Plan in accordance with Section 01330. If buried cultural resources, such as chipped or ground stone, historic debris, building foundations or human bones or paleontological resources are discovered inadvertently during ground-disturbing activities, Design Builder shall avoid any further disturbance of the materials and immediately discontinue earthwork within 100 feet of the find. Design Builder shall notify District’s Representative immediately upon encountering cultural resources. Design Builder shall be prepared to move on to another location or phase of work, allowing sufficient time for District’s Representative to evaluate the nature and significance of the find and implement appropriate management procedures.
- B. In the event that prehistoric human remains are encountered, further excavation or disturbance of the site shall cease immediately, pursuant to Health and Safety Code 7050.5. Design Builder shall notify District’s Representative immediately upon encountering human remains. Design Builder shall move on to another location or phase of Work to allow proper assessment of the situation.
- C. If human remains of Native American origin are discovered during construction, it will be necessary to comply with State laws relating to the disposition of Native American burials, which fall under the jurisdiction of the NAHC (Public Resources Code (PRC) Section 5097. Consequently, if any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent human remains:
 - 1. Until the Contra Costa County Coroner has been informed and has determined that no investigation of the cause of death is required;
 - 2. If the remains are of Native American origin;
 - a. The descendants of the deceased Native American(s) have made a recommendation to the landowner or the person responsible for the excavation work regarding means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 or
 - b. The NAHC has been unable to identify a descendent or the descendent failed to make a recommendation within 24 hours after being notified by the NAHC.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION
Not Used.

END OF SECTION 01 41 60

REFERENCES

PART 1 - GENERAL

1.1 SUMMARY

- 1.1.1 This section includes reference standards, abbreviations, symbols and definitions used in the Contract Documents.
- 1.1.2 Material and workmanship specified by reference to number, symbol, or title of specific standard such as state standard, commercial standard, federal specifications, technical society, or trade association standard, or other similar standard shall comply with requirements of standards except when more rigid requirements are specified or required by applicable codes.
- 1.1.3 Standards referred to, except as modified herein, shall have full force and effect as though printed in the Contract Documents. Standards are not furnished to the Design Builder, since manufacturers and trades involved are assumed to be familiar with their requirements.

1.2 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES; REPORTING AND RESOLVING DISCREPANCIES

- 1.2.1 References to standards, specifications, manuals, or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or laws or regulations in effect at the time of opening of Proposals, except as may be otherwise specifically stated in the Contract Documents.
- 1.2.2 If during the performance of the Work, Design Builder discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any supplier, report it in writing at once by submitting an RFI to District, and await District's instructions before proceeding.
- 1.2.3 Except as otherwise specifically stated in the Contract Documents or as may be provided by Change Order, RFP, CCD, or Supplemental Instruction, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - 1.2.3.1 The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - 1.2.3.2 The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).

- 1.2.4 No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of District or Design Builder or any of Design Builder's consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to District or any of its consultants, agents, representatives or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.
- 1.2.5 Comply with the applicable portions of standards and specifications published by the technical societies, institutions, associations, and governmental agencies referred to in the Contract Documents.
 - 1.2.5.1 Comply with referenced standards and specifications; latest revision in effect at the time of opening of Proposals, unless otherwise identified by date.
 - 1.2.5.1.1 Exception: Comply with issues in effect as listed in governing legal requirements.
- 1.2.6 Referenced Grades, Classes, and Types: Where an alternative or optional grade, class, or type of product or execution is included in a reference but is not identified in Drawings or in Specifications, provide the highest, best, and greatest of the alternatives or options for the intended use and prevailing conditions.
- 1.2.7 Jobsite Copies:
 - 1.2.7.1 Obtain and maintain at the Site copies of reference standards identified on Drawings and in Specifications in order to properly execute the Work.
 - 1.2.7.2 At a minimum, the following shall be readily available at the Site:
 - 1.2.7.2.1 Safety Codes: State of California, Division of Industrial Safety regulations.
- 1.2.8 Edition Date of References:
 - 1.2.8.1 When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date of opening Proposals.
 - 1.2.8.2 All amendments, changes, errata and supplements as of the effective date shall be included.
- 1.2.9 ASTM and ANSI References: Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the Drawings and Specifications by abbreviation and number only and may not be further identified by title, date, revision, or amendment. It is presumed that Design Builder is familiar with and has access to these nationally- and industry-recognized specifications and standards.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

ABBREVIATIONS**PART 1 - GENERAL**

1.1 Listed hereinafter are the various organizations or references which may appear in the Contract Documents, along with their respective acronyms and/or abbreviations:

AA	Aluminum Association
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AAP	Affirmative Action Program
AASHTO	American Association of State Highway and Transportation Officials
ABMA	American Boiler Manufacturers Association
ABPA	American Board Products Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
ADAAG	Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities
AECOM	AECOM (Program Manager)
AED	Association of Equipment Distributors
AGA	American Gas Association
AGC	Association of General Contractors
AHJ	Authorities Having Jurisdiction
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute (formerly American Standards Association)
APA	American Plywood Association
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWCI	Association of the Wall and Ceiling Industries
AWI	American Woodwork Institute
AWPA	American Wood- Preservers Association
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BIL	Basic Insulation Level
BIM	Building Information Modeling
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	State of California, Department of Transportation
CBC	California Building Code
CCD	Construction Change Directive
CCR	California Code of Regulations
CEC	California Electric Code
CFR	Code of Federal Regulations
CGA	Compressed Gas Association

CISPI	Cast Iron Soil Pipe Institute
CLMFI	Chain Link Fence Manufacturers Institute
CMC	California Mechanical Code
CO	Change Order
CPC	California Plumbing Code
CPM	Critical Path Method
CPUC	California Public Utilities Commission
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards, U.S. Department of Commerce
CSA	Canadian Standards Association
CTI	Ceramic Tile Institute
DB	Design Build
DBE	Design Build Entity
DHI	Door and Hardware Institute
DSA	Division of State Architect (formerly known as the Office of the State Architect)
EPA	Environmental Protection Agency
FCI	Fluid Controls Institute
FFE	Furniture Fixtures and Equipment
FG	Flat Glass Marketing Association
FM	Factory Mutual
FS	Federal Specifications
GA	Gypsum Association
GANA	Glass Association of North America
HPMA	Hardwood Plywood Manufacturers Association
HVAC	Heating, Ventilating and Air Conditioning
I.D.	Identification
IACS	International Annealed Copper Standards
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronic Engineers, Inc.
IES	Illuminating Engineering Society
ISA	Instrumentation Society of America
JATC	Joint Apprenticeship Training Committee
JV	Joint Venture
LBE	Local Business Enterprise
M.I.	Middle Initial
MIA	Masonry Institute of America
MIA	Marble Institute of America
MLSFA	Metal Lath/Steel Framing Association
MS	Military Specifications
MSDS	Material Safety Data Sheet
MSS	Manufacturers Standardization Society of the Valve & Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electric Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association

NFPA	National Forest Products Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Science and Technology (formerly the National Bureau of Standards)
NOFMA	National Oak Flooring Manufacturers Association
NSF	National Sanitation Foundation
NTMA	National Terrazzo & Mosaic Association
NWWDA	National Wood Windows and Doors Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Pre-stressed Concrete Institute
PDI	Plumbing and Drainage Institute
PG&E	Pacific Gas and Electric Company
PM	Preventive Maintenance
PR	Proposal Request
PS	Product Standard, U. S. Department of Commerce
RFI	Request for Information
RFP	Request for Proposals
RFS	Request for Substitution
RSI	Request for Supplemental Information
SDI	Steel Deck Institute
SFM	State of California, Office of State Fire Marshal
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joint Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMC	Swinerton Management & Consulting (District's Construction Manager)
SPIB	Southern Pine Inspection Bureau
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TCNA	Tile Council of North America
TIE	Time Impact Evaluation
UBC	Uniform Building Code
UFC	Uniform Fire Code
UL	Underwriters' Laboratories, Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
USA	Underground Service Alert
USC	United States Code
WCLIB	West Coast Lumber Inspection Bureau
WDMA	Window and Door Manufacturers Association
WHI	Warnock Hersey International – a testing lab
WIC	Woodwork Institute of California
WWPA	Western Wood Products Association

1.2 Abbreviations in Specifications:

AWG	American Wire Gauge
accord	Accordance
Co.	Company
Corp.	Corporation
cm.	centimeter (centimeters)
cu.	Cubic
Div.	Division

dia.	Diameter
ft.	foot (feet)
g./gr.	gram (grams)
gal.	gallon (gallons)
gpd	gallons per day
gpm	gallons per minute
hr.	Hour
kg.	kilogram (kilograms)
in.	inch (inches)
Inc.	Incorporated
km.	kilometer (kilometers)
Kw	Kilowatt
l.	liter (liters)
lbs.	Pounds
m	meter (meters)
Mfg.	Manufacturing
Mg.	milligram (milligrams)
ml./mls.	milliliter (milliliters)
mm.	millimeter (millimeters)
No.	Number
o.c.	on centers
O.D.	outside diameter
psi	pounds per square inch
psf	pounds per square foot
sq.	Square
T & G	tongue and groove
U.S.	United States
yd.	yard (yards)

1.3 Abbreviations on Drawings:

Additional abbreviations, used only on drawings, are indicated thereon.

1.4 SYMBOLS

1.4.1 Symbols in Specifications:

:	“shall be” or “shall” - where used within sentences or paragraphs
#1	Number
1#	Pound
&	And
%	Percent
C	Centigrade
F	Fahrenheit
°	Degree
/	per, except where used to combine words; example: power/fuel, and in that case it means and
“	inch (inches)
‘	foot (feet)
@	At

1.4.2 Symbols on Drawings:

Symbols, used only on Drawings, are indicated thereon.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements for the following:

1.1.1.1 Quality assurance and quality control.

1.1.1.2 Quality Control Plan.

1.1.1.3 Special testing and inspection.

1.1.2 Materials to be furnished under the Contract Documents are subject to testing and inspection for compliance with the Drawings and Specifications. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Design Builder of responsibility for compliance with the Contract Document requirements.

1.1.2.1 Specific quality assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

1.1.2.2 Specified tests, inspections, and related actions do not limit Design Builder's other quality assurance and control procedures that facilitate compliance with the Contract Document requirements.

1.1.2.3 Requirements for Design Builder to provide quality assurance and control services required by District are not limited by provisions of this Section.

1.1.3 Related Sections include the following:

1.1.3.1 Section 00 50 00 (Agreement) for developing a schedule of required tests and inspections.

1.1.3.2 Section 01 43 39 (Mock-Ups) for the specific quality requirements associated with the construction and inspection of mock-ups.

1.1.3.3 Section 01 73 29 (Cutting and Patching) for repair and restoration of construction disturbed by testing and inspecting activities.

1.1.3.4 Divisions 2 through 33 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- 1.2.1 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.
- 1.2.2 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 District's Representative.
- 1.2.3 NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
- 1.2.4 NVLAP: A testing agency accredited according to the National Institute of Standards and Technology's (NIST's) National Voluntary Laboratory Accreditation Program.
- 1.2.5 Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- 1.2.6 Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to District's Representative, to establish product performance and compliance with industry standards.
- 1.2.7 Source Quality Control Testing: Tests and inspections that are performed at the source (i.e., a plant, mill, factory, or shop).
- 1.2.8 Field Quality Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- 1.2.9 Testing Agency: An entity engaged to perform specific tests, inspections, or both that is certified as meeting the requirements applicable to the Work. Testing laboratory shall mean the same as testing agency.
- 1.2.10 Testing, Inspection and Observation (TIO) Program: A program prepared for approval prior to issuance of the building permit that identifies the materials and tests to be performed on a project and the firm(s) and/or individual(s) responsible for performing those tests including, at a minimum, those required by applicable sections of the California Building Standards Code.
- 1.2.11 Installer/Applicator/Erector: Design Builder or another entity engaged by Design Builder as an employee or Subcontractor of any tier to perform a particular construction operation, including installation, erection, application, and similar operations.
- 1.2.12 Experienced: As used herein, an individual or entity that has successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction to work in California.

1.3 CONFLICTING REQUIREMENTS

- 1.3.1 General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to District's Representative for a decision before proceeding.
- 1.3.2 Minimum Quantity or Quality Levels: 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. Refer uncertainties to District's Representative for a decision before proceeding.

1.4 QUALITY CONTROL PERSONNEL

- 1.4.1 Quality Control Manager: Provide a Quality Control Manager at the Site to manage and implement the Quality Control Plan. The duties and responsibilities of the Quality Control Manager will be to manage and implement the Quality Control Plan. The Quality Control Manager's duties and responsibilities include, but are not limited to:

- 1.4.1.1 Attending the Coordination and Detailing Activity (CDA) meetings, Weekly Construction Progress Meetings, Pre-installation Meetings, and Commissioning Meetings.
- 1.4.1.2 Conducting Quality Control meetings, as necessary.
- 1.4.1.3 Reviewing submittals.
- 1.4.1.4 Preparing, monitoring and following through on Requests for Information, Change Orders, and Deferred Approvals.
- 1.4.1.5 Preparing, coordinating and following through on Requests for Inspection.
- 1.4.1.6 Ensuring testing is performed.
- 1.4.1.7 Preparing required Quality Control certifications and documentation.

No Work or testing may be performed unless the Quality Control Manager or a Designated Alternate Quality Control Manager is on the Site. The Quality Control Manager shall report directly to an officer of the Design Build firm who shall not be the same individual as, nor be subordinate to, the Project Manager or Superintendent.

- 1.4.2 Qualifications: The Quality Control Manager must be a graduate of a four year accredited college program in one of the following disciplines: engineering, architecture, construction management, engineering technology, building construction, or building science with a minimum of ten (10) years' experience as

a superintendent, inspector, Quality Control Manager, project manager, or construction manager on major and complex projects.

- 1.4.3 Other Quality Control Personnel: Provide additional quality control personnel (e.g., Quality Control Specialists, administrative support staff) as described in the Quality Control Plan and as required to implement the Quality Control Plan. The District, at its sole discretion, may require the Design Builder to assign additional quality control personnel to the Project if the District believes the Design Builder's assigned personnel are not capable of implementing the Quality Control Plan to the District's satisfaction. The Design Builder shall provide any additional personnel required by the District at no additional cost. Other active members of the Quality Control Program shall include a minimum of a full time architectural and engineering coordinator, Contractor's LEED Coordinator as defined in Section 01 35 00 (Sustainable Design Requirements, and Contractor's Commissioning Coordinator as defined in Section 01 81 00 (Commissioning Requirements). The Quality Control Manager and supporting members' responsibility is to ensure compliance with Contract Documents and is a requirement of the Contractor Quality Control Program.

1.5 SUBMITTALS

- 1.5.1 Qualification Data: For testing agencies specified in Article 1.6 (Quality Assurance) below 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.
- 1.5.1.1 Testing, Inspection and Observation Program: Prepare according to the requirements contained in Section 7-141 of the California Building Standards Administrative Code (Part 1, Title 24, CCR). Submit to District Representative for approval prior to issuance of the building permit.
- 1.5.2 Reports: Reports of all tests made shall be provided regardless of whether test results indicate that the material tested is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Prepare and submit certified written reports that include the following:
- 1.5.2.1 Date of issue.
- 1.5.2.2 District's Project title and number.
- 1.5.2.3 Name, address, and telephone number of testing agency.
- 1.5.2.4 Dates and locations of samples and tests or inspections.
- 1.5.2.5 Applicable Construction Drawing, detail, and Specification numbers.
- 1.5.2.6 Names of individuals making tests and inspections.
- 1.5.2.7 Description of the Work and test and inspection method.
- 1.5.2.8 Identification of product and Specification Section including specified design strength or other applicable criteria.

- 1.5.2.9 Complete test or inspection data.
 - 1.5.2.10 Test and inspection results and an interpretation of test results.
 - 1.5.2.11 Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 1.5.2.12 Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 1.5.2.13 A statement that the material or materials were sampled and tested according to the requirements of the California Code of Regulations, Title 21 or 22 and 24.
 - 1.5.2.14 Name and signature of laboratory inspector.
 - 1.5.2.15 Recommendations on retesting and reinspecting, if any.
 - 1.5.2.16 Reports shall be prepared according to the requirements of a Testing, Inspection, and Observation Program ("TIO") and sections 7-141 and 7-151 of the California Building Standards Code, Part 1, Title 24, CCR. Copies of each report shall be submitted as follows:
 - 1.5.2.16.1 District Representative
 - 1.5.2.16.2 Architect of Record
 - 1.5.2.16.3 Structural Engineer of Record
 - 1.5.2.16.4 Design Builder (2 copies)
 - 1.5.2.16.5 Inspector of Record
- 1.5.3 Permits, Licenses, and Certificates: For District'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.
- 1.5.4 Quality Control Plan: Prepare a plan describing procedures and methods the Design Builder will utilize to control the quality of the Work. At a minimum the Quality Control Plan shall include:
- 1.5.4.1 An organizational structure description, including Quality Control supervision, and inspection reporting structure. Delineate personnel training and qualification activities.
 - 1.5.4.2 Plans and procedures for testing and inspections to verify attributes delineated in the Contract Documents, including those specified in referenced Codes and standards. Include documents that identify individual inspection or testing points and acceptance criteria, and include provisions for recording results and the responsible inspection/test personnel. This documentation shall be traceable to the particular material, items, processes or systems evaluated, including notification requirements.

- 1.5.4.3 Procedures for identifying and contractually invoking the applicable technical and quality requirements delineated in the Specifications on vendors supplying materials, parts and services.
- 1.5.4.4 Plans and procedures for receiving, inspecting and accepting materials and items. These shall include examination of physical condition and compliance with purchasing requirements, including markings for class type and grade, and conformance with supplied documentation. These shall also include provisions for:
 - 1.5.4.4.1 Identifying, controlling and processing non-conforming items, including notification to the District.
 - 1.5.4.4.2 Inspection of materials for authenticity to preclude counterfeit parts, for items and attributes of concern identified by District.
 - 1.5.4.4.3 Verifying for compliance and traceability, maintaining, and turnover to the District, certificates of conformance and mill certificates required by Contract Documents or codes or standards invoked, for materials received.
- 1.5.4.5 Provisions for identifying defective Work. Bring to District's attention, for consultation and possible relief, those cases where correction within the specified requirements may introduce a significant schedule penalty, personnel hazard, or compromise the quality of installed items, or is otherwise impractical.
- 1.5.4.6 Controls to assure that only the "Approved for Inspection" construction documents are utilized in the Work.
 - 1.5.4.6.1 This includes provisions for removing superseded versions from the work area, except where explicitly and prominently marked "Void - For Information Only"; such as to retain annotated installation data.
- 1.5.4.7 Detailed formal procedures or instructions for the performance of special processes, such as welding or concrete placement. These procedures/instructions and personnel performing special processes shall be qualified and certified as required by codes and standards invoked in the Contract Documents.
- 1.5.4.8 Controls providing for periodic calibration of testing and measurement equipment, including unique equipment identification and calibration tracking.
- 1.5.4.9 Maintain records documenting the implementation of the above activities, including tests, inspections, special process qualification and execution, vendor documentation and defective Work resolution. These records shall be indexed, protected and retrievable for final submission to District.

- 1.5.4.10 Identify all tests and inspections that Design Builder proposes to be conducted by the District.
- 1.5.4.11 Approval: The Quality Control Plan must be approved before the start of construction and shall reflect the requirements of the approved Testing, Inspection and Observation Program. The District reserves the right to require revisions to the Quality Control Plan that are necessary to ensure the specified quality of the Work. The District may interview Quality Control personnel at any time to verify their submitted qualifications.
- 1.5.4.12 Changes: The Design Builder shall submit any requested changes to the Quality Control Plan, including changes in personnel, to the District in writing. Proposed changes must be submitted at least seven (7) Days in advance of the desired effective date of the change. No change in the Quality Control Plan shall be implemented without the District Representative's written approval.

1.6 QUALITY ASSURANCE

- 1.6.1 General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- 1.6.2 Installer Qualifications: A firm or individual 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. Installers shall be qualified by the product or equipment manufacturer, if required for warranty or other performance guarantees.
- 1.6.3 Manufacturer Qualifications: A firm experienced in fabricating 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 as required to meet the Project schedule.
- 1.6.4 Fabricator Qualifications: A firm experienced in procuring 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 as required to meet the Project schedule.
- 1.6.5 Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in California and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of systems, assemblies, or products that are similar to those indicated for this Project in material, design, and extent.
- 1.6.6 Specialists: 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.
 - 1.6.6.1 Requirement for specialists shall not supersede building codes and regulations governing the Work.

- 1.6.7 Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, including the requirements of ASTM D3666, D3740, E329, E543, and E548 as applicable; and with additional qualifications specified in individual Sections; and that is acceptable to District. All testing shall be performed under the supervision and control of a California registered professional engineer employed by the testing agency.
- 1.6.8 Factory-Authorized Service Representative Qualifications: An authorized representative of a manufacturer who is trained and approved by the manufacturer to inspect installation of the manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- 1.6.9 Preconstruction Testing: Where a testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
- 1.6.9.1 Design Builder's responsibilities include the following:
 - 1.6.9.1.1 Provide test specimens representative of proposed products and construction.
 - 1.6.9.1.2 Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - 1.6.9.1.3 Provide sizes and configurations of test assemblies to adequately demonstrate capability of products to comply with performance requirements.
 - 1.6.9.1.4 Build site-assembled test assemblies using installers who will perform same tasks for Project.
 - 1.6.9.1.5 When testing is complete, remove test specimens and assemblies; do not reuse products on Project.
 - 1.6.9.2 Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality assurance service to Design Builder, with a copy to the District. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.7 QUALITY CONTROL

- 1.7.1 District Responsibilities: Where quality control services are indicated as District's responsibility, District will engage a qualified testing agency to perform these services.
- 1.7.1.1 Specified inspection and testing shall be performed in accordance with Part 1, Title 24, Article 4, Paragraph 7-149, California Code of Regulations.

- 1.7.1.2 District will furnish Design Builder with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspections they are engaged to perform.
- 1.7.1.3 Payment for these services will be by the District.
- 1.7.1.4 Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Design Builder, and the Contract Sum will be adjusted by Change Order.
- 1.7.1.5 District's Project Inspector:
 - 1.7.1.5.1 A Project Inspector employed by the District in accordance with the requirements of the California Building Code will be assigned to the work. The Project Inspector's duties are specifically defined in CCR Title 24 Part 1.
 - 1.7.1.5.2 The Design Builder shall notify the Project Inspector a minimum of 2 working days in advance of execution of all Work that requires inspection.
 - 1.7.1.5.3 The Work in all stages of progress shall be subject to the personal continuous observation of the Project Inspector. He or she shall have free and safe access to any or all parts of the work at any time. The Design Builder shall furnish the Project Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Design Builder from any obligation to fulfill this Contract.
- 1.7.2 Design Builder's Responsibilities: Tests and inspections not explicitly assigned to District are Design Builder's responsibility
 - 1.7.2.1 Where services are indicated as Design Builder's responsibility, engage a qualified testing agency to perform these quality control services.
 - 1.7.2.1.1 Design Builder shall not employ same entity engaged by District.
 - 1.7.2.2 Notify testing agencies and the District Representative at least seventy-two (72) hours in advance of time when Work that requires testing or inspecting will be performed.
 - 1.7.2.3 Where quality control services are indicated as Design Builder's responsibility, submit a certified written report, in duplicate, of each quality control service to the District Representative.
 - 1.7.2.4 Testing and inspecting requested by Design Builder and not required by the Contract Documents are Design Builder's responsibility.

- 1.7.2.5 Submit additional copies of each written report directly to authorities having jurisdiction, when so directed by the District Representative.
- 1.7.2.6 Do not cover work before required tests and inspections are performed (refer to paragraphs 4.22 and 4.1 of section 00 50 00 (Agreement)).
- 1.7.3 Disqualified Material: Material shipped or delivered to the site by the Design Builder from the source of supply prior to satisfactorily passing required tests or inspections, or prior to the receipt of a notice from the District Representative that such testing or inspection is not required, shall not be incorporated into the Work.
- 1.7.4 Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 (Submittal Procedures).
- 1.7.5 Retesting/Reinspecting: Regardless of whether original tests or inspections were Design Builder's responsibility, provide quality control services, including retesting and reinspection, for construction that replaces Work that failed to comply with the Contract Documents (refer to paragraphs 4.22 of section 00 50 00 (Agreement)).
 - 1.7.5.1 If such additional tests or inspections establish that such portion of the Work fails to comply with the Contract Documents, all costs of such additional tests and inspections, and all other costs resulting from such failure, including compensation for District Representative and District's consultants shall be deducted from the Contract Sum by Change Order.
 - 1.7.5.2 In addition, the Design Builder shall pay for:
 - 1.7.5.2.1 Additional costs, including compensation for travel and daily living expenses that are beyond normal inspection costs, when the District's Testing Laboratory is required to conduct inspections outside of the San Francisco Bay area.
 - 1.7.5.2.2 Costs of retesting Work revised or replaced by Design Builder, where required tests were performed on original construction.
 - 1.7.5.2.3 Costs of retesting construction used as temporary facilities by the Design Builder.
 - 1.7.5.2.4 Costs of testing construction required by Design Builder's substitutions.
- 1.7.6 Testing Agency Responsibilities: Cooperate with District Representative and Design Builder in performance of duties. Provide qualified personnel to perform required tests and inspections:
 - 1.7.6.1 Notify District Representative and Design Builder promptly of irregularities or deficiencies observed in the Work during performance of services.

- 1.7.6.2 Determine the location(s) from which test samples will be taken and in which in-situ tests are conducted.
- 1.7.6.3 Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
- 1.7.6.4 Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service through Design Builder.
- 1.7.6.5 Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
- 1.7.6.6 Do not perform any duties of Design Builder.
- 1.7.6.7 Submit two copies of a verified report to District Representative covering all tests and inspections that are required by the TIO Program during the progress of the Work. The report shall be furnished each time that the Work is suspended, covering the tests completed up to that time, at the completion of the Work, covering all tests, and as otherwise required by the TIO Program.
- 1.7.7 Associated Services: The Design Builder shall 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:
 - 1.7.7.1 Access to the Work.
 - 1.7.7.2 Incidental labor and facilities necessary to facilitate tests and inspections.
 - 1.7.7.3 Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 1.7.7.4 Facilities for storage and field curing of test samples.
 - 1.7.7.5 Delivery of specified quantities of representative samples of materials proposed for use as specified to testing agencies.
 - 1.7.7.6 Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 1.7.7.7 Security and protection for samples and for testing and inspecting equipment at Site.
 - 1.7.7.8 Pursuant to paragraph 13.2.2 of section 00 50 00 (Form of Agreement), the Design/Builder will be responsible for all inspection, review, and permit costs.
- 1.7.8 Coordination: Coordinate sequence of activities to accommodate required quality assurance and quality control services with a minimum of delay and to avoid the need to remove and replace construction to accommodate testing and inspecting.

- 1.7.8.1 Schedule times for tests, inspections, obtaining samples, and similar activities.
- 1.7.8.2 Do not cover any piping, wiring, ducts, or other installations until they have been inspected by the District's Inspector.

1.8 SPECIAL TESTS AND INSPECTIONS

- 1.8.1 Special Tests and Inspections: The District will engage a qualified special inspector to conduct special tests and inspections as required by law, or regulatory agencies having jurisdiction over the Work. The responsibilities of the Special Inspector are as follows:
 - 1.8.2 Verifying that manufacturer maintains detailed fabrication and quality control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 - 1.8.3 Notifying County's Representative promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 1.8.4 Submitting a certified written report of each test, inspection, and similar quality control service to County's Representative with copy to Design Builder.
 - 1.8.5 Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 1.8.6 Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 1.8.7 Retesting and re-inspecting corrected work, as needed.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 INSPECTION

- 3.1.1 The Design Builder shall provide access to the Work, including the facilities where the Work is in preparation, at all times for the purpose of inspection. The Design Builder shall maintain proper facilities and provide safe access for such inspection at all times.
- 3.1.2 The District shall have the right to reject materials and workmanship that are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the Site without charge to the District.
- 3.1.3 The District may make an examination of work already completed by requiring the Design Builder to remove or tear out such work at any time before final acceptance of the Work. Upon request, the Design Builder shall provide all facilities, labor and materials necessary to remove the portion of the Work designated by the District's Representative. If such work is found to be defective in any respect due to the fault of the Design Builder or its subcontractors, the Design Builder shall be responsible for all expenses of such examination and satisfactory reconstruction.

If such work is found to meet the requirements of the Contract Documents, the additional cost of labor and materials involved in the examination shall be allowed to the Design Builder.

3.2 QUALITY CONTROL REPORTS

3.2.1 Frequency: Reports are required for each day that Work is performed, for every seven (7) consecutive Days of no work, and on the last day of a no-work period. Account for each day throughout the life of the Contract. The reporting of Work shall be identified by Specification number and title and terminology consistent with the Contract Schedule. Design Builder Quality Control Reports shall be prepared, signed and dated by the Quality Control Manager and shall contain the following information:

3.2.1.1 Identify the part or parts of the Work that is the subject of the report.

3.2.1.2 Indicate, as applicable, that for the portion of the Work, the drawings and specifications were reviewed, submittals were approved, materials comply with approved submittals, materials are stored properly, preliminary work was done correctly, the testing plan was reviewed, and work methods and schedule were discussed.

3.2.1.3 Indicate, as applicable, that for this portion of the Work, the preliminary work was done correctly, samples have been prepared and approved, the workmanship is satisfactory, test results are acceptable, work is in compliance with the Contract Documents, and the required testing has been performed. Include a list of who performed the tests.

3.2.1.4 Results of off-site quality control work, if applicable, including actions taken.

3.2.1.5 List any rework items identified but not corrected by close of business.

3.2.1.6 List the rework items corrected from the rework items list along with the corrective action taken.

3.2.1.7 Include a "Comments" section in the report that contains pertinent information including directions received, quality control problem areas, deviations from the Quality Control Plan, construction deficiencies encountered, Quality Control meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the Quality Control Manager, and corrective action taken by the Design Builder.

3.3 TEST AND INSPECTION LOG

3.3.1 Prepare a sequentially numbered record of tests and inspection. Include the following:

3.3.1.1 Request for Inspection

3.3.1.2 Date test or inspection was conducted.

- 3.3.1.3 Description of the Work tested or inspected.
- 3.3.1.4 Applicable Construction Drawing and Specification numbers
- 3.3.1.5 Date test or inspection results were transmitted to District's Representative.
- 3.3.1.6 Identification of testing agency or special inspector conducting test or inspection.
- 3.3.2 Maintain log at Site. Post changes and modifications as they occur. Provide access to test and inspection log for District and its representatives' reference during normal working hours.
- 3.4 REPAIR AND PROTECTION
 - 3.4.1 General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 3.4.1.1 Comply with the Contract Document requirements for Section 01 73 00 (Cutting and Patching).
 - 3.4.2 Protect construction exposed by or for quality control service activities.
 - 3.4.3 Repair and protection are Design Builder's responsibility, regardless of the assignment of responsibility for quality control services.
- 3.5 GEOTECHNICAL ENGINEERING
 - 3.5.1 The Design Builder's geotechnical engineer or his representative will provide the following tests and inspections:
 - 3.5.1.1 Continuous inspection of full placement
 - 3.5.1.2 Evaluation of onsite and imported earth materials before placement.
 - 3.5.1.3 Field test fill and earth backfill as placed and compacted.
 - 3.5.1.4 Inspect excavations and subgrade before concrete is placed
 - 3.5.1.5 Provide continuous inspection of pile boring.
 - 3.5.1.6 Provide periodic inspection of open excavations, embankments, and other cuts or vertical surfaces of earth.
 - 3.5.1.7 The Geotechnical Engineer will submit reports of tests and inspections. These reports will indicate compliance or noncompliance with the Contract Documents, results of compaction tests and that soil conditions encountered do or do not confirm anticipated conditions and support their design recommendations.
 - 3.5.2 Design Builder shall remove unsatisfactory material, re-compact, adjust moisture, place new material, or in the case of excavations, provide proper protective measures, perform other operations necessary, as determined by the geotechnical

engineer and directed by the District Representative, whose decisions and directions will be considered final.

3.5.3 Soils Test and Inspection Procedure

- 3.5.3.1 Allow sufficient time for testing and evaluation of results before material is needed. The Geotechnical Engineer will be the sole and final judge of suitability of all materials.
- 3.5.3.2 Laboratory compaction tests to be used will be in accordance with ASTM D 1557.
- 3.5.3.3 Field density tests will be made in accordance with ASTM D 1556.
- 3.5.3.4 The number of tests will be determined by the Geotechnical Engineer and District's Representative. Materials in question may not be used, pending test results.
- 3.5.3.5 The Geotechnical Engineer will visually or otherwise examine excavations and embankments.

3.6 CONCRETE TESTS AND INSPECTIONS

3.6.1 Tests

- 3.6.1.1 Notify Architect, District's Representative and testing agency of brand and type of cement and sources of aggregates in time for review, sampling and testing. Test cement in accordance with Title 24, 1928 B.1
- 3.6.1.2 Aggregate: The District's testing agency will test at least one sample for every two hundred (200) cubic yards of aggregate. Aggregates from a known source of supply that have shown by actual service to produce concrete of the required quality will be tested only for gradation and deleterious substances.
- 3.6.1.3 Obtain at least one set of samples for strength tests of each separate design mix of concrete placed each day. Frequency of sampling shall be not less than once per day, nor less than once for each fifty (50) cubic yards of concrete, nor less than once per 2,000 square feet of surface area for slabs or walls. Obtain one additional set of samples for testing at the start of concrete for each class of concrete, and whenever the mix or aggregate is changed.
- 3.6.1.4 One set of samples consists of four cylinders.
- 3.6.1.5 Cylinders will be taken so as to represent as nearly as possible the batch of concrete from which they are taken. Sampling procedures shall conform to ASTM C 172.
- 3.6.1.6 Test cylinders shall be made and cured in compliance with ASTM C 31, except as modified hereinafter. Tests will comply with ACI 301 for strength, slump, and air entrainment tests.

- 3.6.1.7 Test cylinders from respective batches, one at age of seven (7) Days, and two at age twenty-eight (28) Days. The fourth cylinder shall be held in reserve and tested only at the direction of the Architect or District's Representative. Cylinder testing procedures shall conform to ASTM C 39 for strength.
- 3.6.1.8 Slump tests shall be taken as required by Testing Laboratory to certify compliance with the Contract Documents. Slump shall be tested in accordance with ASTM C 143.
- 3.6.1.9 Minimum compressive strength of test cylinders, in pounds per square inch, shall not be less than the specified required design strength.
- 3.6.1.10 If minimum strengths of test cylinder fall below those specified, Architect or District's Representative may require test cores from hardened concrete to be taken and tested. Each core test, if taken shall consist of three cores. The cost of such cores and tests shall be borne by the Design Builder. Cores shall be taken in accordance with ASTM C 42, from locations selected by the Architect or District's Representative. The Design Builder shall repair core holes with a non-shrinking natural aggregate grout.
 - 3.6.1.10.1 Concrete testing by coring shall be considered acceptable if the average strength of the three cores is equal to at least .85 of the minimum specified twenty-eight (28) day strength and if no single core strength is less than five hundred (500) psi below the twenty-eight (28) day strength.

3.6.2 Concrete Inspections

- 3.6.2.1 An authorized inspector from the testing agency shall be present at all times during placing of structural cast-in-place concrete. The inspector shall inspect and accept the accuracy of all reinforcing steel before concrete is placed. Concrete construction activities shall not proceed until inspections are complete and the inspected construction is approved.

3.6.3 Concrete Mix Designs

- 3.6.3.1 Refer to Volume 3 and 6, Division 3 (Concrete)

3.6.4 Concrete Plant Inspection

- 3.6.4.1 Structural concrete manufacturer(s) shall deliver a certificate in accordance with ASTM C 94, Section 15.1, and all items of Section 15.2 with the addition of type and brand of cement and admixtures, source and identification of aggregates to the Inspector with each mixer truck. Certificates shall be from a public weighmaster. The inspector shall not accept concrete that is not accompanied and identified by a certificate from a batch plant inspector.
- 3.6.4.2 Concrete shall be mixed at certified automatic concrete batch plants and shall have quality control as follows:

- 3.6.4.2.1 Laboratory designed mixes using adequate cement factors.
- 3.6.4.2.2 The testing agency shall perform continuous batch plant inspection.
- 3.6.4.2.3 Compliance with California Building Code (CBC) Standard 19-3.
- 3.6.4.2.4 Periodic inspection of quality of materials used may be made by testing laboratory, acceptable to Architect or District's Representative.

3.7 HIGH-STRENGTH GROUT

- 3.7.1 This Article applies to structural grout used below base plates and similar applications.
- 3.7.2 The placement of grout materials will be continuously inspected by the District's testing agency.
- 3.7.3 Grout compressive strength testing: The District will obtain a set of three samples from each batch. Samples will be tested at one (1) or three (3) days and seven (7) days following mixing. Compressive strengths shall exceed the manufacturer's published minimum strengths or eighty percent (80%) of their published typical compressive strengths.

3.8 EXPANSION ANCHOR BOLTS (TITLE 24, 1925 B.3.5)

- 3.8.1 Expansion type concrete anchor bolts shall be Hilti Kwik Bolt II or as indicated on the approved Construction Documents. Other brands of similar anchors will be acceptable with demonstration of equivalency. Submit manufacturer's specifications and ICBO reports. All anchors shall be installed with special inspection in accordance with the requirements of the Building Code.
- 3.8.2 Fifty percent of the anchors or alternate bolts in any group arrangement shall be proof tested in tension or torque, as specified on the drawings.
- 3.8.3 Testing Requirements:
 - 3.8.3.1 Anchor diameter refers to the thread size.
 - 3.8.3.2 Apply proof test loads to anchors without removing the nut, if possible. If not possible, remove nut and install a threaded coupler to the same tightness as the original nut using a torque wrench and apply load.
 - 3.8.3.3 Reaction loads from test fixtures may be applied close to the anchor being tested, provided the anchor is not restrained from withdrawing by the fixture(s).
 - 3.8.3.4 Test equipment is to be calibrated by an approved testing laboratory in accordance with standard recognized procedures.
 - 3.8.3.5 The following criteria are applicable for the approval of installed anchors:

3.8.3.5.1 Hydraulic Ram Method: The anchor should have no observable movement at the applicable test load. For wedge and sleeve type anchors, a practical way to determine observable movement is that the washer under the nut becomes loose.

3.8.3.5.2 Torque Wrench Method: The applicable test torque must be reached within the following limits:

3.8.3.5.2.1 One half (1/2) turn of the nut.

3.8.3.5.2.2 One quarter (1/4) turn of the nut for the 3/8" sleeve anchor only.

3.8.3.5.3 Testing should occur a minimum of twenty-four (24) hours after installation of the subject anchors.

3.9 ADHESIVE ANCHORS

3.9.1 Installation Testing: Fifty percent of the anchors shall be pull-tested.

3.9.2 Proof Test Load: Pull test to twice the ICBO evaluation report design tension values or as indicated on the drawings.

3.9.3 Inspection: Installation of adhesive anchors will be continuously inspected in accordance with the requirements of the California Building Code, Section 1701, and the appropriate ICBO evaluation report.

3.10 EPOXY AND CEMENTITIOUS GROUTED DOWELS

3.10.1 Initial Testing: Install three anchors for each anchor size and installation position planned in allocation acceptable to the Architect or District's Representative. These anchors shall not be incorporated into the finished construction. The testing agency will pull-test these anchors at one hundred twenty-five percent (125%) of the values specified on the drawings.

3.10.2 Testing: The testing agency will pull-test fifty percent (50%) of the dowels in accordance with the schedule shown on the drawings. If any failures occur, the agency will pull-test one hundred percent (100%) of dowels in the vicinity or placed with the same batch of grout until at least twenty (20) tests demonstrate compliance. The Design Builder shall bear the cost of replacing failed dowels and re-inspection.

3.10.3 Inspection: Installation of epoxy grouted dowels will be continuously inspected in accordance with the California Building Code, Section 1701, and the appropriate ICBO evaluation report.

3.11 REINFORCING STEEL

3.11.1 Tests

3.11.1.1 Tests shall be performed before the delivery of steel to the Site. Steel that does not meet specifications shall not be shipped to the Project.

- 3.11.1.2 Testing procedure shall conform to ASTM A 615.
- 3.11.1.3 Sample at the place of distribution, before shipment. Make one tensile strength test and one bending test from samples out of 10 tons, or fraction thereof, each size and kind of reinforcing steel, where taken from bundles as delivered from the mill and properly identified as to heat number. Mill analysis shall accompany report. Where identification number cannot be ascertained, or where random samples are taken, make one series of tests from each two and a half (2-1/2) tons, or fraction thereof, of each size and kind of reinforcing steel. Samples shall include not fewer than two pieces, each eighteen (18) inches long, of each size and kind of reinforcing steel.
- 3.11.1.4 Welds: Reinforcing bar welds shall be inspected. Tests of reinforcing bar welds shall be in accordance with ASTM E 709 and AWS D1.4. Chemical testing of reinforcing bars for welding shall conform to Title 24, 2603 B.5.2.

3.11.2 Inspector will inspect all reinforcement for concrete construction for size, dimensions, locations and proper placement. Special Inspector required for welding as required by Title 24, 1928 B.12. Inspector shall be present during welding of all reinforced steel.

3.11.3 Stone Veneer

- 3.11.3.1 All veneer shall be continuously inspected as required by the California Code or Regulations, Title 24, Part 2, Volume I, Section 1403 A.6.

3.12 STRUCTURAL STEEL INCLUDING MISCELLANEOUS STEEL

3.12.1 Mill certificates or affidavits and manufacturers' certifications shall be supplied to the inspector for verification of steel materials. Testing agency shall be notified at least three working days in advance of fabrication and supplied with the reports so that the inspector can make a shop inspection of the steel.

3.12.2 Inspection requests shall be based on Title 24, Part 2, California Building Code, Volume 2, Seismic Provisions for Structural Steel Buildings of the American Institute of Steel Construction, 2002.

3.12.3 Identify and mark steel in accordance with Section 2202B. Structural steel properly identifies need not be tested.

3.12.4 Tests of Steel Materials: If structural steel cannot be identified by heat or melt numbers, or if its source is questionable, not less than one tension test and one bend test will be made for each five tons or fractional part thereof. The cost of such testing will be borne by the Design Builder.

3.12.5 Testing and Inspection of Structural Steel:

- 3.12.5.1 Testing agency will visit the fabricator's plant to verify that materials used check with the mill tests, affidavits of test reports, and that fabrication and welding procedures meet specifications.

- 3.12.5.2 Testing agency shall visually check fabricated steel delivered to the Project against the working and reviewed shop drawings for compliance, and make physical tests and measurements as required to meet the Specifications.
- 3.12.5.3 Inspection of welding shall be in accordance with the requirements of section 2212 B.5.
- 3.12.5.4 Erection Inspection: Testing agency will visually inspect bolted and field welded connections, perform such additional tests and inspections of the field work as are required by the Architect or District's Representative and prepare test reports for the approval.
- 3.12.6 Ultrasonic Testing: All complete penetration multi-pass groove welds will be ultrasonically tested:
 - 3.12.6.1 The District's testing agency will perform ultrasonic testing immediately after welding is complete. A second ultrasonic testing will be performed near the end of field welding for at least twenty-five percent (25%) of the field welded groove welds.
 - 3.12.6.2 All defective welds shall be repaired and re-tested with ultrasonic equipment.
 - 3.12.6.3 When ultrasonic indications arising from the weld root can be interpreted as either a weld defect or the backing strip itself, the backing strip shall be removed at the Design Builder's expense and, if no root defect is visible, the weld shall be retested. If no defect is indicated on this re-test, and no significant amount of the base and weld metal haven been removed, no further repair or welding is necessary. If a defect is indicated, it shall be repaired at the Design Builder's expense.
 - 3.12.6.4 The ultrasonic instrumentation shall be calibrated by the technician to evaluate the quality of the welds in accordance with AWS D1.1.
 - 3.12.6.5 Should defects appear in welds tested, repairs shall be similarly inspected at the Design Builder's expense and at the direction of the Architect or District's Representative until satisfactory performance is assured.
 - 3.12.6.6 Other methods of inspection, for example, x-ray, gamma ray, magnetic particle, or dye penetrant, may be used on welds if deemed necessary by the Architect or District's Representative.
- 3.12.7 The testing laboratory will review welding procedure specifications and related documentation to verify compliance with AWS and the Contract Documents.

3.13 HIGH-STRENGTH BOLTS, NUTS AND WASHERS

- 3.13.1 Material Tests: High-strength bolts, nuts and washers will be sampled and tested in accordance with the requirements of the specification for High-Strength Bolts for Structural Steel Joints, including Suitable Nuts and Plain Hardened Washers, ASTM A325, or for Quenched and Tempered Alloy Steel Bolts for Structural Steel

Joints, ASTM 490, latest editions, details of construction, and installation procedure.

- 3.13.2 Inspection of High-Strength bolt Installation: Inspection of high-strength bolt installations shall be made in accordance with Title 24, Section 2213B by an inspector specially approved for that purpose by District Representative . The inspector will check the materials, equipment, details of construction, and installation procedure. The inspector shall furnish the Architect or District's Representative with a report that the Work has been completed in every respect in compliance with the approved Drawings and Specifications.

END OF SECTION

SECTION 01 50 50

CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RERLATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01412 - “Hazardous Material”
- C. Divisions 2 through 33 Sections for Construction and Demolition Waste Management requirements for the work in those Sections.

1.3 SUMMARY

- A. The District has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little 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. The existing buildings that are shown to be demolished by the Design Builder in the Contract Documents currently contain furniture, fixtures and equipment (FF&E)-both fixed and movable. The District has determined said FF&E has zero salvageable value. Therefore, for bidding purposes, the Design Builder shall bid removing and disposing of said FF&E assuming and allocating zero-dollar value to whatever FF&E remains when the Design Builder takes possession of the Site. Design Builder shall include said FF&E in its Waste Management Plan that is submitted to the District. The Design Builder is also advised that the District is in the process of removing some, but not all, of the movable FF&E through its normal Purchasing Department process by the anticipated Notice of Award date.

1.4 WASTE MANAGEMENT GOALS FOR THE PROJECT

- A. The District has established that this Project shall minimize the creation of construction and demolition waste, and shall divert a minimum of 75% of Project generated waste from landfills. Factors that contribute to waste such as over packaging, improper storage, ordering error, poor planning, breakage, mishandling, and contamination, shall be minimized. 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. Both recycled and waste need to be logged and documented by volume and weight.
- B. Diversion Goals: A minimum 75% of total Project waste shall be diverted from landfill. The following waste categories, at a minimum, shall be diverted from landfill. The Design Builder’s Waste Management Plan shall establish a program for reusing or recycling materials which are recyclable. These materials include, but not limited to:
 - 1. Landscape and land clearing debris (green wood materials)

2. Asphalt pavement
3. Gravel and aggregate products
4. Concrete
5. Masonry scrap and rubble (brick, concrete, masonry, stone)
6. Metals (ferrous and nonferrous)
7. Clean wood (dimensional lumber, sheet goods, millwork, scrap, pallets)
8. Plastics (films, containers, PVC products, polyethylene products)
9. Asphalt/Bituminous roofing
10. Insulation Materials
11. Glass (un-tempered)
12. Door and window assemblies
13. Carpet and carpet pad
14. Fibrous acoustic materials
15. Ceiling Tiles
16. Plumbing fixtures and equipment
17. Mechanical equipment
18. Lighting fixtures and electrical components
19. Cardboard packing and packaging
20. Furniture
21. Sheet Rock
22. Electronic Waste
23. Universal Waste
24. Paper

1.5 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, grease solvents, caulk, no Freon with air-conditioning units or similar products.
- B. Class III Landfill: A landfill that accepts non-hazardous waste such as household, commercial, and industrial waste, including construction, remodeling, repair, and demolition operations.
- C. Commingled or Off-site Separation: Collecting all material types into a single bin or mixed collection system and separating the waste materials into recyclable material types in an off-site facility.
- D. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash debris and rubble resulting from construction, remodeling repair and demolition operations. Hazardous materials are not included.
- E. Debris: Including both combustible and noncombustible wastes, such as leaves and tree trimmings that result from construction or maintenance and repair work.
- F. Deconstruction: The process of removing existing building materials from renovation and demolition projects for the purposes of reuse, and recycling, in an efficient and safe manner possible.
- G. Divert or Diversion from Landfill: To remove, or have removed, from the site for recycling, reuse or salvage material that might otherwise be sent to a landfill. Diversion from Landfill does not include using the material as alternative daily cover at a landfill site, nor does it include burning, incinerating, transformation processing or thermally destroying waste.
- H. Inert Fill: A permitted facility that accepts inert waste such as asphalt and concrete exclusively.

- I. Recovery: Any process that reclaims materials, substances, energy, or other products contained within or derived from waste on-site. It includes waste-to-energy, composting, and other processes.
- J. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product.
- K. Recycle (recycling): To sort, separate, process, treat or reconstitute solid waste and other discarded materials for the purpose of redirecting such materials into the manufacture of useful products. The process of collecting and preparing recyclable materials in their original form, or in manufacturing processes, that do not cause the destruction/contamination of recyclable materials in a manner that precludes further use. Recycling does not include burning, incinerating, transforming or thermally destroying waste.
- L. Return: To give back reusable items or unused products to vendors.
- M. Reuse: Using a material or product that is recovered from construction, renovation, or demolition activities.
- N. Reuse on Site: To reuse excess of discarded construction material in some manner on the Project site.
- O. Rubbish: Including both combustible and noncombustible wastes, such as paper, boxes, glass, crockery, metal and lumber scrap, tin cans, and bones.
- P. Salvage: to remove a waste material from the Project site for resale or reuse.
- Q. Sources Separation: Sorting the recovered materials into specific material types with no or a minimum amount of contamination on site.
- R. Time-Based Separation: Collecting waste during each phase of construction or deconstruction which results in primarily one major type of recovered material. The material is removed before it becomes mixed with the material from the next phase of construction.
- S. Waste Materials: Large and small pieces of listed materials which are excess to contract requirements and generally include materials to be recycled and/or recovered from existing construction and items of trimmings, cuttings, and damaged goods resulting from new installations, which can be effectively used in the Work. Extra material or material that has reached the end of its useful life in its intended use.

1.6 REFERENCES AND RESOURCES

- A. This information is provided for Design Builder's convenience only, and the District does not warrant its accuracy. County specific information is available on the Contra Costa County Waste Reduction and Recycling web page at <http://www.co.contra-costa.ca.us/depart/cd/recycle/index.html>. Additional information may also be found at the Contra Costa County Department of Conservation and Development web page at <http://www.cccounty.us/index.aspx?NID=285>, and CalGreen / Construction & Demolition Debris Recovery Program, <http://www.cccounty.us/4746/CalGreen-Construction-Demolition-Debris>. Refer to the Contra Costa County *Builder's Guide to Reuse & Recycling* and the Contra Costa County Reuse and Recycling Guide. Both are available from Contra Costa County <http://www.co.contra-costa.ca.us/4911/Recycling>; Contact Lorna Thomson at 925-674-8823 (lorna.thomson@dcd.cccounty.us) for assistance in the management of construction & demolition debris.

B. The recyclers listed below provided for the convenience of Design Builder. No preference is given to the recyclers listed below. Design Builder shall contact any additional resources as required to complete the work. Some of the names and numbers may be out of date, and Design Builder shall not rely on the information presented in this Section in preparing its Bid or its Waste Management Plan.

1. Cardboard:

Contact: National Recycling Corporation (510) 268-1022; California Waste Solutions (510) 836-6200; Community Conservation Centers (510) 524-0113. May find the public will remove if made available.

2. Clean, untreated, dimensional wood and pallet wood:

Contact: California Waste Solutions (510) 836-6200, Waste Management, Inc. (916) 374-2711.

3. Usable Palettes

Contact: Check with manufacturer or installer for take-back programs.

4. Beverage containers:

Contact: California Waste Solutions (510) 836-6200.

5. Metals from banding, ductwork, piping, rebar, roofing, steel studs, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze:

Contact: Aaron Metals (510) 569-6767; DC Metals (510) 569-2255; Lakeside Non-Ferrous Metals, (510) 444-5466.

6. Carpet and pad:

Contact: Return to manufacturer; donate large remnants to Habitat for Humanity (510) 251-6304 or other non-profit.

7. Paint:

Contact, paint recycles: E-Coat, Kelly Moore (925)-687-3006.

Contact: Alameda County, <https://www.acgov.org/sustain/what/greenbuilding/cdd.htm>
Safety Clean (408) 294-8778.

8. Insulation:

Check with manufacturer or installer for take-back programs.

9. Brick:

Contact, (whole bricks): A Bygone Era; Ohmega Salvage (510) 843-7368.

10. Gypsum Board:

Contact: Zanker Recycling 408 263-2385.

C. The following sources provided for references:

1. BuildingGreen.com

2. CalRecycle

3. Office of Land and Emergency Management (OLEM)

4. Construction Waste Management Handbook

1.7 WASTE MANAGEMENT PLAN

- A. Waste Management Plan: Within 10 calendar days after receipt of Notice of Award, or prior to any waste removal, whichever occurs sooner, Design Builder shall submit to the District and District's Representative a Waste Management Plan, tailored to this project and Site, for review and acceptance. The Waste Management Plan shall include, but not limited to, the following:
1. The Design Builder shall designate an on-site party (or parties) as the Waste Management Plan Program Manager responsible for instructing workers and overseeing and documenting results of implementation of the Waste Management Plan for the Project.
 2. Indicate how the Design Builder proposes to recover at least 75% of the wastes for reuse and recycling.
 3. The Waste Management Plan should coordinate the recovery effort with the construction, and renovation / demolition schedule.
 4. Indicate compliance with this specification's section on Quality Assurance.
 5. Description of the regular meetings to address waste management.
 6. Include a list of reuse facilities, recycling facilities and processing facilities that will be receiving the recovered materials (including take back by District or on-site auctions.)
 7. If some of the materials will be donated or sold on-site auctions, describe the process and identify the organizations that may receive the materials.
 8. Identify materials that are not recyclable or not recovered which will be disposed of in a landfill (or other means acceptable by the State of California and local ordinance and regulations) and explain why the materials are not recovered.
 9. List the permitted landfill, or other permitted disposal facilities, that will be accepting the disposed waste materials.
 10. Indicate instances or situations where compliance with the requirements of this specification do not apply or do not appear to be possible.
 11. Identify each type of waste material to be reused or recycled and estimate the amount, by weight.
 12. Provide estimate of time requirements for demolition and for the removal of valuable reusable items and materials.
- B. Revise and resubmit the Waste Management Plan as required by District.
- C. Acceptance of Design Builder's Waste Management Plan will not relieve Design Builder of responsibility for compliance with applicable environmental regulations.

1.8 QUALITY ASSURANCE

- A. Regulatory Requirements. Comply with applicable requirements of the State of California, local ordinances and regulations concerning management of construction, clearing, and inert materials.
- B. Disposal Site, Recyclers and Waste Materials Processors. Use only facilities properly permitted by the State of California, and/or by local authorities where applicable.
- C. Pre-Work Waste Management Plan Meeting.
1. Prior to beginning work at the Site, schedule and conduct a meeting to review the Waste Management Plan and discuss procedures, schedules, coordination and specific requirements for waste materials recycling and disposal. Discuss coordination and

interface between Design Builder, sub-contractors, engineers, project manager, District, and other waste management activities. Identify and resolve problems of compliance with requirements. Record minutes of the meeting, identifying conclusions reached and matters requiring further resolution. Maintain waste management as an agenda item at future construction meetings.

2. Attendees: Design Builder and related contractor personnel associated with work of this section, including personnel in charge of the waste management program; Waste Management Plan Program Manager; engineers; material and equipment suppliers where appropriate; and such additional District personnel as District deems appropriate.
3. Waste Management Plan Revision: Make revisions to Waste Management Plan agreed upon during the meeting and incorporate resolutions agreed to be made subsequent to the meeting. Submit revised Waste Management Plan to the District as District deems appropriate for acceptance.

1.9 RECYCLING PROGRAM

- A. The recycling program could utilize one or a combination of any of the following common waste diversion strategies:
 1. Sources Separation
 2. Time-Based Separation
 3. Commingled or Off-site Separation
 4. Back haul of packaging
 5. On-site sales auctions and removal.
- B. Waste Material management hierarchy can be viewed as: reuse on-site, recycle on-site, reuse off-site, and recycle off-site.

1.10 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Plan Distribution:
 1. Design Builder shall provide copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, job site Superintendent, Project Inspector, District, and / or Engineer.
 2. Design Builder shall provide Waste Management Plan to comply with this Section 01505.
- B. Instruction: Design Builder shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages and/or phases of the Project.
- C. Meetings: Design Builder shall conduct Construction Waste Management Plan meetings. Meetings shall include all subcontractors affected by the Waste Management Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:
 1. Pre-bid meetings.
 2. Pre-construction meeting; (including pre-construction meeting for the Project)
 3. Regularly scheduled job-site meetings.
- D. Separation Facilities: Design Builder shall designate a specific area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid co-mingling of

materials. Bins shall be protected during non-working hours from offsite contamination. Secure waste collection areas to protect from wind, access, rain, run off, ground contamination, etc.

- E. Materials Handling Procedures: Materials to be recycled shall be protected from contamination, and shall be handled, stored and transported in a manner that meets the requirements set by the designated facilities for acceptance.

1.11 PROGRESS DOCUMENTATION

- A. Provide the Design Builder's Waste Program Manager with delivery receipts for the recovered materials and waste materials sent to the permitted recycling facilities, processing facilities, or landfill with the following information on a form to be approved by the District:
 1. Name of firm accepting the recovered materials or waste materials
 2. Specify type of facility (e.g. retail facility, recycler, processor, Class III landfill, MRF)
 3. Location of the facility
 4. Type of materials
 5. Net weights (or volume) of each type of material
 6. Date of delivery
 7. Value of the materials or tipping fee paid
- B. Document on form shall be reviewed and approved by District.
- C. Application for Progress Payments: Design Builder shall submit with each Application for Progress Payment a Summary of the project waste generated. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The District and its representatives shall not be responsible for delay Progress Payment. With each Application for Payment, submit required Progress Documentation, including:
 1. Manifest;
 2. Weight tickets;
 3. Receipts;
 4. Invoices specifically identifying the project and waste material.
- D. Record Submittals: With Record Submittals as specified in Section 01330, submit the following:
 1. Summary of solid waste disposal and diversion. Submit on form preapproved by District.
 2. Estimate of total Project waste to be generated; name of the landfill(s) where Project waste would normally be disposed of.
 3. Estimate of amounts (weight, feet, square yards, gallons, etc.) All waste categories listed.
 4. Estimate of net cost revenue or additional costs resulting from separating and recycling, (versus land filling), each material. Net means that the following have been subtracted from the cost of separating and recycling:

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 STORAGE AND HANDLING

- A. Site Storage

1. Remove materials for recycling and recovery from the work locations to approved containers or storage area as required. Failure to remove waste or recovered materials will be considered cause for withholding payment and termination of Contract.
 2. Position containers for recyclable and recoverable waste materials at a designated location on the Site. If materials are sorted on Site, also provide a sorting area and necessary storage containers.
 3. Change-out loaded containers for empty containers, as demand requires.
 4. If recovered materials are stored on-site for project duration, provide adequate security from pilferage.
- B. Handling
1. Deposit indicated recyclable, and recoverable materials in storage areas or containers in a clean (no mud, adhesive, solvents, petroleum contamination), debris-free condition. Do not deposit contaminated materials into the containers until such time as such materials have been cleaned.
 2. Insure all recovered materials are made safe for handling and storage.
 3. If the contamination chemically combines with the material so that it cannot be cleaned, do not deposit into the recycle containers. In such case, request resolution by the District for disposal of the contaminated material. Directions from the District do not relieve the Design Builder of responsibility for compliance with all legal and regulatory requirements for disposal, nor shall such directions cause a request for modification of the Contract.

3.2 PROJECT CONDITIONS

- A. Site Condition:
1. Signs and instructions should be clear, and easy to understand. All recycling containers should be clearly labeled and lists of acceptable and unacceptable materials will be posted throughout the site. Whenever possible, they should be in multiple-languages, especially in Spanish, and in graphic symbols.
 2. The Design Builder shall ensure the safety of all personnel involved in the waste management process.
 3. As a part of the Waste Management Plan, a site management plan shall be created including: work areas, materials processing areas, materials storage and disposal areas, worker hand-washing and changing stations, first aid and medical information.

END OF SECTION 01 50 50

SECTION 01 52 00

CONSTRUCTION FACILITIES

PART 1 - GENERAL

RELATED DOCUMENTS

- 1.1. Drawings and general provisions of Section 00 50 00 (Form of Agreement), and other Division 1 Specification Sections, apply to this Section.

SUMMARY

- 2.1. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- 2.2. Temporary utilities include, but are not limited to, the following:
 - 2.2.1. Sewers and drainage.
 - 2.2.2. Water service and distribution.
 - 2.2.3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
 - 2.2.4. Heating and cooling facilities.
 - 2.2.5. Ventilation.
 - 2.2.6. Electric power service.
 - 2.2.7. Lighting.
 - 2.2.8. Telephone service.
 - 2.2.9. High-speed Internet service.
- 2.3. Support facilities include, but are not limited to, the following:
 - 2.3.1. Temporary roads and paving.
 - 2.3.2. Dewatering facilities and drains.
 - 2.3.3. Project identification and temporary signs.
 - 2.3.4. Waste disposal facilities.
 - 2.3.5. Field offices.
 - 2.3.6. District field office.
 - 2.3.7. Storage and fabrication sheds.
 - 2.3.8. Lifts and hoists.
 - 2.3.9. Temporary elevator usage.
 - 2.3.10. Temporary stairs.
 - 2.3.11. Construction aids and miscellaneous services and facilities.
- 2.4. Security and protection of the Work shall comply with the requirements of Article 14 of Section 00 50 00 (Form of Agreement) and include, but are not limited to, the following:
 - 2.4.1. Environmental protection.
 - 2.4.2. Stormwater control.
 - 2.4.3. Tree and plant protection.
 - 2.4.4. Pest control.
 - 2.4.5. Site enclosure fence.
 - 2.4.6. Security enclosure and lockup.

- 2.4.7. Barricades, warning signs, and lights.
- 2.4.8. Covered walkways.
- 2.4.9. Temporary enclosures.
- 2.4.10. Temporary partitions.
- 2.4.11. Fire protection.

2.5. Related Sections include the following:

- 2.5.1. Section 00 50 00 (Form of Agreement) for progress cleaning requirements.
- 2.5.2. Section 01 77 00 (Cleaning and Closeout Procedures) for closeout, cleaning procedures.
- 2.5.3. Divisions 2 through 33 for temporary heat, ventilation, and humidity requirements for products in those Sections.

DEFINITIONS

- 3.1. Permanent Enclosure: As determined by District, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

USE CHARGES

- 4.1. General: Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 4.1.1. District's construction and management forces.
 - 4.1.2. Architect and other design sub-consultants.
 - 4.1.3. Testing agencies.
 - 4.1.4. Inspection services.
 - 4.1.5. Personnel of authorities having jurisdiction.
- 4.2. Sewer Service: Use District's existing sewer service without metering and without payment of use charges.
- 4.3. Water Service: Use water from District's existing water system without metering and without payment of use charges.
- 4.4. Electric Power Service: In existing structures use electric power from District's existing system without metering and without payment of use charges unless otherwise noted. For all new structures under construction and temporary facilities (including but not limited to all field offices and temporary construction facilities) Design Builder shall engage the appropriate local utility company to install temporary service. Pay electrical service use charges for all new structures under construction and temporary facilities.
- 4.5. Telephone and High-speed Internet Service: Design Builder shall install and pay for all telephone (voice and facsimile) and High-speed Internet service use and maintenance charges and insure that such utilities are available for use by all entities engaged in construction activities at Project site.

QUALITY ASSURANCE

- 5.1. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 - 5.1.1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
 - 5.1.2. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Design Builder to obtain required certifications and permits.

Material Safety Data Sheets (MSDS)

- 6.1. Design Builder is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Work Site for any material requiring a Material Safety Data Sheet per the Federal "Hazard Communication" standard, or employees right to know law. The Design Builder is also required to ensure proper labeling on substances brought onto the job site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

PROJECT CONDITIONS

- 7.1. Temporary Utilities: At the earliest feasible time, when acceptable to District, change over from use of temporary service to use of permanent service.
 - 7.1.1. Temporary Use of Permanent Facilities: 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 District's acceptance, regardless of previously assigned responsibilities.
- 7.2. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 7.2.1. Keep temporary services and facilities clean and neat.
 - 7.2.2. Relocate temporary services and facilities as required by progress of the Work.
 - 7.2.3. If power greater than that available at nearby convenience outlets is required, make arrangements for such service and pay all costs of wiring and current. Repair existing facilities to originally found conditions.

PART 2 - PRODUCTS

1. MATERIALS

- 1.1. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by District. Provide materials suitable for use intended.

- 1.2. Pavement: Comply with Division 2 [Section "Asphaltic Concrete Paving."] [Section "Portland Cement Concrete Paving."] [Pavement Sections.]
- 1.3. Portable and Temporary Chain-Link Fencing: Minimum 2-inch (50-mm) 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch-(73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails.
 - 1.3.1. For portable chain-link fencing, provide galvanized steel support bases for supporting posts. Use bolt clamp connections. No wire ties to secure between fence panels.
 - 1.3.2. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.
 - 1.3.3. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide District with three sets of keys.
 - 1.3.4. Visual Barrier: Provide and install mesh screen with District approved connections to fencing for visual barrier
- 1.4. Lumber and Plywood: Comply with requirements in Division 6 Section Rough Carpentry."
- 1.5. Paint: Comply with requirements in Division 9 Section "Painting."
- 1.6. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- 1.7. Water: Potable.

2. EQUIPMENT

- 2.1. General: Provide equipment suitable for use intended.
- 2.2. Field Office and District Field Office: Mobile units with lockable entrances, operable windows, and serviceable finishes; heated and air conditioned; on foundations adequate for normal loading. Windows and doors are to have security bars and operable shades.
- 2.3. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 - 2.3.1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- 2.4. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- 2.5. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
- 2.6. Heating Equipment: Unless District authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

- 2.6.1. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
- 2.7. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- 2.8. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 – EXECUTION

1. INSTALLATION, GENERAL

- 1.1. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by the District. See Article 3.3..1
- 1.2. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities and approved by District.

2. TEMPORARY UTILITY INSTALLATION

- 2.1. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
 - 2.1.1. Arrange with utility company, District, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2.1.2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
 - 2.1.3. Obtain easements to bring temporary utilities to Project site where District's easements cannot be used for that purpose.
- 2.2. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
 - 2.2.1. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
 - 2.2.2. Connect temporary sewers to municipal system as directed by sewer department officials.

- 2.2.3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. After heavy use, restore normal conditions promptly.
- 2.3. Water Service: Use of District's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to District.
- 2.3.1. The Design Builder shall be responsible for undue wasting of water used on the Work.
- 2.3.2. Design Builder to furnish hoses and temporary piping placed where water connections are available.
- 2.3.3. Provide adequate fire protection for the duration of work in accordance with local codes, ordinances and the State Fire Marshal.
- 2.3.3.1. The Design Builder shall take necessary precautions to guard against and eliminate possible fire hazards and to prevent damage to construction work, building materials, equipment, and public property. The Design Builder shall be responsible for providing, maintaining and enforcing fire protection methods
- 2.3.4. here installation 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.
- 2.4. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
- 2.4.1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
- 2.4.2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.
- 2.4.3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
- 2.4.4. Drinking-Water Facilities: Provide bottled-water, drinking-water units and paper cup supply.
- 2.5. Heating and Cooling: 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 from that specified that will not have a harmful effect on completed installations or elements being installed.
- 2.6. Ventilation and Humidity Control: 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 from that specified 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.

2.6.1. Unless the District Project Manager authorizes an alternate procedure in writing, in advance of the start of construction; continuously ventilate all construction work areas and spaces with 100% outdoor (fresh) air for at least 30 days prior to substantial completion of work. In areas, which make use of natural ventilation such as windows, install temporary fans sufficient to provide no less than three air changes per hour. In all cases make sure that air is exhausted from construction work areas directly to the outdoors; do not re-circulate air or ventilate to other enclosed areas either within the occupied school or the construction area itself. Continuously operate ventilation systems and/or temporary fans 24 hours per day, 7 days per week, providing all measures necessary to allow the operation of ventilation systems and fans while maintaining the security of the site.

2.6.1.1. When volatile organic compound, and/or odor generating activities are performed during the 30-day ventilation period provide temporary exhaust ventilation to capture emissions and exhaust them directly to the outdoors. Extend the building flush out for a minimum of four days after the completion of any such activities.

2.6.1.2. During ventilation, make necessary provisions to temper supply air or heat spaces sufficiently to prevent condensation, water damage, and/or mold growth. Do not attempt to speed the off gassing of materials and/or curing of finishes by increasing room temperatures above normal levels ("baking" the building and/or components)

2.6.1.3. Additional Conditioning at Move-In: Continue to operate ventilation systems at 100% fresh air during occupant move-in and unpacking. Do not perform final balancing of the ventilation system until two weeks after the move-in.

2.7. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.

2.7.1. Install power distribution wiring overhead and rise vertically where least exposed to damage.

2.8. Electric Power Service: Where approved by the District, use of District's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to District.

2.9. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

2.9.1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

2.10. Lighting: Provide temporary lighting, as required, with local switching that provides adequate illumination for construction operations and traffic conditions.

2.11. Equipment: Provide equipment throughout construction period for common-use facilities used by all personnel engaged in construction activities.

2.11.1. Provide the following at District Field office:

2.11.1.1. CM Office

2.11.1.1.1. One fax, copy, scan machine with one dedicated phone line.

2.11.1.2. IOR Office

2.11.1.2.1. One fax copy, scan machine with one dedicated phone line.

2.11.1.3. Conference Room

2.11.1.3.1. One telephone with conference and speaker capability: Provide dedicated phone line.

2.11.1.3.2. Provide and install separate High-speed Internet service, modem, and two (2) four-port wireless router for networking hardware/software for use during construction as directed by District's representative.

2.11.1.3.3. Design Builder is responsible to maintain continuous High-speed Internet and telephone service throughout construction.

2.11.1.3.4. Provide an answering machine or voice mail service on all telephones in the District's field office.

2.11.1.3.5. Provide three (3) sets of keys for each door at the trailers.

2.11.1.3.6. District Office and Conference Rooms to have weekly (or more) Janitorial Services.

2.11.1.3.7. District Field Offices shall have one (1) Men's and one (1) Women's interior toilet facilities with hot/cold water. Bottled drinking water with cups shall be provide for the duration of the Project.

2.11.1.4. Provide the following at Design Builder Field office:

2.11.1.4.1. Provide minimum of one (1) Scan/Copy/Print machine.

2.11.1.4.2. Provide separate High-speed Internet service, modem, and four-port wireless router for networking hardware/software for use during construction.

2.11.1.4.3. Design Builder is responsible to maintain continuous High-speed Internet and telephone service throughout construction.

2.11.1.5. In the Field Office, post a list of important telephone numbers.

2.11.1.5.1. Police and fire departments.

2.11.1.5.2. Ambulance service.

2.11.1.5.3. Design Builder's home office.

2.11.1.5.4. Architect's office.

2.11.1.5.5. Engineers' offices.

2.11.1.5.6. District's office.

2.11.1.5.7. Principal sub-Design Builders' field and home offices.

2.11.1.6. Furnish superintendent with an electronic paging device or a portable two-way radio for use when away from field office.

2.11.1.7. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.

3. SUPPORT FACILITIES INSTALLATION

3.1. General: Comply with the following:

- 3.1.1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities in locations approved by the District.
- 3.1.2. Provide incombustible construction for offices, shops, and sheds located within construction area. Comply with NFPA 241.
- 3.1.3. Maintain support facilities until after project final completion and with approval of the District.
- 3.2. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during construction period. Locate temporary roads and paved areas, if required, as indicated on Drawings.
 - 3.2.1. Provide a reasonably level, graded, well-drained subgrade of satisfactory soil material, compacted to not less than 95 percent of maximum dry density in the top 6 inches (150 mm).
 - 3.2.2. Provide gravel paving course of subbase material not less than 6 inches (75 mm) thick; roller compacted to a level, smooth, dense surface.
 - 3.2.3. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
 - 3.2.4. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
 - 3.2.5. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 - 3.2.6. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 2 Section "Earthwork."
 - 3.2.7. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 - 3.2.8. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 2 Section "Hot-Mix Asphalt Paving."
- 3.3. Traffic Controls: Provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
- 3.4. Dewatering Facilities and Drains: Comply with requirements in applicable Division 2 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.
 - 3.4.1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.

- 3.4.2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
- 3.5. Project Identification and Temporary Signs: Prepare a minimum of two (2) Project identification signs not less than 32 square feet in area. Install signs in locations approved by the District to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.
 - 3.5.1. Engage an experienced sign painter to apply graphics for Project identification signs. Comply with details indicated. District to provide project information to be included on signage.
 - 3.5.2. Prepare temporary signs to provide directional information to construction personnel and visitors.
 - 3.5.3. Construct signs of exterior-type Grade B-B high-density concrete form overlay plywood. Support on posts or framing of preservative-treated wood or steel. Do not install signage on any fencing – temporary or permanent.
 - 3.5.4. Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer.
- 3.6. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
 - 3.6.1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
 - 3.6.2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
- 3.7. Professional Cleaning Services: Provide professional cleaning services on a weekly basis for temporary offices, first-aid stations, toilets, and similar areas.
- 3.8. District Field Office: Provide an insulated, weathertight, air-conditioned field office for use as by the District, District's Representative, Inspector of Record, and Architect; of sufficient size to accommodate required office personnel. District field office to contain office for IOR, office for Construction Manager (CM), Project Manager (PM), Project Engineer (PE), Project Administrator (PA) and common meeting area as detailed below. Provide and maintain all new equipment below, including all ancillary supplies required to operate equipment provided under contract. (Such as; copier toner, copy paper, drinking cups, etc).
 - 3.8.1. IOR Office Requirements as follows:
 - 3.8.1.1. Provide a minimum 140 sq. ft. (13 sq. m) office with lockable door.
 - 3.8.1.2. One desk and one ergonomic chair, two four-drawer file cabinets, a plan table, a plan rack, and one bookcase.

- 3.8.1.3. One plain paper fax, copier, scanner, copier model HP Laser Jet M1522n MFP or approved equal with capability to fax multiple pages at a time and print a confirmation page.
 - 3.8.2. CM/PM Office Requirements as follows:
 - 3.8.2.1. Provide a minimum 140 sq. ft. (13 sq. m) office with lockable door.
 - 3.8.2.2. One desk and one ergonomic chair, two four-drawer file cabinets, a plan table, a plan rack, and one bookcase.
 - 3.8.2.2.1.1. Provide one (1) new digital camera with minimum 1 gigabyte storage card.
 - 3.8.2.2.1.1.1. One plain paper fax, copier, scanner, copier model HP Laser Jet M1522n MFP or approved equal with capability to fax multiple pages at a time and print a confirmation page.
 - 3.8.3. PE/PA Office Requirements as follows:
 - 3.8.3.1. Provide a minimum 64 sq. ft. (7.8 sq. m) workstation with overhead storage and task lighting.
 - 3.8.3.2. One desk or worksurface and one ergonomic chair, two four-drawer file cabinets and pencil drawer (lockable), a plan table or worksurface, a plan rack, and one bookcase.
 - 3.8.4. Common Meeting Area:
 - 3.8.4.1. Provide a room of not less than 240 sq. ft. (22.5 sq. m) for Project meetings. Furnish room with conference table suitable for 14 people, 14 folding chairs, 4-foot-by-6-foot- tack board, and 4-foot-by-6-foot- white board.
 - 3.8.4.2. One desk and one ergonomic chair, one four-drawer file cabinet.
 - 3.8.4.3. Water cooler with hot and cold spigot.
 - 3.8.4.4. DB team shall provide a scanner/printer/copier capable of printing B/W and in Color on 8-1/2" x 11" and 11" x 17" paper.
 - 3.8.4.5.
- 3.9. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within building or elsewhere on-site.

4. SECURITY AND PROTECTION FACILITIES INSTALLATION

- 4.1. General: Comply with the requirements of Article 14 of 00 50 00 (Agreement).
- 4.2. Environmental Protection: 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. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from surrounding properties. Design Builder shall perform all work in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations.
- 4.3. Storm Water Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

- 4.4. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees (if identified for protection) to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.
- 4.5. Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain two-year extended warranty for District. Perform control operations lawfully, using environmentally safe materials approved by the District.
- 4.6. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. The Design Builder is required to secure all areas of work and set security alarms when leaving the site.
- 4.7. Barricades, Warning Signs, and Lights: Comply as required with local authorities and State safety ordinances, standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazards. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- 4.8. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 4.8.1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 - 4.8.2. Vertical Openings: Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
 - 4.8.3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 - 4.8.4. Install tarpaulins security using fire retardant treated wood framing and other materials.
- 4.9. Temporary Partitions: Erect and maintain effective dustproof partitions and temporary enclosures to prevent dust and dirt migration into areas of completed construction and to separate areas from fumes, odors and noise. Construction of temporary barriers shall take into consideration existing hazardous materials present in building finishes.
 - 4.9.1. Construct dustproof partitions of not less than nominal 4-inch (100-mm) studs, 5/8-inch (16-mm) gypsum wallboard with joints taped on occupied side, and 1/2-inch (13-mm) fire-retardant plywood on construction side.
 - 4.9.2. Insulate partitions to provide noise protection to occupied areas.
 - 4.9.3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.

- 4.9.4. Protect air-handling equipment.
 - 4.9.5. Weatherstrip openings.
 - 4.9.6. Where the heating, ventilating, and/or air conditioning (HVAC) system and ducting is shared between the construction and completed areas of the Project, either isolate the areas by duct capping or conduct construction operations with ventilation shut down and sealed after hours or weekends.
- 4.10. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
- 4.10.1. Store combustible materials in containers in fire-safe locations.
 - 4.10.2. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
 - 4.10.3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
 - 4.10.4. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
 - 4.10.5. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4.10.6. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

5. OPERATION, TERMINATION, AND REMOVAL

- 5.1. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- 5.2. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
 - 5.2.1. 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.
 - 5.2.2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

- 5.3. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities without District approval
- 5.4. Termination and Removal: Remove each temporary facility when authorized by the District. 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.
 - 5.4.1. Materials and facilities that constitute temporary facilities are the property of Design Builder. District reserves right to take possession of Project identification signs.
 - 5.4.2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 5.4.3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 "Closeout Procedures". If LBP was disturbed during renovation the final cleaning shall meet the minimum requirements of 40 CFR Part 745 in addition to Division 1 "Closeout Procedures".

END OF SECTION

SECTION 01 54 00
SITE SECURITY AND SAFETY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01311 – “Project Management and Coordination”
- C. Section 01312 – “Project Meetings”
- D. Section 01410 – “Regulatory Requirements”
- E. Section 01412 – “Hazardous Materials”
- F. Section 01416 – “Special Procedures”
- G. Section 01500 – “Temporary Facilities and Control”
- H. Section 01770 – “Contract Closeout Procedures”
- I. Section 01780 – “Project Record Documents”
- J. Divisions 2 through 33 Sections for Site Security and Safety requirements for the work in those Sections.

1.3 SUMMARY

- A. This Section specifies the requirements for Site safety and security.

1.4 DESIGN BUILDER RESPONSIBILITIES

- A. The Design Builder is constructive owner of Project site.
- B. The Design Builder 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 Contract and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and work performed until Final Completion by the District.
- C. All work shall be solely at the Design Builder’s risk, with the exception of damage to the work caused by “acts of God” as defined in Public Contract Code Section 7105(b)(2).
- D. The Design Builder shall be solely responsible for initiating, maintaining and supervising all safety programs required by applicable law, ordinance, regulation or governmental orders in connection with the performance of the Contract, or otherwise required by the type or nature of the Work.
- E. Without limiting or relieving the Design Builder of its obligations hereunder, the Design Builder shall require that its Subcontractors similarly initiate and maintain all appropriate or required safety programs. Prior to commencement of Work at the Site, the Design

Builder shall provide the District with the Design Builder's proposed site specific safety plan for the Work for the District's review.

- F. Design Builder shall take, and require all subcontractors to take, all necessary precautions for safety of workers on the Work 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 premises where Work is being performed and to provide a safe and healthful place of employment.
- G. In addition to meeting all requirements of OSHA, Cal-OSHA, state, and local codes, Design Builder shall furnish, erect and properly maintain at all times, as directed by District 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.
- H. The Design Builder and Subcontractors shall continuously protect the Work, the District's property, and the property of others, from damage, injury, or loss arising in connection with operations under the Contract Documents. The Design Builder and Subcontractors, at their own expense, shall make good any such damage, injury, or loss, except such as may be solely due to, or caused by, agents or employees of the District. The Design Builder shall immediately repair or replace all property damaged or lost due to Design Builder's, or Subcontractor's, failure to protect the Work or otherwise caused by Design Builder or Subcontractor operations. A determination as to cause of damage or insurance or risk coverage at any level shall not delay repair or replacement. Design Builder shall not rely on District insurance or risk coverage. If Design Builder or Subcontractor disagrees with the District's determination of cause, a claim may be filed in accordance with these Contract Documents.
- I. Design Builder shall maintain protection as necessary to protect the Work, as a whole and in part, and adjacent property and improvements from accidents, injuries or damage.
- J. Design Builder shall protect the Work, material, and/or equipment to be incorporated therein, whether in storage on or off the Site, and under the care, custody, or control of the Design Builder or the Design Builder's Subcontractors.
- K. Design Builder shall correct any violations of safety laws, rules, orders, standards, 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 promptly.
- L. Design Builder shall require that Subcontractors participate in, and enforce, the safety and loss prevention programs established by the Design Builder for the Project, which will cover all Work performed by the Design Builder and its Subcontractors.
 - 1. Subcontractors shall enforce the District's and the Design Builder's instructions, laws, and regulations regarding signs, advertisements, fires, smoking, the presence of liquor, and the presence of firearms by any person at the Site.
 - 2. Each Subcontractor shall designate a responsible member of its organization whose duties shall include loss and accident prevention, and who shall have the responsibility and full authority to enforce the program. This person shall attend

meetings with the representatives of the various Subcontractors employed to ensure that all employees understand and comply with the programs.

3. All Subcontractors and material or equipment suppliers shall cooperate fully with Design Builder, the District, and all insurance carriers and loss prevention engineers.
4. Subcontractors shall immediately report in writing to the Design Builder all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or off the Site, which caused death, personal injury, or property damage, giving full details and statements of witnesses.

1.5 CONFORMANCE WITHIN ESTABLISHED LIMITS

- A. The Design Builder and Subcontractors shall confine their construction equipment, the storage of materials, and the operations of workers to the limits indicated by laws, ordinances, permits, and the limits established by the District, or the Design Builder in the case of Subcontractors, and shall not unreasonably encumber the premises with construction equipment or materials.

1.6 DESIGN BUILDER NOTICES

- A. The Design Builder shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury, or loss.

1.7 SITE SAFETY OFFICER

- A. Design Builder shall designate a responsible member of its organization on the Work, whose duty shall be to enforce the Design Builder's Safety program Plan, 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. The name and position of person so designated shall be reported to District in writing by Design Builder within ten (10) days of award of the Contract.
- B. District's representative(s) shall be allowed access to accident/injury and illness reports, inspection reports, scheduling and construction meetings, and safety meetings.

1.8 SAFETY PROGRAM PLAN

- A. Prior to commencing Work at the Site, Design Builder shall submit a Safety Program Plan specifically tailored for this Project and this Site that has been reviewed and approved by an Industrial Hygienist certified by the American Board of Industrial Hygiene or a Certified Safety Professional. The Safety Program Plan shall include the name, certification number, and certification seal of the Industrial Hygienist or Certified Safety Professional. Comply with the Safety Program and all applicable federal, state, and local regulation codes, rules, law and ordinances during the course of the Work.
- B. The Design Builder's Safety Program Plan shall include all actions and programs necessary for compliance with California or federally statutorily mandated workplace safety programs, including without limitation, compliance with the California Drug Free Workplace Act of 1990 (California Government Code SS 8350 et seq.)
- C. Plan shall comply with the requirements of the Occupational Safety and Health Act, and other applicable federal, state and local standards.

- D. Design Builder shall keep copies of all health and safety-related plans on the Site at all times.
- E. Receipt and/or review of the Safety Program Plan by District shall not relieve Design Builder of any responsibility for complying with all applicable safety regulations.
- F. It is essential that Design Builder and each Subcontractor implement an effective and vigorous site specific Safety Program for the Work.
- G. The Design Builder shall have sole responsibility for Project safety, and shall be solely responsible for providing a safe workplace
- H. Safety Program Plan Components:
 - 1. Injury and Illness Prevention Program (IIPP): Conforming to the General Industrial Safety Orders (CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 3203), and the California Labor Code (Section 6401.7).
 - 2. Site-Specific Safety and Health Plan (SSHP): This Plan shall describe the health and safety procedures that shall be implemented during the Work in order to ensure safety of the public and those performing the Work. Follow the guidelines for a SSHP listed in CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 5192, Item (b)(4)f.
 - 3. Permit-Required Confined Space Program: (CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 5157). Permit-required space entry is allowed only through compliance with a permit-required confined space program meeting the requirements of Section 5157 of the General Industrial Safety Orders. During entry operations, or at the conclusion of entry operations, verbally notify Engineer of the permit space program followed, and of any hazards confronted or created in permit-required spaces during entry operations.
 - 4. A written and certified workplace hazard assessment as required by OSHA and Cal OSHA, updated on a regular basis, and maintained on site. The certified hazard assessment shall be made available immediately upon request by the District or the Inspector of Record.
- I. Supply sufficient hard hats to properly equip all employees, workers, and visitors. Hard hats shall be mandatory as per CAL OSHA Construction Safety orders.
- J. Whenever an exposure exists, appropriate personal protective equipment (PPE) shall be used by all affected personnel. Design Builder shall provide PPE to all personnel under Design Builder's direction and responsibilities.
- K. After review by District, the implementation and enforcement of all Safety-related plans shall become the responsibility of the Design Builder and Site Safety Officer. The Design Builder shall notify the District in writing of any changes to Safety-related plans.

1.9 SAFETY PRECAUTIONS

- A. The Design Builder shall be solely responsible for initiating and maintaining reasonable precautions for safety of, and shall provide reasonable protection to prevent damage injury or loss to:
 - 1. Employees on the Work and other persons who may be affected thereby
 - 2. The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Design Builder or the Design Builder's Subcontractors or Sub-subcontractors

3. Other property or items at the site of the Work, or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Design Builder shall
 4. take adequate precautions and measures to protect existing roads, sidewalks, curbs, pavement, utilities, adjoining property and improvements thereon (including without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto. Without adjustment of the Contract Price or the Contract Time, the Design Builder shall repair, replace or restore any damage or destruction of the foregoing items as a result of performance or installation of the Work.
 5. The Design Builder shall at all times maintain good housekeeping practices to reduce the risk of fire damage.
 6. Good housekeeping practices shall be maintained continually on all areas of the Site and the Work. District may request that the Design Builder hire additional staff or help until housekeeping in a work or storage area is improved. All scrap materials, rubbish and trash shall be removed daily from in and about the building and shall not be permitted to be scattered on adjacent property.
- B. Suitable storage space shall be provided outside immediate building areas for storing flammable materials and paints. Excess flammable liquids being used inside the building shall be kept in closed metal containers and be removed from the building during unused periods.
 - C. A fire extinguisher shall be available at each location where cutting or welding is being performed. Where electric or gas welding or cutting work is done, interposed shields of incombustible material shall be used to protect against fire damage due to sparks and hot metal. When temporary heating devices are used, a watchman shall be present to cover periods when other workmen are not on the premises.
 - D. The Design Builder shall provide fire extinguishers in accordance with all OSHA and Cal OSHA requirements, and the recommendations NFPA Bulletins Nos. 10 and 241.

1.10 REQUIREMENTS FOR EXISTING SITES

- A. Deliver materials to building area over route(s) approved by the District.
- B. Take preventive measures to eliminate objectionable dust, noise, or other disturbances.
- C. Confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits or direction of District; and not interfere with the Work or unreasonably encumber premises or overload any structure with materials; and enforce all instructions of District regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on the Site.
- D. 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 a licensed land surveyor or civil engineer, and all lawfully required maps and records shall be filed with county and local authorities at no cost to the District. All related filing and plan check fees shall be paid by Design Builder.
- E. Design Builder 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. All permits,

licenses, or inspection fees required for such repair Work shall be obtained and paid for by Design Builder.

- F. The Design Builder, at Design Builder's expense, will remove all mud, water, or other elements as may be required for the proper protection of existing improvements, and prosecution of the Work.
- G. Protect all other property at the Site or adjacent thereto as required, such as trees, shrubs, lawns, walks, pavement, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

1.11 SAFETY AND EMERGENCY CONDITIONS

- A. **Emergency Action:** In an emergency affecting the safety of persons or property, the Design Builder shall take any action necessary, at the Design Builder's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Design Builder on account of an emergency shall be determined as provided herein. Emergency conditions shall be any condition at the Site which has the actual or potential for significant adverse effects to persons or property, whether or not resulting from the Design Builder's operations.
- B. **Accident Reports:** The Design Builder shall promptly report in writing to the District all accidents arising out of or in connection with the Work, which caused death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the District and Campus Police Department.
- C. The District's Representatives and Project Inspector, as appropriate, shall be notified of the existence of such a condition, but shall not be called upon to perform any emergency service. The fact that the District may not respond to the emergency condition shall not be used as an excuse by the Design Builder to neglect immediate action; nor will the District or its Representatives be liable for any resulting condition. The fact that a representative of the Design Builder may not be present when emergency conditions occur shall not relieve the Design Builder from an immediate response to the situation which shall return the disruption to normalcy.
- D. If the emergency circumstances are not the result of any fault or neglect of the Design Builder, the Contract time shall be adjusted to reflect the actual direct effect of such actions to the then critical path of the Construction Progress Schedule. The foregoing notwithstanding, adjustments of the Contract Price or the Contract Time for actions taken by the Design Builder in response to emergency circumstances shall be subject to the Design Builder's strict compliance with all other applicable provisions of the Contract Documents relating to notices and time for delivery of notices.

1.12 SAFETY SIGNS AND BARRICADES

- A. The Design Builder shall erect and maintain, as required by existing conditions and conditions resulting from performance of the Contract, reasonable safeguards for safety and protection of property and persons, including, without limitation, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Districts and users of adjacent sites and utilities.

- B. Design Builder shall properly protect the Work:
 1. With lights, guard rails, fencing, temporary covers and barricades.
 2. Enclose excavations with proper barricades.
 3. Brace and secure all parts of the Work against to protect against inclement weather and to prevent accidents.
- C. Provide such additional forms of protection that may be necessary under during the course of the Work.
- D. Design Builder shall provide and maintain in good condition all protective measures required to adequately protect the public from hazards resulting from the Work. When regulated by Building Code, Cal OSHA, or other authority, such legal requirements for protection shall be considered as minimum requirements. Design Builder shall be responsible for the protection in excess of such minimum requirements as required.
- E. Design Builder shall prevent unauthorized persons from the entering the Work Site(s).

1.13 CONTROL OF SITE

- A. Design Builder shall ensure that no alcohol, firearms, weapons, or controlled substances are present on the Project Site. Design Builder shall immediately remove from the Site and terminate from this Project the employment of any employee found in violation of this provision.

1.14 SITE SECURITY

- A. Design Builder shall take and be fully responsible for all reasonably required measures to protect and maintain the security of persons, existing facilities, and property at the Site, including prevention of theft, loss, and/or vandalism by persons lawfully present on the Site, including non-working times. Design Builder's measures shall include, at a minimum, maintaining a log of all persons entering and leaving the Site, who they represent, what they are delivering, and to whom.
- B. No claim shall be made against District by reason of any act of an employee or trespasser, and Design Builder shall repair all damage to District's property resulting from Design Builder's failure to provide adequate security measures.
- C. But for immediate access to and from the Design Builder controlled Site and staging area(s), the access gates shall remain closed and locked at all times. Design Builder shall appoint one person to monitor access through the gate and maintain the sign-in/out list. Alternatively, Design Builder may provide a full-time security guard at the gate to control access and maintain the sign-in/out list. The sign in/out list shall be available to District at any time, upon request. If District determines that the gate has been left unlocked, Design Builder shall, if requested by District, provide a full time guard at no additional expense to the District.
- D. The Design Builder and the Subcontractors shall use only those ingress and egress routes designated by the District, observe the boundaries of the Site designated by the District, park only in those areas designated by the District, which areas may be on or off the Site, and comply with any parking control program established by the District, such as furnishing license plate information and placing identifying stickers on vehicles.
- E. Design Builder shall supply all security fencing, barricades, lighting, and other security measures as required to protect and control the Site.

- F. The Design Builder shall be responsible for providing security services for the Site as needed for the protection of the Site and as determined in the District's sole discretion.

1.15 OPERATORS OF MOBILE EQUIPMENT SAFETY

- A. Under Federal and State Safety requirements, Design Builder must certify that all operators of mobile equipment including but not limited to forklifts, cranes, man-lifts, scissor and boom lifts, and similar equipment are required to have been trained and/or certified on the proper operation of such equipment. Copies of equipment training and certification records shall be forwarded, upon request, to the District.

1.16 SAFETY REQUIREMENTS

- A. Design Builder shall meet and comply with requirements of current local, State and Federal regulations.
- B. Design Builder shall meet and comply with the following rules:
 - 1. The Design Builder will provide and maintain at the Site first-aid supplies that comply with the current Occupational Safety and Health Regulations.
 - 2. Hard hats shall be worn at all times. (This includes welders when using welding hoods)
 - 3. Sleeved shirts shall be worn at all times. (No tank tops)
 - 4. If required, Fire Retardant Clothing (FRC) shall be supplied by Design Builder for all their employees.
 - 5. One Hundred Percent (100%) Fall Protection Policy: All subcontract employees shall comply with Fall Protection Policy. The Policy simply states "Anytime employees are working from an unprotected elevation of six (6) feet or more, fall protection must be used." Working, as stated above, means while traveling, stationary, or anytime exposed to a fall from a surface not protected by approved handrails, cable or some other approved fall elimination device. Adherence to this policy is a requirement of your Subcontract.
- C. Hazards Control:
 - 1. When use or storage of any hazardous materials or equipment, or unusual method is necessary for execution of the Work, the Design Builder shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Design Builder shall notify the District any time that explosives or hazardous materials are expected to be stored on Site. Location of storage shall be coordinated with the District and local fire authorities.
 - 2. Store volatile wastes in covered metal containers and remove from premises daily.
 - 3. Prevent accumulation of wastes that create hazardous conditions.
 - 4. Provide adequate ventilation during use of volatile or noxious substances.
- D. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish or waste material on the Site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

- E. Provide accident information on the forms provided by Design Builder. This information shall be provided on the same day as the occurrence of said incident and shall be submitted to District within a reasonable time.

1.17 ADDITIONAL SAFETY CONTROLS

- A. According to industry practices, it is the responsibility of the Design Builder and subcontractors of every tier to exercise reasonable care to prevent work-related injuries and property and equipment damage at the Site, as well as minimize risk to the public and third-party property. The Design Builder, all sub-contractors, suppliers, and installers shall undertake loss control prevention practices according to the requirements set forth by federal, state and city laws, statutes, and the specific procedures developed for this Project.
- B. Contractors and subcontractors participating in the project will be expected to comply with the following safety and loss control requirements:
 - 1. All sub-contractors, suppliers, and installers shall identify their contact person(s) to the Design Builder.
 - 2. Follow District procedures regarding dealing with the media, including, but not limited to, TV, Radio, and Newspaper.
 - 3. All construction employees will be required to be attired in workpants, shirt and appropriate boots or closed toe shoes.
 - 4. Smoking is prohibited on the Site.
 - 5. Controlling access to the construction site is a very high priority, and Contractors will be required to take whatever preventative measure, such as barriers, fencing, etc., as outlined in the Contract Documents.
 - 6. Construction personnel cannot enter District property other than the construction site unless accompanied by District personnel, and they are allowed only 'incidental' contact with students. Violations of these requirements by any construction employee will result in a mandatory background check of that employee – including fingerprinting – as required by state law.
 - 7. Fall protection is mandatory on all projects in accordance with CAL OSHA, OSHA and any other Local, State, and Federal appropriate code and requirements.
 - 8. Personal radios, headsets, walkmans and CD players are not allowed on the Site.
 - 9. All Contractors must attend the pre-construction safety meeting.
 - 10. No sexual reference or preference shall be permitted on any piece of clothing or the hardhat. Any employee observed disregarding this policy shall be removed from the Site until further notice from the District.
 - 11. Design Builder personnel and subcontractor personnel at all levels will refrain from interacting with Campus staff or students unless required to prevent an unsafe situation. Personnel found speaking to staff or students for any reason unrelated to the Work or Safety shall be removed from the Site and not be allowed to return.
 - 12. All Contractors' employees shall park in their designated parking area. Any sticker attached to the employees' vehicle that displays any form of sexual preference or reference shall be removed prior to parking at the Site. Each employee will provide their license plate number to the Design Builder. Any employee disregarding this policy shall be removed from the Site until further notice from the District.

13. The Design Builder shall control the break time activities of the employees to assure the cleanup of all soda cans, food wrappers, plastic bottles, or food containers from the break area. Such areas shall be cleaned immediately after the break and all waste placed in trash receptacles.
 14. Theft or willful damage to any property of the District, student, or other Campus or District personnel will be prosecuted fully by the District.
 15. No guns, switchblades, or knives with blades greater than two inches shall be allowed on the Site. Any employee disregarding this policy shall be removed from the Site until further notice from the District.
- C. The Design Builders and all subcontractors, suppliers and installers participating in the Project will further be expected to comply with the following safety and loss control requirements:
1. All Design Builder, subcontractors, supplier, and installer personnel shall comply with all District, local, state, and federal emergency responder directions in the event of an emergency or disaster.
 2. Any Design Builders' employee observed providing or selling cigarettes or other smoking materials to students shall be removed from the Site until further notice from the District.
 3. All Contractors will agree to conduct and fund post-injury drug screening of their employees. Those employees failing the test will be removed permanently from the Site.
 4. The District has the right to instruct the Design Builder to correct an unsafe act or condition. If the Design Builder fails to correct the unsafe act or condition within the requested time frame, the District or its representative may have the condition corrected and bill the non-compliant contractor, supplier, subcontractor, or installer for the costs associated with the correction.
 5. The District may require a follow-up meeting or contact if there is a death, serious and willful claim, serious disabling injury, adverse loss experience, major fire, or serious third party claim.
 6. Any contractor displaying, in the opinion of the Contractor or District, a repeated disregard for safety can be removed from the Site.
- D. All Contractors will advise those non-English speaking employees in their native language either in a written format or via an interpreter of these policies.

1.18 HAZARD COMMUNICATION PROGRAM SAFETY

- A. Design Builder shall have a copy of the Design Builder's Hazard Communication Program which shall be forwarded to the District and a copy is required to be in the possession of the Contractor on the Site. Documentation of employee Hazard Communication Training must be established by the Design Builder prior to commencement of work.
- B. Any potential hazardous material or chemical brought onto the project is required to be accompanied by a Material Safety Data Sheet (MSDS). Copies of the MSDS shall be forwarded to the District, and Project Inspector before the product is brought onto the Site.
- C. Design Builder is required to have material safety data sheets available in a readily accessible place at the Site for any material requiring a material safety data sheet per the

Federal “hazard communication” standard, or employees’ “right-to-know law.” The Design Builder is also required to properly label any substance brought into the Site, and require that any person working with the material, or within the general area of the material, is informed of the hazards of the substance and follows proper handling and protection procedures.

- D. Design Builder is required to comply with the provisions of California Health and Safety Code section 25249, et seq., which requires the posting and giving of notice to persons who may be exposed to any chemical known to the State of California to cause cancer. The Design Builder agrees to familiarize itself with the provisions of this section, and to comply fully with its requirements.
- E. Design Builder shall notify the District and Project Inspector before any chemical/material creating noxious or toxic fumes is used.

1.19 SHORING AND STRUCTURAL LOADING

- A. The Design Builder shall not impose structural loading upon any part of the Work under construction or upon existing construction on or adjacent to the Site in excess of safe limits, or loading such as to result in damage to the structural, architectural, mechanical, electrical, or other components of the Work.
- B. The design of all temporary construction equipment and appliances used in construction of the Work and not a permanent part thereof, including, without limitation, hoisting equipment, cribbing, shoring, and temporary bracing of structural steel, is the sole responsibility of the Design Builder. All such items shall conform with the requirements of governing codes and all laws, ordinances, rules, regulations, and orders of all authorities having jurisdiction.
- C. The Design Builder shall take special precautions, such as shoring of masonry walls and temporary tie bracing of structural steel work, to prevent possible wind damage during construction of the Work. The installation of such bracing or shoring shall not damage the Work in place or the Work installed by others. Any damage which does occur shall be promptly repaired by the Design Builder at no cost to the District.
- D. The Design Builder is required to provide shoring as required to protect existing buildings and other structures. All shoring to protect existing structures shall be designed by a licensed California Structural Engineer and submitted to the District prior to any work occurring in the vicinity of the existing structure(s). Design Builder shall also be responsible to place monitoring points by a California Licensed Surveyor prior to the start of work to monitor any possible movement during the course of construction. Prior to, during and after nearby utilities have been installed, the Design Builder’s California Licensed Surveyor shall survey the pre-established survey points to confirm existing structures did not move during the installation of the nearby utility work.
- E. The Design Builder is responsible to provide all temporary shoring for utility trenching activities, and other temporary shoring as required by law to install new improvements. All temporary shoring noted above shall be designed by a California Licensed Civil Engineer, other than the structural shoring required by a Licensed Structural Engineer in Paragraph 1.19D above.

1.20 SAFETY AND ELECTRICAL STANDARDS

- A. The Design Builder shall comply with all safety and electrical standards to ensure that all its employees are protected by Ground Fault Circuit interrupters as required, throughout the course of the Design Builder’s work.
- B. The Design Builder is responsible for installation of any and all temporary power service for the project and shall provide it with Ground Fault Interrupter Protection with no additional cost to the District.

1.21 HAZARDOUS SUBSTANCES

- A. No asbestos or asbestos-containing products shall be used in this construction or in any tools, devices, clothing, or equipment used to effect this construction. See Section 01412, Hazardous Materials and other related Contract Documents.
- B. The Design Builder shall not receive, use or store at the Site any hazardous substance unless contained in a container labeled with the original label applied by the Manufacturer of such substance. The Design Builder shall maintain at the Site and forward to the District and Project Inspector copies of the most current material safety data sheets with respect to each hazardous substance received, used or stored at the Site by the Design Builder.
- C. The Design Builder shall immediately forward to the District and Project Inspector any updated material safety data sheets.
- D. The Design Builder shall properly label and inform the District and Project Inspector of, any pipes or piping systems containing hazardous substances used or maintained at the Site by the Design Builder. Prior to the receipt of such materials at the Site, the Design Builder shall submit a list of all materials which the Design Builder intends to receive, use or store at the Site that are classified as hazardous substances pursuant to applicable federal, state or local Employee or Community Right to Know statutes, regulations or requirements.

1.22 SAFETY SURVEYS

- A. Inspector of Record may conduct periodic safety surveys of the Project. Any safety discrepancy observed will be reported to the appropriate Design Builder Site Safety Representative for immediate correction.
- B. District and/or Inspector of Record safety surveys do not, without any limitation, relieve the Design Builder of their primary responsibility to self-inspect the Work and equipment, and to conduct the Work in a safe manner.
- C. Design Builder shall provide the District, and Project Inspector with Monthly Design Builder Accident Statistics Reports.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01 54 00

SECTION 01 57 20

STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED DOCUMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01050 – “Field Engineering”
- C. Section 01330 – “Submittal Procedures”
- D. Section 01410 – “Regulatory Requirements”
- E. Section 00700 - General Conditions Article 13.12, Storm Water Pollution Prevention
- F. Divisions 2 through 33 Sections for Storm Water Prevention Plan requirements for the work in those sections.

1.3 BACKGROUND

- A. Storm drains discharge directly to creeks and the Bay without treatment. Discharge of pollutants (any substance, material, or waste other than uncontaminated storm water) from this project into the storm drain system is strictly prohibited by the State Water Resources Control Board (SWRCB) Order 2009-0009 DWQ (Order) and California Regional Water Quality Control Board (RWQCB) Water Quality Control Plan San Francisco Bay Basin Plan (Basin Plan).
- B. This specification is applicable to this Project since it will disturb (e.g., digging, trenching, grading, clearing, filling) one or more acres of land surface. Design Builder shall calculate and confirm the disturbed soil acreage and submit calculations to the District.
- C. This specification also covers Linear Underground/Overhead Projects as regulated by the Order.
- D. Area of land surface disturbance includes but is not limited to:
 - 1. Clearing of the land both for access (i.e. access roads) to the site as well as preparing the site for constructing the project,
 - 2. Constructing access roads to the Site,
 - 3. Grading of the Site in total,

4. Equipment staging area, maintenance area, and construction easement if they occur atop a soil surface which has not been included in the calculation for area of soil disturbance,
5. Material and/or soil stockpiles if atop a soil surface (not if atop an impervious surface such as concrete or asphalt),
6. Area of asphalt or concrete pavement removal if it is removed entirely to the soil surface,
7. Area that is related to demolition and removal of existing structures if that demolition and removal is to the soil surface.
8. Concrete truck clean-out areas if atop a soil surface.

1.4 SUMMARY OF WORK

- A. Provide storm water pollution prevention plan as specified and as required by appropriate regulatory authorities, complete.
- B. Work In this section includes all labor, equipment, and materials necessary for the preparation, implementation, maintenance, and monitoring of the Storm Water Pollution Prevention Plan (SWPPP). Principal items of work included herein include, but are not limited to:
 1. Plan administration, maintenance, update, and termination.
 2. Placement of erosion/pollution control devices (where applicable).
 3. Maintenance and monitoring of control devices.
 4. Miscellaneous related work necessary for plan compliance.
 5. Reports and certificates.
 6. Monitoring and associated report (based on Risk Level).
- C. Work under all other sections of this specification shall comply with the requirements of this section. All trades working on the Project need to be aware of and in compliance with the SWPPP.
- D. All materials that can potentially enter and/or pollute storm water discharges and the generation of non-storm water discharges shall be in compliance with the SWPPP. Representative materials and procedures include erosion control of construction vehicles and equipment, and general construction debris potentially entering the storm drain system's natural flow course.

1.5 REQUIREMENTS

- A. The State Water Resources Control Board uses the Storm Water Multiple Application and Report Tracking System (SMARTS) SMARTS web based application for storm water permit processing and tracking. The Design Builder shall input data and upload documents required for storm water permit compliance. The program is also responsible for processing, reviewing, updating, terminating Notices of Intent (NOIs), annual reports, and maintaining the billing status of each discharger. SMARTS has been developed to provide an online tool to assist dischargers in submitting their NOIs, NECs, NOTs, and Annual Reports, as well as, viewing/printing Receipt Letters, monitoring the status of submitted documents, and viewing their application/renewal fee statements. The system will also allow the Regional Board and State Board staff to process

and track the discharger submitted document is a user account and password protected system where a valid user account and password is needed to access the system. Prepare Permit Registration Documents according to the requirements found in this section. Electronically submit these documents to the District at least 15 working days prior to the land surface disturbance at the Site. Once the documents.

SMARTS is a user account and password protected system where a valid user account and password is needed to access the system. Prepare Permit Registration Documents according to the requirements found in this section. Electronically submit these documents to the District at least 15 working days prior to the land surface disturbance at the Site. Once the documents are approved, the Design Builder shall upload the required data and documents to the SMARTS web site.

- B. Provide a Qualified Storm-Water Pollution Prevention Plan (SWPPP) Practitioner (QSP) for SWPPP implementation as defined in the Order. Refer to the specific requirements as shown within the SWRCB General Construction Permit and regulations). The QSP shall input and maintain data and documents in the SMARTS web site to ensure compliance with the state storm permit at all times.
- C. Provide all material, labor, equipment, for installation, implementation, and maintenance of all surface-water pollution prevention measures. This work includes the following:
 - 1. Furnishing, placing, and installing effective measures for preventing erosion and runoff of soil, silts, gravel, hazardous chemicals or other prohibited materials defined by the SWRCB and RWQCB.
 - 2. Managing on-site construction materials in such a manner as to prevent said materials from contacting storm water or wash water and running off-site into the storm drain system.
 - 3. Complying with applicable standards and regulations for water pollution and erosion control.
 - 4. Include post-construction storm water pollution prevention structures in the storm water pollution prevention plan. Design Builder shall use construction drawings as the reference for post-construction BMPs.
- D. Design Builder will not be required to maintain post-construction pollution prevention structures.
However, Design Builder is required to provide operations and maintenance documents to the District at the end of construction.
- E. In this section, the term "storm drain system" shall include storm water conduits, storm drain inlets and other storm drain structures, street gutters, channels, watercourses, creeks, lakes, and the San Francisco Bay.
- F. Sanitary sewer discharge regulations are intended to provide protection of the sanitary sewer system and appropriate municipal utility water pollution control plant. In this specification, "sanitary sewer" shall include any sanitary sewer manhole, clean-out, side sewer or other connection to the area wastewater treatment plant.
- G. Design Builder shall have storm drain pollution prevention measures in place and follow this specification anytime rain is predicted in the San Francisco Bay Area by the National Oceanic

and Atmospheric Administration (NOAA) prediction for rain at or above 50%. It is the responsibility of the Design Builder to be prepared for a rain event at all times required by the Order, to be aware of weather predictions, and to perform actions triggered by prediction of such rain events. The District is not responsible for informing the Design Builder of rain predictions.

In the event the Project is determined to be a Risk Level two or higher project by the Design Builder's QSP, the Design Builder must create a Rain Even Action Plan (REAP) anytime rain is predicted (50% or greater chance as mentioned above) within 48 hours. The QSP must implement the REAP and have it on-site no later than 24 hours prior to the rain event.

- H. Construction site sanitary sewer blockage will likely result in a back-up and overflow to the storm drain system. The Design Builder shall immediately notify the District and the Project Inspector of record if there is a clogged sanitary sewer, and implement a plan to re-direct sewage if an overflow of the sanitary sewer will result in sewage discharge to the storm drain.
- I. Design Builder shall not allow any non-storm water to enter the storm drain system. Non-storm water includes domestic supply water used to wash streets, painting and drywall equipment, tools, equipment, or vehicles. Except for certain fire-line flushing and testing procedures, contact the District for discharge approval.

1.6 REGULATIONS AND STANDARDS

- A. Design Builder shall comply with the following applicable regulations:
 - 1. Clean Water Act, United States Environmental Protection Agency, and Porter-Cologne Clean Water Act, State of California.
 - 2. "San Francisco Bay Basin (Region 2) Water Quality Control Plan" (Basin Plan), California Regional Water Quality Control Board,
 - 3. California State Water Resources Control Board NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES, Order 2009- 0009 DWQ (Order) and all Amendments.
- B. Design Builder shall comply with industry-standard guidelines on storm drain pollution prevention, such as:
 - 1. "Erosion and Sediment Control Field Manual" California Regional Water Quality Control Board (RWQCB)—San Francisco Bay Region.
 - 2. 2009 CASQA Construction BMP Handbook, available electronically at the California Stormwater Quality Association (CASQA) interactive web portal.

1.7 SUBMITTALS/DELIVERABLES

- A. Prepare Permit Registration Documents (PRD) according to the requirements found in Attachment B of the Order. Submit these documents to the District electronically at least 20 working days prior to the soil disturbance at the Site. Some or all of the following documents may be required, depending on the site Risk calculation, monitoring requirements, construction phase storm water treatment systems, and post-construction storm water treatment structures:

1. Storm Water Pollution Prevention Plan created by the QSD
 2. Site Map
 3. Post-construction water balance form
 4. Risk Calculation
 5. Active Treatment Systems plans (based on Risk Level determined in PRD)
 6. Others as may be required by the State Water Resources Control Board Order 2009 0009 DWQ.
 7. Erosion control and water pollution control drawings based on actual construction phasing and staging locations. Design Builder shall use construction drawings and requirements from the construction general permit as the reference for these drawings.
- B. The Notice of Intent (NOI) will be completed by the District following electronic upload of the approved documents to the SMARTS web site by the Design Builder.
- C. Monitoring Reports. Monitoring sampling results reports are mandated according to the Risk Level and specific characteristics of the Site as prescribed in the Order. Design Builder shall determine the required monitoring reports according to the Order and submit a list of such documents to the District and the SMARTS database. When the Project is underway, the Design Builder shall produce the mandated reports electronically and submit them to the District and SMARTS electronically within 2 days of the conclusion of the rain event, and within 1 day of Numeric Action Level exceedance.
- D. Annual Reports. Design Builder shall determine the required information according to the Order and electronically submit the Annual Report electronically to the District and the SWRCB via SMARTS database.
- E. Notice of Termination. Design Builder shall determine the required information according to the Order and electronically submit Notice of Termination documents to the District and the SWRCB via the SMARTS database.
- F. Complete and provide the Post-Construction Water Balance Performance Standard Spreadsheet as found in Appendix 2/2.1 of the Order.

1.8 ENVIRONMENTAL ENFORCEMENT

- A. State, regional, and local agencies have authority to enforce, through codified regulations, any portions of this Section that if not implemented may violate applicable regulations. Agency enforcement may include but is not limited to: citations, orders to abate, bills for cleanup costs and administration, civil suits, and/or criminal charges. Contract compliance action by the District shall not be constructed to void or suspend any enforcement actions by these or other regulatory agencies.

PART 2 - MATERIALS

2.1 GENERAL

- A. Provide materials as required for execution of the Work required by the approved Stormwater Pollution Prevention Plan, prepared by the QSD

PART 3 - EXECUTION

3.1 GENERAL

- A. Report any hazardous or unknown material spills immediately to a District Representative. If a spill occurs after hours or on a weekend, contact the campus Police Department. The Design Builder is responsible for ensuring that its employees and subcontractors (if any) working on site are aware of the location of the campus phone nearest the Site. The Design Builder is also responsible for creating the necessary spill reports outlined in the construction general permit and must upload them to SMARTS.
- B. Adhere to the requirements of the Order.

3.2 SPILL PREVENTION AND CONTROL

- A. The Design Builder shall keep spill cleanup materials, such as rags or absorbents, readily accessible on-site.
- B. The Design Builder shall immediately contain and prevent leaks and spills from entering storm drains, and properly clean up and dispose of the waste and cleanup materials. If the waste is hazardous, the Design Builder shall dispose of hazardous waste only at authorized and permitted Treatment, Storage, and Disposal Facilities, and use only licensed hazardous waste haulers to remove the waste off-site, unless quantities to be transported are below applicable threshold limits to transportation specified in State and Federal regulations.
- C. The Design Builder shall not wash any spilled material into streets, gutters, storm drains, or creeks and shall not bury spilled hazardous materials.
- D. The Design Builder shall report any hazardous materials spill to Emergency 911.

3.3 DE-WATERING AND SEDIMENT MANAGEMENT AND NONHAZARDOUS MATERIAL/WASTE MANAGEMENT

- A. If storm water or groundwater in site excavations or drilled holes, (e.g., trenches, pits, pier holes, footings), needs to be removed, it shall be made clean by filtering, settling, or other method capable of removing solids and suspended particles from this water prior to discharge to the storm drain system. The Design Builder shall ensure that this discharge complies with all

applicable provisions of the Basin Plan.

- B. If excavation water is domestic supply water, or the water is contaminated with a hazardous substance, then the Design Builder shall dispose of according to guidance from the District. For disposal authorization, the Design Builder shall contact the District to determine the discharge requirement.
- C. If the Design Builder suspects the presence of contaminated groundwater, or domestic supply water, the Design Builder shall immediately notify the District. The Design Builder shall not attempt to pump out or treat any material suspected of containing a hazardous material or petroleum product.
- D. Designated Area:
 - 1. The Design Builder shall propose designated areas of the Site, for approval by the Engineer, suitable for material delivery, storage, and waste collection that, to the maximum extent practicable, are near construction entrances and away from catch basins, gutters, drainage courses, and creeks.
- E. Granular Material:
 - 1. The Design Builder shall store granular material at least ten feet away from catch basin and curb returns.
 - 2. The Design Builder shall not allow granular material to enter the storm drains or creeks.
 - 3. When rain is forecast within 24 hours or during wet weather, the Engineer shall require the Design Builder to cover granular material with a tarpaulin and to surround the material with sand bags
- F. Dust Control: The Design Builder shall use reclaimed water if available to control dust on a daily basis or as directed by the QSP. If reclaimed water is not available, Design Builder to use domestic water.

3.4 HAZARDOUS MATERIAL/WASTE MANAGEMENT

- A. Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with City, State and Federal regulations.
- B. Store hazardous materials and wastes in secondary containment and cover them during wet weather.
- C. Follow manufacturer's application instructions for hazardous materials and do not use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- D. Arrange for appropriate disposal of all hazardous waste.
- E. See Specification Section 01412, Hazardous Materials for more information and requirements.

3.5 SANITARY SEWER DISCHARGE POINT IDENTIFICATION

- A. If the Design Builder will be disposing of water from a settling operation, or any other water approved by the District for sanitary sewer disposal, the Design Builder will verify with the Buildings and Grounds Department that the manhole used for disposal is a sanitary sewer and not a storm drain. (Note: do not assume that a manhole is a sanitary sewer, even if the words “sanitary sewer” is embossed on it. Sometimes utility maps and manhole cover designations are incorrect.)

3.6 WATER MAIN AND SANITARY SEWER LINE BREAK CONTINGENCY PLAN

- A. If working on or near a water main line or sanitary sewer line, the Design Builder shall have a written emergency response plan that states procedures for responding to a break and release of supply water to the storm drain system. This plan shall be made part of the SWPPP. The Design Builder shall meet the following requirements:
1. Water Main Work
 - a. Determine the direction of water flow if the main were to break.
 - b. Build a containment berm between the work area and the storm drain inlet(s) that the water would flow into. Make the containment structure large enough to hold the water so that it can be pumped to a sanitary sewer.
 - c. Build this containment structure before digging.
 - d. If there is a water main break, pump the water that collects in the containment structure to a sanitary sewer.
 - e. If the containment fails, prevent chlorinated water from entering the storm drain system.
 - f. Put in place, before digging, sediment control structures upstream of drain inlets and at drain inlets.
 - g. If a break occurs, contact the District and Project Inspector of record immediately.
 - h. Include in the plan the phone numbers of the District and Project Inspector contact information.
 2. Sanitary Sewer Line Work.
 - a. Determine where the sewage will flow if the work could cause a blockage.
 - b. Build a containment structure between the work area and the storm drain inlet(s) that the sewage water would flow into. Make the containment structure large enough to hold the sewage flow so that it can be pumped to a sanitary sewer.
 - c. Build the containment before working on the sewer line. Put in place, before digging, solids (toilet paper, etc.) control structures upstream of drain inlets and at drain inlets.
 - d. If a sewage blockage occurs, pump it to a sanitary sewer, and do not allow it to flow into the storm drain system.
 - e. If the containment fails, prevent chlorinated water from entering the storm drain system by placing dechlorination sodium sulfite tablets in the sewage according to Attachment 2 of this Section).
 - f. If a sewage blockage or spill occurs contact the District and Project Inspector of record immediately.
 3. Excavation Work. This Paragraph applies to Design Builders that excavate in the vicinity of sanitary sewer lines and cause or discover a sewage spill, leak or blockage. a. Immediately

notify the District. The District will immediately notify Project Inspector. Include in the plan the phone numbers of the District and Project Inspector contact information.

3.7 PAVING OPERATIONS

- A. Project Site Management:
1. When rain is forecast within 24 hours or during wet weather, the District or the QSP may prevent the Design Builder from paving.
 2. The QSP may direct the Design Builder to protect drainage courses by using control measures, such as earth dike, straw bale, straw wattles, and sand bag, to divert runoff or trap and filter sediment.
 3. The Design Builder shall place drip pans or absorbent material under paving equipment when not in use.
 4. The Design Builder shall cover catch basins and manholes when paving or applying seal coat, tack coat, slurry seal, or fog seal.
 5. If the paving operation includes an on-site mixing plant, the Design Builder shall comply with the County's General Industrial Activities Storm Water Permit requirements.
- B. Paving Waste Management: The Design Builder shall not sweep or wash down excess sand (placed as part of a sand seal or to absorb excess oil) into gutters, storm drains, or creeks. Instead, the Design Builder shall, either collect the sand and return it to the stockpile, or dispose of it in a trash container. The Design Builder shall not use water to wash down fresh asphalt concrete pavement.

3.8 SAW CUTTING

- A. During saw cutting, the Design Builder shall cover or barricade catch basins using control measures, such as filter fabric, straw bales, sand bags, and fine gravel dams, to keep slurry out of the storm drain system. When protecting a catch basin, the Design Builder shall ensure that the entire opening is covered.
- B. The Design Builder shall vacuum saw cut slurry and pick up the waste prior to moving to the next location or at the end of each working day, whichever is sooner.
- C. If saw cut slurry enters catch basins, the Design Builder shall remove the slurry from the storm drain system immediately.

3.9 CONTAMINATED SOIL MANAGEMENT

- A. The Design Builder shall look for contaminated soil as evidenced by site history, discoloration, odor, differences in soil properties, abandoned underground tanks or pipes, or buried debris. If the Project is not within an area of known soil contamination and no evidence of soil contamination is found, then testing of the soil shall only be required if directed by the District.
- B. If the Project is within an area of known soil contamination or evidence of soil contamination is found, then soil from grading or excavation operations shall be tested by the District's testing agency. The soil shall be managed as required by designated agency.

3.10 CONCRETE, GROUT, AND MORTAR WASTE MANAGEMENT

- A. Material Management: The Design Builder shall store concrete, grout, and mortar away from drainage areas and ensure that these materials do not enter the storm drain system.
- B. Concrete Truck/Equipment Wash Out:
 - 1. The Design Builder shall not wash out concrete trucks or equipment into streets, gutters, storm drains, or creeks.
 - 2. The Design Builder shall perform washout of concrete trucks or equipment off-site.

3.11 PERSONNEL TRAINING

- A. The Design Builder shall train its employees working on the Site on the requirements contained in this Section. The Design Builder shall document this training in writing. District representatives for the Site will request to see the training materials and records at the onset of work.
- B. The Design Builder shall inform all subcontractors (if any) of the water pollution prevention requirements contained in this specification and include appropriate subcontract provisions to ensure that these requirements are met.

3.12 LIST OF DESIGN BUILDERS DESIGNATED SWPPP CONTACTS AND PHONE NUMBERS

- A. Provide a list of employees who will be responsible for preparing, implementing and updating the SWPPP, including, but not limited to, the name of the QSD and the Design Builder's QSP.

END OF SECTION 01 57 20

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and product substitutions.

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 42 00 (References) for applicable industry standards for products specified.

1.1.2.2 Section 01 77 00 (Cleaning and Closeout Procedures) for submitting warranties for Contract closeout.

1.2 DEFINITIONS

1.2.1 Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1.2.1.1 Refer to District Standards and Criteria Documents for Sole Source Material or Equipment.

1.2.1.2 Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

1.2.1.1 New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

1.2.2 Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Design Builder, as allowed in Section 00 10 00 (Request for Proposals).

1.2.2.1 The following are not considered substitutions:

1.2.2.1.1 Revisions to Contract Documents requested by the District's Representative.

- 1.2.2.1.2 Specified options of products and construction methods included in Contract Documents.
- 1.2.2.1.3 The Design Builder's determination of and compliance with governing regulations and orders issued by governing authorities.

1.2.2.2 Design Builder will be held responsible for: (a) all costs and claims arising from any cost or schedule impact resulting from the District's approval of a requested substitution and (b) all costs and claims arising from any cost or schedule impact resulting from any substitution not approved by the District.

1.3 SUBMITTALS

1.3.1 See Section 01 33 00 (Submittal Procedures).

1.3.2 Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1.3.2.1 Coordinate product list with Design Builder's Contract Schedule and the Submittals Schedule.

1.3.2.2 Form: Tabulate information for each product under the following column headings:

1.3.2.2.1 Specification Section number and title.

1.3.2.2.2 Generic name used in the Contract Documents.

1.3.2.2.3 Proprietary name, model number, and similar designations.

1.3.2.2.4 Manufacturer's name and address.

1.3.2.2.5 Supplier's name and address.

1.3.2.2.6 Installer's name and address.

1.3.2.2.7 Projected delivery date or time span of delivery period.

1.3.2.2.8 Identification number on Contract Schedule network.

1.3.2.2.9 Identification of items that require early submittal approval for scheduled delivery date.

1.3.2.3 Product List: Within sixty (60) Days after date of commencement of the Work, submit five (5) physical copies of product list and submit one (1) electronic copy. Include a written explanation for omissions of data and for variations from Contract requirements.

1.3.2.4 District's Action: District will respond in writing to Design Builder within fifteen (15) Days of receipt of each product list. District's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. District's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

1.3.3 QUALITY ASSURANCE

1.3.4 Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

1.3.5 Compatibility of Options: If Design Builder 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.

1.3.6 Underwriter's Laboratories, Inc. ("UL") Label: Where laboratory standards have been established and label service is available, materials and equipment shall bear the appropriate UL, Warnock-Hersey, or Factory Mutual label.

1.3.7 Manufacturers' Trademarks and Names: District's Representative reserves the right to review and request the removal or redesign of manufacturers' trade marks and names on items of material and equipment that will be exposed to view in the completed Work. Such removal or redesign shall be completed with no adjustment to the Stipulated Sum.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

1.4.1 Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

1.4.2 Delivery and Handling:

1.4.2.1 Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

1.4.2.2 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.

1.4.2.3 Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

1.4.2.4 Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

- 1.4.2.5 Reject delivery of damaged or defective items. Promptly remove damaged or defective products from the Project site and replace with new at no change to the Stipulated Sum.

1.4.3 Storage:

- 1.4.3.1 Store products to allow for inspection and measurement of quantity or counting of units.
- 1.4.3.2 Store materials in a manner that will not endanger Project structure.
- 1.4.3.3 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.
- 1.4.3.4 Store cementitious products and materials on elevated platforms.
- 1.4.3.5 Store sand, rock, or aggregate materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- 1.4.3.6 Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
- 1.4.3.7 Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
- 1.4.3.8 Protect stored products from damage.
- 1.4.3.9 Periodically inspect stored products to assure that products are maintained under specified conditions and are free from damage and deterioration.
- 1.4.3.10 The use of mechanical or electrical rooms for storage of materials is prohibited.

1.4.4 Imported Materials and Products:

- 1.4.4.1 Imported materials and products require special handling in shipping crates. Document and examine materials at the following points:
 - 1.4.4.1.1 At the origination point prior to crating.
 - 1.4.4.1.2 At the port of embarkation (for damage to crates).
 - 1.4.4.1.3 At the port of entry (for damage to crates).
 - 1.4.4.1.4 Immediately following delivery to the Site.

- 1.4.4.2 If crates show signs of damage, open them and inspect materials and products.
- 1.4.4.3 Reject damaged or defective products or materials, and replace promptly.
- 1.4.4.4 Provide detailed Bill of Goods at each point listed above, indicating quantity and condition of each item. At port locations, Bill of Goods may be accepted unless damage is observed.

1.5 PRODUCT WARRANTIES

- 1.5.1 Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Design Builder of obligations under requirements of the Contract Documents.
 - 1.5.1.1 Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to District.
 - 1.5.1.2 Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for District.
- 1.5.2 Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 - 1.5.2.1 Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 1.5.2.2 Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
- 1.5.3 Submittal Time: Comply with requirements in Section 01 77 00 (Closeout Procedures).

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- 2.1.1 General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
 - 2.1.1.1 Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

- 2.1.1.2 Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 2.1.1.3 District reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 2.1.1.4 Where products are accompanied by the term “as selected,” District will make selection.
 - 2.1.1.5 Where products are accompanied by the term “match sample,” sample to be matched is District’s.
 - 2.1.1.6 Descriptive, performance, and reference standard requirements in the Specifications establish “salient characteristics” of products.
 - 2.1.1.7 Or Equal: Where products are specified by manufacturer’s name and accompanied by the term “or equal,” comply with provisions in Article **Error! Reference source not found.**, Product Substitutions, to obtain approval for use of an unnamed product.
- 2.1.2 Product Selection Procedures:
- 2.1.2.1 Product: Where Specifications name a single product and manufacturer, and indicate “no known equal,” provide the named product that complies with requirements.
 - 2.1.2.2 Manufacturer/Source: Where Specifications name a single manufacturer or source, and indicates “no known equal,” provide a product by the named manufacturer or source that complies with requirements.
 - 2.1.2.3 Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 - 2.1.2.4 Manufacturers: Where Specifications include a list of manufacturers’ names, provide a product by one of the manufacturers listed that complies with requirements.
 - 2.1.2.5 Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches District’s sample. District’s decision on whether a proposed product matches will be final.
 - 2.1.2.5.1 When approval of a color, pattern or texture sample match by the District is required, provide the best match that complies with the specification and also provide the two nearest in the selection range to either direction from the same manufacturer/supplier. Application examples are:

- 2.1.2.5.1.1 *Color* – shall have two color hues or shades darker and two color hues or shades lighter. Total of five selections available.
 - 2.1.2.5.1.2 *Pattern* – shall have two patterns that are less dense (or smaller) and two patterns that are more dense (or larger). Total of five selections available.
 - 2.1.2.5.1.3 *Texture* – shall have two textures that are less rough (or smaller) and two patterns that are more rough (or larger). Total of five selections available.
- 2.1.2.5.2 If no product available within specified category matches and complies with other specified requirements, comply with provisions in Article **Error! Reference source not found.** (Product Substitutions) below for proposal of product.
- 2.1.2.6 Visual Selection Specification: Where Specifications include the phrase “as selected from manufacturer’s colors, patterns, textures” or a similar phrase, select a product that complies with other specified requirements.
- 2.1.2.6.1 Standard Range: Where Specifications include the phrase “standard range of colors, patterns, textures” or similar phrase, District will select color, pattern, density, or texture from manufacturer’s product line that does not include premium items.
 - 2.1.2.6.2 Full Range: Where Specifications include the phrase “full range of colors, patterns, textures” or similar phrase, District will select color, pattern, density, or texture from manufacturer’s product line that includes both standard and premium items.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 62 50
PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01311 – “Project Management and Coordination”
- C. Section 01400 – “Quality Control Requirements”
- D. Section 01610 – “Basic Product Requirements”
- E. Section 01722 – “Execution Requirements”
- F. Section 01780 – “Project Record Documents”
- G. Division 2 through 33 Sections for specific requirements for Materials and Equipment (Product Options and Substitutions) for the work in those Sections.

1.3 SUMMARY

- A. This Section includes administrative and procedural requirements concerning product options and substitutions.

1.4 GENERAL

- A. The term product, as used in the Contract Documents, includes materials, equipment, systems, and like terms of similar intent.
- B. All products are to be new and not previously incorporated into or used in any other project or facility. Products salvaged or recycled from other projects are not considered new products and are not permitted.
- C. Named products are identified in the Contract Documents by manufacturer’s product name, make or model number, and/or other specific designation.
 - 1. Do not use materials and/or equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- D. List of Manufacturers and Products Required. The Design Builder shall require all Subcontractors to prepare and submit to the Design Builder, within thirty (30) days of execution of the Subcontract, four (4) copies of the comprehensive lists of manufacturers and products proposed for the Project, including information on materials, equipment, and fixtures required by the Contract Documents, as may be required for the Design Builder’s or District’s approval.
 - 1. Approval of such lists of products shall not be construed as a substitute for the shop drawings, manufacturer’s descriptive data, and samples, required by the Contract

Documents, but rather shall be considered as a base from which more detailed submittals shall be developed for final review by the Design Builder and the District.

1.5 PRODUCT SELECTION AND SUBSTITUTION REQUIREMENTS

- A. Substitutions are defined as any changes in products, materials, equipment, and/or methods of construction from those required by the Contract Documents, and that are proposed by the Design Builder.
- B. When only one product is specified, and unless the Specifications state that no substitution is permitted, whenever the Contract Documents indicate any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction or any specific name, make, trade name, or catalog number, with or without the words “or equal,” such specification shall be deemed to be used for the purpose of facilitating description of the material, process, or article desired and shall be deemed to be followed by the words “or equal” unless the Contract Documents specify “no substitution allowed”, “no equal”, “no equivalent”, “to match campus standard”, “single source,” or other language with similar meaning, in which case no substitutions will be allowed.
 - 1. Pursuant to Paragraph 3.11.4 of the General Conditions, the apparent lowest responsive and responsible bidder may, within three (30) calendar days after bid opening offer any material, process, article, etc., which shall be materially equal or better in every respect to that so indicated or specified (“Specified Item”) and will completely accomplish the purpose of the Contract Documents. to Paragraph 3.11.4 of the General Conditions, the Design Builder may, unless otherwise stated below, at time of bid offer any material, process, article, etc., which shall be materially equal or better in every respect to that so indicated or specified (“Specified Item”) and will completely accomplish the purpose of the Contract Documents.
- C. For products specified by naming only one manufacturer and including the words “no substitutions allowed”, “no equal”, “to match campus standard”, “single source” and/or other phrase with similar meaning:
 - 1. There is no product option due to necessity to match existing products or systems, to meet other design criteria or dependencies, or to comply with established standards. No substitution will be allowed.
 - 2. If product becomes unavailable due to no fault of Design Builder, submit Request for Substitution, including all information required herein.
- D. When more than one product is specified, and in the absence of language stating “no substitutions allowed”, “no equal”, “to match campus standard”, “single source,” or other phrase with similar meaning:
 - 1. Select products of any named manufacturer meeting all specified requirements, or submit a request for substitution at time of bid.
 - 2. If product becomes unavailable due to no fault of Design Builder, submit Request for Substitution (RFS), including all information required herein.
- E. For products specified by naming one or more products followed by the words “or approved equal”:

1. Select products of any named manufacturer meeting all specified requirements, or submit a request for substitution at time of bid.
- F. For products specified only by reference standard, select any product meeting or exceeding all requirements of the specified standard.
- G. Compatibility of product options: If Design Builder is given an option of selecting between two or more products for use on the Project; product selected shall be compatible with products previously selected, even if previously selected products were also options.
1. Design Builder shall be responsible for providing products and construction means and methods that are compatible with the products and construction means and methods of other contractors.
- H. Products Specified which are Commercially Unavailable. If the Design Builder fails to make a request for substitutions for products, at the time of submitting bids to the District, and such products subsequently become commercially unavailable, the Design Builder may request a substitution for such commercially unavailable item.
1. The decision to grant this request is solely at the District's discretion. The written approval of the District, consistent with the procedure for Change Orders, shall be required for the use of a proposed substitute material.
 2. The District may condition its approval of the substitution upon the delivery to District of an extended warranty or other assurances of adequate performance of the substitution as well as an equitable deduction in the contract price should the substituted item cost less than the Specified Item.
 3. All risks of delay due to the approval of a requested substitution by the DSA, or any other governmental agency having jurisdiction, shall be on the requesting party. All additional costs, all procurement and construction delays, and all costs for review by the District or its consultants shall be the responsibility of the Design Builder and will be deducted from Design Builder's pay request.
- I. Substitution Request Form. All requests for substitutions of products, materials, or processes in place of a Specified Item must be submitted in writing on the District's Substitution Request Form ("Request Form") within three (30) calendar days after bid opening. The Request Form must be accompanied by evidence as to whether the proposed substitution meets the requirements of the Contract Documents as specified herein.
- J. After bids are opened, the apparent lowest responsive and responsible bidder shall provide, within five (30) days of opening such bids, any and all Drawing, Specifications, samples, performance data, calculations, and other information, as required herein to assist the District in determining whether the proposed substitution is acceptable. The burden of establishing these facts shall be upon the bidder.
- K. After the District's receipt of such evidence by the bidder, the District will make its final decision as to whether the bidder's request for substitution for any Specified Items will be granted. The decision as to whether a proposed request for substitution is equal to a Specified Item shall be at the sole discretion of the District.

1. Any request for substitution that is granted by the District shall be documented and processed through a Change Order.
 2. The District may condition its approval of any substitution upon delivery to the District of an extended warranty or other assurances of adequate performance of the substitution.
 3. Any and all risks of delay due to approval by the DSA or any other governmental agency having jurisdiction shall be on the bidder.
 4. In the event that the bidder has agreed in the Request Form to provide the Specified Item and the District denies the bidder's requested substitution for a Specified Item, the bidder shall provide the Specified Item without any additional cost or charge to the District.
- L. If the District accept a proposed substitution, the Design Builder agrees to pay for all engineering and design services, including, without limitation, compensation to the District and affected engineers for their required time to process such substitution through the Division of the State Architect, if required, and to make all changes and adjustments in materials or the work of all trades directly or indirectly affected by the substituted item or items at no cost to the District.
- M. Substitutions will not be considered for acceptance (or, at the District's sole discretion, District may make Design Builder solely responsible for all resulting costs, expenses and other consequences of a substitution) when a substitution:
1. Results in delay meeting established construction milestones and/or Phase completion dates.
 2. Is indicated or implied on submittals without formal Substitution Request from Design Builder.
 3. Is requested directly by a Subcontractor or supplier.
 4. Acceptance will require substantial revision to the Contract Documents.
 5. Disrupts the Design Builder's Work progress or ability to perform efficiently.
- N. Substitute products shall not be ordered without written acceptance of District.
- O. District shall determine acceptability of proposed substitutions and reserve right to reject proposals due to insufficient information.
- P. Accepted substitutions will be evidenced by a Change Order. All Contract Document requirements apply to all Work involving substitutions.
- Q. Coordinate all substitute products with Design Builder's Construction and Submittal Schedules.

1.6 PRODUCTS WITH NO SUBSTITUTION ALLOWED

- A. No substitutions shall be allowed for District standard products. District standard products include:
1. Schlage door locksets and latch sets
 2. Siemens Fire Alarm System
 3. Access Control: Software House
 4. ALC Controls for HVAC and Exterior Lighting (Addendum #2)
 5. Teradon TAIL – 2B5-12R-0 Battery Operated Clocks (Addendum #2)

1.7 PRODUCT SUBSTITUTION REQUESTS: REQUIRED INFORMATION

- A. Requests for substitutions of products, materials, or processes in place of a specified item must in writing on the District's Substitution Request Form at the time of submitting bids to the District.
- B. Except as provided in the Contract Documents with respect to "or equal" items, District will consider a Design Builder's substitution request only when the specified product or products become unavailable due to no fault of Design Builder.
- C. Requests for review of proposed substitute items will not be accepted from anyone other than Design Builder.
- D. A Request for Substitution shall state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice Design Builder's achievement of Substantial Completion of the Work or any Phase of the Work on time pursuant to the completion dates specified in the Contract Documents, and whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with the District for Work on the Project.)
- E. Substitution Product List: Submit a list, in tabular form, showing specified product(s) and requested substitute product(s). Include generic names of products required, and manufacturer's proprietary name for each product. Provide all product data for each requested substitute product, variations from specified product, and other pertinent data as specified herein.
- F. Submit separate submittals (four copies) for each product substitution requested, to include the following:
 - 1. A statement either explaining why the specified product cannot be provided or why the Design Builder is proposing a substitution.
 - 2. Product identification, including specification section number, and title.
 - 3. Manufacturer's literature, including product data and specifications.
 - 4. Physical samples, as applicable
 - 5. Color chart, as applicable.
 - 6. Name and address of similar projects on which product has been used, and dates of installation.
 - 7. Name, address, and telephone number of supplier, installer, and manufacturer's representative.
 - 8. Construction methods: Include detailed description with drawings or other illustrations as required for clarity.
 - 9. Provide product availability information with projected delivery date.
 - 10. A completed Substitution Request Form (see Section 01340 "Administrative Forms and Logs") for each product substitution requested. Submittals with an incomplete Substitution Request Form will be returned to the Design Builder without review.
 - 11. A detailed comparison of the proposed substitution with specified product, listing all variations including all dimensional, weight, service requirements, and functional

differences, if any. If variation(s) from the specified product is not identified in the submittal, it may be rejected.

12. Indicate available maintenance, repair, and replacement services for substitute products.
13. Design Builder shall state whether the substitute will require a change in any of the Contract Documents (or provisions of any other direct contract with District for work on the Project) to adapt the design for the proposed substitute, and whether or not incorporation or use of the substitute in connection with Work is subject to payment of any license fee or royalty.
14. Design Builder shall provide an accurate cost comparison of the proposed substitution with the specified product and identify the net change in Contract Price related to use of the proposed substitution.
 - a. The cost comparison shall include, but not be limited to, an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, and include costs for redesign and/or claims of other contractors affected by the resulting change.
 - b. District may require Design Builder to furnish additional cost data concerning the proposed substitute.
15. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by District and separate contractors that will be necessary to accommodate proposed substitution.
16. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
17. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
18. Submit complete information identifying any changes to the Design Builder's Baseline CPM Schedule required as a result of the proposed substitution.
 - a. If specified product or method of construction cannot be provided within Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or other reason for delays in delivery.
 - i) Design Builder's certification that proposed substitution complies with requirements in the Contract Documents.
19. Design Builder's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

1.8 DESIGN BUILDER'S REPRESENTATION AND WARRANTY

- A. Design Builder's Substitution Request constitutes a representation and warranty that Design Builder complies with all of the following requirements:
 1. Design Builder has investigated proposed product and determined that it meets or exceeds, in all respects, the requirements for the specified product.
 2. Design Builder shall provide the same warranty for substitution as for specified product.

3. Design Builder shall coordinate installation and make all other changes that may be required for Work to be integrated and complete in all respects.
4. Design Builder waives claims for any additional costs which may subsequently become apparent.
5. Design Builder shall compensate District for any Construction Document revisions and/or agency approval costs associated with any product substitution. Any such compensation shall be deducted from the Contract Price by the District via Change Order.
6. Design Builder shall be responsible for maintaining the Baseline CPM Schedule and for recovering any time lost due to a product substitution.
7. Design Builder shall be responsible for any Baseline CPM Schedule delay caused by late ordering of available specified products caused by Substitution Requests that are subsequently rejected by the District.
8. Design Builder shall compensate District for all costs, including extra costs for performing Work under Contract Documents, extra cost to other contractors, and any claims brought against District, caused by late Product Substitution Requests.

1.9 DISTRICT'S ACTION

- A. District shall respond in writing to Design Builder within (10) working days of receipt of a Substitution Request. District's response shall include a list of unacceptable product selections and a brief explanation of reasons for this action. District's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. District shall notify Design Builder in writing of decision to accept or reject Design Builder's requested substitution.
- C. If necessary, District may request additional information or documentation for evaluation Substitution Request. District shall notify Design Builder of acceptance or rejection of proposed substitution within (5) working days of receipt additional information of documentation.

1.10 ADMINISTRATIVE REQUIREMENTS

- A. Specified products, materials, or systems for Project may include engineering or on-file standards required by the regulatory agency. Design Builder's substitution of products, materials or systems may require additional engineering, testing, reviews, approvals, assurances, or other information for compliance with regulatory agency requirements, or both. Design Builder shall provide all agency approvals or other additional information required and pay additional costs for required District services made necessary by the substitution at no increase in Contract Price or Contract Time, and as a part of substitution proposal.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 62 50

EXECUTION

PART 1 - GENERAL

1. SUMMARY

1.1. Section Includes: Administrative and procedural requirements for contract closeout, including but not limited to, the following:

- 1.1.1. Substantial Completion requirements.
- 1.1.2. Inspection (Punch List) procedures.
- 1.1.3. Final Completion requirements
- 1.1.4. Project Record Documents.
- 1.1.5. Operations and Maintenance Manuals
- 1.1.6. Spare parts/materials.
- 1.1.7. Warranties (Minimum 2 years unless manufacturer's warranty is greater.)
- 1.1.8. Two-year maintenance and service agreements.
- 1.1.9. Demonstration and Training of District's personnel.
- 1.1.10. Final Cleaning.

1.2. Related Sections:

- 1.2.1. Section 00 50 00 (Form of Agreement) for requirements for Project Completion and Final Payment.
- 1.2.2. The Conditions for the Contract and the other sections of Division 1 apply to this section as fully as if repeated herein.
- 1.2.3. Divisions 2 through 33 Sections for specific closeout and special cleaning requirements for products of those sections.

2. SUBSTANTIAL COMPLETION

2.1. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion by phase, complete the following. List items below that are incomplete in request.

- 2.1.1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list and reasons why the Work is not complete.
- 2.1.2. For the final phase of the Project, advise the District of pending insurance changeover requirements.
- 2.1.3. For the final phase of the Project, submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

- 2.1.4. Obtain and submit releases permitting District unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
- 2.1.5. For the final phase of the Project, prepare, sign, and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs (and photographic negatives or a disk with all digital files), damage or settlement surveys, property surveys, and similar final record information. Deliver operation and maintenance manuals and Project Record Documents at least two weeks (14 days) before training and request for Substantial Completion Inspection.
- 2.1.6. For the final phase of the Project, deliver all tools, spare parts, extra materials, and similar items that are a permanent part of the installed equipment, to the District. Label with manufacturer's name and model number where applicable.
- 2.1.7. All plumbing and mechanical equipment shall operate quietly and free from vibration. Properly adjust, repair, balance, or replace equipment producing objectionable noise or vibration. Provide additional brackets, bracing, or other methods to prevent objectionable noise or vibration. All systems shall operate without humming, surging, or rapid cycling.
- 2.1.8. Complete startup testing of systems.
- 2.1.9. Complete training of the District's staff per Part 3 of this section. Submit training logs and attendance sheets.
- 2.1.10. Submit test/adjust/balance records.
- 2.1.11. Properly mount and post all operating instructions.
- 2.1.12. Make final changeover of permanent locks and deliver properly marked keys to District. Advise District's personnel of changeover in security provisions.
- 2.1.13. For the final phase of the Project and as approved by the District, terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
- 2.1.14. Advise District of changeover in heat and other utilities.
- 2.1.15. Submit changeover information related to District's occupancy, use, operation, and maintenance.
- 2.1.16. Complete final cleaning requirements per Paragraph 3.2, Final Cleaning.
- 2.1.17. Touch up and otherwise repair and restore marred and exposed finishes to eliminate visual defects.
- 2.1.18. Deliver evidence of compliance with any and all requirements of all applicable governmental regulatory agencies at all levels, including District, City, State (DSA and Emergency Planning Department) and Federal government and agencies.
- 2.1.19. Submit certificates of inspection for vertical transportation systems, and life safety systems.

2.1.20. Submit copies of the fire alarm certification.

2.1.21. Certificates: For the final phase of the Project, submit manufacturer's representative's certification that work has been installed in accordance with manufacturer's recommendations.

2.1.22. Complete all Testing requirements per Section 01 88 20 (Miscellaneous Hazardous Materials Requirements).

2.2. Inspection: After all requirements of the Substantial Completion preliminary procedures have been completed, submit a written request for inspection for Substantial Completion. Give notice at least 7 working days in advance from the time the final inspection is to be performed. District will either proceed with inspection or notify Design Builder of unfulfilled requirements. Refer to Paragraph 1.4, List of Incomplete Items (Punch List).

2.2.1. Initial Inspection (Punch List): The Design Builder or his principal superintendent, authorized to act on behalf of the Design Builder, is to assemble a list of unfinished work items and assign costs to each item.

2.2.2. Final Inspection (Punch List): The Design Builder or his principal superintendent, authorized to act on behalf of the Design Builder, shall accompany the District on the final inspection tour. Principal Subcontractors and Consultants that the District may request to be present will also attend. The District will verify the Design Builder's Initial Inspection and recommend any changes.

2.2.3. If the Work has been substantially completed in accordance with the Contract Documents, and only minor corrective measures are required, the District will conditionally accept the Work and will file for the Notice of Completion based upon the Design Builder's assurance that the corrective measures will be completed within the shortest practicable time period.

2.2.4. If the Work has not been substantially completed in accordance with the Contract Documents, and several corrective measures are still required, the District will not accept the Work or record the Notice of Completion. The Design Builder shall complete or correct the items listed on the Initial Inspection and the Final Inspection punch list and then call for a re-inspection, following the procedure outlined above.

2.2.5. Re-inspection: Request for re-inspection when the Work identified in previous inspections as incomplete is completed or corrected. More than one (1) request of the District to make a re-inspection shall be considered an additional service of District, District's Representative, and/or Inspector of Record, and all subsequent costs will be deducted from the Design Builders final payment.

3. FINAL COMPLETION

3.1. Preliminary Procedures: Before determining the date of Final Completion, complete the following:

3.1.1. Submit a final Application for Payment according to Section 00 50 00 (Agreement).

3.1.2. Submit affidavit of payment of debts and claims.

- 3.1.3. Submit affidavit of release of liens.
- 3.1.4. Submit consent of Design Builder's surety to final payment,
- 3.1.5. Submit complete payroll certifications.
- 3.1.6. Submit certified copy of District's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by the District's representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- 3.1.7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- 3.1.8. Submit pest-control final inspection report and warranty.
- 3.1.9. Submit all guarantees and warranties. Refer to Paragraph 1.7, Warranties.
- 3.1.10. Submit all Material Safety Data sheets.
- 3.1.11. Submit copies of all Verified Reports.
- 3.1.12. Submit a list of all Subcontractors of every tier providing services and/or materials in connection with the Project, in a formal, adequately bound, cataloged form, which shall include the names, addresses, telephone numbers and fax numbers of such persons, and shall further include notices as to where pertinent persons can and may be reached for emergency service, inclusive of nights, weekends and holidays.

4. DESIGN BUILDER'S LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- 4.1. Preparation: Submit ten copies of each list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by the Design Builder that are outside the limits of construction.
 - 4.1.1. The list is to be in Microsoft Excel, electronic format. The format is available from the District for the Design Builder's use.
 - 4.1.2. Organize the list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor in each building in the project. Each line item is to have a unique number associated with the room number (do not re-number items once they have been assigned a number).
 - 4.1.3. Organize items by space. Each outstanding item is to be based on the room number where the problem exists and individually numbered.
 - 4.1.4. Include the following information at the top of each page:
 - 4.1.4.1.1. Project name.
 - 4.1.4.1.2. Date.
 - 4.1.4.1.3. Name of District's Representative.
 - 4.1.4.1.4. Name of Inspector or Record.

4.1.4.1.5. Name of Design Builder.

4.1.4.1.6. Page Number.

5. PROJECT RECORD DOCUMENTS

5.1. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for the District's representative and Inspector of Record's reference during normal working hours. Submit Record Documents as described in this Section 00 50 00 (Agreement) and 01 11 20 (Design Services and Deliverables).

5.2. Record Drawings: Maintain and submit one signed set of prints of Contract Drawings and Shop Drawings.

5.2.1. Mark Record drawings to show the actual installation where installation varies from that shown originally as well as construction added to the Contract that is not indicated on the Contract Drawings. Require individual or entity who obtained record data, where individual or entity is installer, Subcontractor, or similar entity, to prepare the marked-up Record Prints.

5.2.1.1. Keep Record Drawings current and legible, and available, on site, for inspection at all times by the Inspector of Record, and District's representative.

5.2.1.2. Give particular attention to information on concealed elements that cannot be readily identified and recorded later. Concealed shall mean construction installed underground or in an area which cannot be readily inspected by use of access panels, inspection plates or other removable features.

5.2.1.3. Accurately record information in an understandable drawing technique.

5.2.1.4. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

5.2.1.5. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

5.2.2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

5.2.3. Mark important additional information that was either shown schematically or omitted from original drawings.

5.2.4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, RFI numbers, and similar identification where applicable.

5.2.5. Identify, sign and date each Record Drawing: include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into

manageable sets; bind each set with durable cover sheets. Include identification on cover sheets.

5.3. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation.

5.3.1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

5.3.2. Mark copy with proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

5.3.3. Note related Change orders, Record Drawings, where applicable.

5.4. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

5.4.1. Include Material Safety Data Sheets.

5.4.2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

5.4.3. Include significant changes in the product delivered to Project site and changes in manufacturer's written instruction for installation.

5.4.4. Note related Change Orders, Record Drawings, where applicable.

6. OPERATIONS AND MAINTENANCE MANUALS

6.1. Assemble 3 copies of complete sets of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Section and as follows:

6.1.1. Manufacturer's Manuals: Submit complete installation, operation, maintenance and service manuals, and printed instructions and parts lists for all materials and equipment where such printed matter is regularly available from the manufacturer. This includes, but is not limited to such service manuals as may be sold by the manufacturer covering the operation and maintenance of his items, and complete replacement parts lists sufficiently detailed for parts replacement ordering to manufacturer. Piping diagrams and wiring diagrams are to be included. Bound publications need not be assembled in binders.

6.1.1.1. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title

“OPERATION AND MAINTENANCE MANUAL,” Project name, and subject matter of contents.

- 6.1.2. Equipment Nameplate Data: Submit a typewritten list of all mechanical and electrical equipment showing exact equipment nameplate data. Identify equipment by means of names, symbols, and numbers used in the contract documents
- 6.1.3. System Operating Instructions: Submit typewritten instructions covering operation of the entire system as installed (not duplicating manufacturer's instructions for operating individual components). Include schematic flow and control diagrams as appropriate and show or list system valves, control elements, and equipment components using identification symbols and numbers, including operating standards. List rooms, area of equipment served, and show proper settings for valves, controls, and switches. Incorporate emergency instructions and procedures, startup and shutdown procedures, seasonal procedures and weekend operations.
- 6.1.4. System Maintenance Instructions: Submit typewritten instructions covering routine maintenance of system. List each item of equipment requiring inspection, lubrication, or service and briefly describe such maintenance, including types of lubricants and frequency of service. It is not intended that these instructions duplicate manufacturer's detailed instructions. Give name, address and phone number of nearest firm authorized or qualified to service equipment or provide parts
- 6.1.5. Wall Mounted Data: Frame one set of typewritten system instructions and diagrams as required under Paragraphs .3 and .4 above, covered with glass and mounted in locations as directed by the District. This set of instructions is in addition to the required herein.

7. WARRANTIES & GUARANTEES

- 7.1. All submitted Warranty and Guaranty forms will be on the Contra Costa Community College District's Warranty and Guaranty format. Original to be provided.
- 7.2. Warranties and guarantees for fire/life safety work such as fire alarm, sprinkler, emergency and exit lighting, and exiting pathway systems such as: Elevator, wheelchair lifts, etc. shall have specific language “in the event of our failure to respond and act within 3 hours after being notified in writing by the District, we authorize the District to proceed to have the defects repaired or replaced and made whole, together with any other adjacent work which may be displaced or damaged by so doing, at our expense, and we will honor and pay the costs and charges therefore upon demand. This work shall not invalidate any and all warranties and guarantees.”
- 7.3. Submittal Time: Submit duplicate written warranties and guarantees on request of District for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- 7.4. Partial Occupancy: Submit properly executed warranties and guarantees within 15 days of completion of designated portions of the Work that are completed and occupied or used by District during construction period by separate agreement with Design Builder.

- 7.5. Organize warranty and guarantee documents into an orderly sequence based on the table of contents of the Project Manual.
 - 7.5.1. Bind warranties and guarantees in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
 - 7.5.2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty and guarantee. 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.
- 7.6. Provide additional copies of each warranty and guarantee to include in operation and maintenance manuals.

PART 2 – PRODUCTS

1. MATERIALS

- 1.1. Cleaning Agents: Only 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. All cleaners shall be specifically designed for the purpose intended, safe for use on the intended object to be cleaned, and safe to pupils, staff and the public. Refer to the District's standards for cleaning products approved by the District.
- 1.2. Commercial floor wax stripper, Easterday Ammo-Strip or approved equal, capable of removing metal interlock water emulsion floor finish.
- 1.3. Floor finish shall be minimum 20% solids content high-gloss wax. Acceptable products:
 - 1.3.1. Spartan Sunny-Side
 - 1.3.2. Spotlight (Brulin Company-800-776-7149)
 - 1.3.3. Champion Once-A-Year
- 1.4. Graffiti Remover (non-toxic): SO-SAFE BY DX, Inc., or approved equal.
- 1.5. Germicidal Cleaner must be E.P.A. registered germicidal cleaner and deodorizer appropriate for use in public school buildings. DB team should use CCCD approved COVID-19 Sanitizer.

PART 3 – EXECUTION

1. DEMONSTRATION AND TRAINING

- 1.1.1. Instruction: After Work under this contract is completed, tested, and before acceptance, and not less than 14 days after submittal of the operation and maintenance data required in Paragraph 1.6, Operations and Maintenance Manuals, operate all systems for a period of three 8-hour days during which time keep on the project competent personnel familiar with the items installed whose full-time assignment will be to instruct the District's maintenance personnel in the operation and maintenance of the equipment and systems.
- 1.1.2. Provide instructors experienced in operation and maintenance procedures.
- 1.1.3. Provide instruction at mutually agreed-upon times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
- 1.1.4. Schedule training with District, through District's representative, with at least seven days notice.
- 1.1.5. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
- 1.1.6. Do not conduct this instruction period before completion of piping and equipment labeling.
- 1.2. Provide an instruction period sufficient to cover the training required. This instruction period shall be in addition and subsequent to any period of operation, test and adjustment called for elsewhere in this specification.
- 1.3. Program Structure: develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction of the following:
 - 1.3.1. System design and operational philosophy.
 - 1.3.2. Review of documentation.
 - 1.3.3. Operations.
 - 1.3.4. Adjustments.
 - 1.3.5. Troubleshooting.
 - 1.3.6. Maintenance.
 - 1.3.7. Repair.

2. FINAL AND END-OF-PHASE CLEANING

- 2.1. General: Provide final cleaning at the completion of each phase of the work and final project completion. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal, State and local environmental and antipollution regulations. If LBP was disturbed during renovation the final cleaning shall meet the minimum requirements of 40 CFR Part 745.

2.2. Cleaning: Employ professional cleaning service 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.

2.2.1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for any phase of Project:

2.2.1.1. 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.

2.2.1.2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

2.2.1.3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

2.2.1.4. Remove tools, construction equipment, machinery, and surplus material from Project site.

2.2.1.5. 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.

2.2.1.6. Horizontal surfaces: All horizontal surfaces must be dusted and/or washed until free of dust and grime.

2.2.1.7. Furnishings and equipment:

2.2.1.7.1. Remove all gum and sticky substances from all surfaces. Wash all furniture and equipment with a neutral cleaner. Use specialized cleaner appropriate for wood and/or excessively dirty surfaces.

2.2.1.7.2. Dust all machinery and equipment located in any shop area.

2.2.1.7.3. Clean all chalkboards and chalk rails by washing with water and/or chalkboard cleaner. Re-chalk chalkboards after completing cleaning process.

2.2.1.7.4. Clean exterior of all closed lockers and interior of open ones.

2.2.1.7.5. Graffiti must be removed from all furnishings and equipment.

2.2.1.8. Walls: Wash all wall surfaces with detergent and water. Remove all graffiti. All restroom walls should be washed with a disinfectant cleaner.

2.2.1.9. Doors: Wash all doors, frames and hardware.

2.2.1.10. Floors:

2.2.1.10.1. Resilient Floors (except linoleum flooring) – Clean and refinish flooring, using appropriate procedures and finishes/sealers. Strip

existing wax from all existing resilient flooring (using appropriate safety measures as recommended by the E.P.A. for any tile containing asbestos) and re-wax as follows:

2.2.1.10.1.1. Classrooms, offices and other rooms - three coats of wax.

2.2.1.10.1.2. Corridors - five coats of wax.

2.2.1.10.1.2.1.1. Newly installed resilient floors should have all surface mastic removed by Design Builder. New floors should be allowed to set for time recommended by manufacturer of mastic. These floors should be scrubbed with detergent -- not stripped. Seal as recommended by flooring manufacturer and re-wax as indicated above.

2.2.1.10.2. Linoleum Floors - Clean and refinish flooring, using appropriate procedures and finishes/sealers in accordance with manufacturers recommendations and finish as follows:

2.2.1.10.2.1.1.1. Newly installed linoleum floors should be allowed to set for time recommended by manufacturer of mastic. Existing and new floors should be scrubbed with a neutral pH (7-8.5) detergent/cleaner – do not strip factory finish. Apply the cleaning solution with a mop and bucket; allow the solution to remain on the floor, and then scrub with a rotary electric scrubber or automatic scrubber with a non-abrasive scrubbing pad. Do not over-saturate the floor. Rinse the entire floor surface with clean, cool water and allow the floor to dry thoroughly before allowing traffic. Apply two (2) coats of “Linobase” sealer, manufactured by Johnson Diversey or as recommended by manufacturer, followed by three (3) coats of “Carefree” finish, manufactured by Johnson Diversey or as recommended by the manufacturer, per manufacturer’s instructions.

2.2.1.10.3. Concrete Floors - Scrub using water and detergent.

2.2.1.10.4. Ceramic Floors - Scrub using water and detergent.

2.2.1.10.5. Clean, screen and apply gym seal per manufacturer's recommendation. All gym seal to be approved by Custodial Services Department.

2.2.1.10.6. Carpeted Floors - Vacuum all carpets and clean by hot water extraction.

2.2.1.10.7. Other Floors - Marble, terrazzo and rubber floors should be cleaned and refinished using appropriate procedures and finishes/sealers.

2.2.1.11. STAIRS: All stairs to be scrubbed with detergent including walls, handrails and ledges. Finish not to be applied to stairs unless necessary and approved by the District (Custodial Services Department).

- 2.2.1.12. RESTROOMS AND LOCKER ROOMS: Thoroughly clean and disinfect all surfaces and fixtures. Remove all foreign objects from walls/ceilings and eliminate all graffiti. Specifications provided above for fixtures, walls and floors are applicable.
 - 2.2.1.13. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - 2.2.1.14. Sweep concrete floors broom clean in unoccupied spaces.
 - 2.2.1.15. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - 2.2.1.16. 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.
 - 2.2.1.17. Remove labels that are not permanent.
 - 2.2.1.18. 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.
 - 2.2.1.18.1. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - 2.2.1.19. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - 2.2.1.20. Replace parts subject to unusual operating conditions.
 - 2.2.1.21. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - 2.2.1.22. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - 2.2.1.23. Clean ducts, blowers, and coils if units were operated without filters during construction.
 - 2.2.1.24. Clean all new and existing 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.
 - 2.2.1.25. Leave Project clean and ready for occupancy.
- 2.3. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests. Prepare a report.
- 2.4. Final Inspection: Any surface still exhibiting dirt, graffiti or dust shall be re-cleaned/re-stripped/refinished until free of dirt, graffiti or dust.

- 2.5. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on District's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 01 71 00
CLEANING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions of General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01400 – “Quality Control Requirements”
- B. Section 01500 – “Temporary Facilities and Controls”
- C. Section 01505 – “Construction Waste Management”
- D. Section 01572 – “Storm Water Pollution Prevention Plan”
- E. Section 01722 – “Execution Requirements”
- F. Section 01770 – “Contract Closeout Procedures”
- G. Divisions 2 through 33 Sections for specified Cleaning Requirements for the work in those Sections.

1.3 DISPOSAL OF MATERIALS

- A. See Section 01505 Construction Waste Management for additional requirements.
- B. As part of the scope of Work included within the Contract Price, Design Builder shall be fully responsible for disposing of all construction debris, dirt and spoils resulting from the Work.
- C. All waste materials, debris, dirt and rubbish shall be disposed of at sites to be chosen by Design Builder in accordance with applicable local, state and federal regulations and requirements of the Contract Documents. Also see Sections 01505 and 01412.
- D. Design Builder is cautioned that both the County of Contra Costa and cities within the County have regulations governing the disposal of rubble, broken pavement, and similar materials.
- E. Design Builder shall become familiar with the requirements of the agency having jurisdiction over any contemplated disposal site and shall comply with requirements.
- F. This is already addressed in Section 01505/1.7 and 1.11. Under no circumstances shall rubbish, debris, waste, dust, dirt or surplus materials be allowed to accumulate in the building or on the Site, and all such shall be removed continually as the Work progresses and by the end of each day’s Work.
 - 1. Materials: In occupied building areas, only sufficient materials and flammable or toxic substances necessary for the Work being performed that day or shift shall be brought into the building and work areas. In no case shall flammable or toxic substances be stored in the building, and these substances shall be immediately removed from the building when not needed and not later than the end of the day’s Work.
 - 2. Splattering or spilling of material shall be promptly cleaned up at time of occurrence.

- G. Design Builder shall provide sweeping whenever silt from Site is carried over to adjacent pedestrian paths, parking lots, and streets within the Campus as well as public thoroughfares surrounding the Campus.
- H. Failure to maintain a clean and orderly Site may necessitate action by the District. In the event that the Design Builder fails to clean up and maintain the project in a clean and orderly manner, the District may clean the Site and charge the Design Builder for such cleaning costs. Any cleaning costs incurred by District will be deducted from the Contract Price by Change Order.
- I. All trash, debris, waste, and excess soil resulting from performance of the Work shall be disposed of at sites to be chosen by Design Builder in accordance with applicable local, state, and federal regulations. If Design Builder elects to dispose of soil on any private property, a permission letter shall be obtained from the property owner and presented to District prior to disposal. Design Builder is advised that the property owner is required to obtain a fill permit from the applicable government agency(ies). In addition, placement of fill in wetland areas is subject to permit procedures of the US Army Corps of Engineers. At the completion of Work, a letter from each affected property owner releasing Design Builder, Contra Costa County, District, and District consultants from any future liability.

1.4 FINAL CLEANING

- A. District's Representative's Inspection: Provide District at least twenty-four (24) hours advance notice of readiness for inspection.
- B. Any deficient cleaning, as determined by District's Representative, shall be immediately corrected as directed by District at Design Builder's expense.
- C. Design Builder shall execute final cleaning prior to final inspection, using only properly skilled workers.
- D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed interior and exterior finished surfaces.
- E. Repair, patch, and touch up marred surfaces to match adjacent finishes.
- F. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, clean and/or polish all transparent and glossy surfaces,
- G. Vacuum carpeted and soft surfaces.
- H. Remove waste and surplus materials, rubbish, and construction facilities from Site.
- I. Wash and shine mirrors.
- J. Ventilating systems:
 - 1. Clean permanent filters and replace disposable filters of units operated during construction; in addition, clean ducts, blowers, and coils when units have been operated without filters during construction.
 - 2. Clean ducts, blower, and coils of units operated during construction.
- K. Clean surfaces of equipment; remove excess lubrication.
- L. Clean plumbing fixtures to a sanitary condition
- M. Vacuum and wipe inside of electrical panels and cabinetwork.
- N. Clean light fixtures and lamps.
- O. Broom clean interior spaces.
- P. Clean, damp mop, wax and polish resilient and hard-surfaced floors as specified.

- Q. Remove waste, debris and surplus materials from site. Clean grounds; remove stains, spill, and foreign substances from paved areas and sweep clean. Rake clean other exterior surfaces.
- R. Use cleaning materials which will not create hazards to health or property or cause damage to the Work. Use cleaning materials and methods recommended by the manufacturers of the products to be cleaned.
- S. Design Builder shall not use nor permitted to use any kind of material/cleaning chemical that are not permitted for use in the State of California, or not permitted by the Health Department
- T. Schedule operations to prevent dust and other contaminants resulting from cleaning operations from adhering to wet or newly finished surfaces.
- U. Clean roofs, gutters, downspouts and drainage systems.
- V. Interior surfaces and areas where Work is performed shall be left in vacuum clean condition with all dust, dirt, stains, hand marks, paint spots, plaster droppings, and other blemishes and defects completely removed. To the extent of Design Builder's operations, use or materials, the following requirements apply to all areas where Work is performed:
 - 1. Walls: Bare and painted surfaces shall be cleaned and free of dust, lint, streaks, or stains.
 - 2. Hardware and metal surfaces shall be cleaned and polished using non-corrosive and non-abrasive materials.
 - 3. Glass: New glass and soiled existing glass shall be washed and polished both sides and left free of dirt and spots. Labels shall be removed.
 - 4. Ceilings shall be clean and free of stains, hand marks, and defacing.
 - 5. Fixtures and Equipment: New mechanical and electrical fixtures and like items shall be cleaned and polished. Lighting fixtures shall be free of dust, dirt, stains, or waste material. Equipment and machinery shall be cleaned, serviced, and ready for use. Existing items shall be cleaned as required including ventilating supply and return equipment in walls and ceilings.
 - 6. Surfaces not mentioned shall be cleaned according to the intent of this Section and as required for District's Representative's approval.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 71 00

SECTION 01 71 23

FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This section describes field engineering services to be performed by Design Builder and by District, and procedures to accomplish these services.

1.1.2 Related Documents.

1.1.2.1 Document 00 33 50 Existing Site Conditions.

1.1.3 Related Sections.

1.1.3.1 Section 01 11 13 (Work Covered by Contract Documents).

1.1.3.2 Section 01 11 20 (Design Services and Deliverables).

1.1.3.3 Section 01 31 19 (Project Meetings).

1.2 RESPONSIBILITIES

1.2.1 Design Builder shall provide field engineering services; establish grades, lines, and levels for Work by use of recognized engineering survey practices.

1.2.2 Design Builder shall employ California licensed civil engineer or land surveyor for horizontal and vertical control.

1.2.3 District will provide reference points for horizontal and vertical control and shall provide starting points for the Work.

1.3 PROCEDURES

1.3.1 Design Builder shall request assistance from District two (2) Business Days prior to date assistance is required.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

END OF SECTION

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

- 1.1.1.1 Construction layout.
- 1.1.1.2 Field engineering and surveying.
- 1.1.1.3 General installation of products.
- 1.1.1.4 Coordination of District-installed products.
- 1.1.1.5 Progress cleaning.
- 1.1.1.6 Starting and adjusting.
- 1.1.1.7 Protection of installed construction.
- 1.1.1.8 Correction of the Work.

1.1.2 Related Sections include the following:

- 1.1.2.1 Section 00 33 50 (Existing Site Conditions).
- 1.1.2.2 Section 01 11 13 (Work Covered by Contract Documents).
- 1.1.2.3 Section 01 14 00 (Work Restrictions) regarding measures for noise, dust and infection control.
- 1.1.2.4 Section 01 31 00 (Project Management and Coordination) for procedures for coordinating field engineering with other construction activities.
- 1.1.2.5 Section 01 31 19 (Project Meetings).
- 1.1.2.6 Section 01 33 00 (Submittal Procedures) for submitting surveys.
- 1.1.2.7 Section 01 73 29 (Cutting and Patching) for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
- 1.1.2.8 Section 01 77 00 (Cleaning and Closeout Procedures) for submitting final property survey with Project Record Documents, recording of District-accepted deviations from indicated lines and levels, and final cleaning.

1.2 SUBMITTALS

- 1.2.1 Qualification Data: For land surveyor or professional engineer.
- 1.2.2 Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.
- 1.2.3 Certified Surveys: Submit three copies signed by land surveyor or professional engineer and one AutoCad electronic file of survey complying with District CAD Standards on CD-R.
- 1.2.4 Final Property Survey: Submit three copies showing the Work performed and record survey data and one AutoCad electronic file of survey complying with District CAD Standards on CD-R.
- 1.2.5 Contingency Plan: Submit six copies within sixty (60) Days of Notice to Proceed for emergency plan(s) should an existing utility be damaged.

1.3 QUALITY ASSURANCE

- 1.3.1 Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in California and who is experienced in providing land-surveying services of the kind indicated.
- 1.3.2 Installer Qualifications.
 - 1.3.2.1 Experienced Installers: Installers shall have a minimum of five (5) years successful experience installing items similar to those required for Project, except for individuals in training under the direct supervision of an experienced installer.
- 1.3.3 If cleaning and protection is not performed to the satisfaction of the District's Representative, the District reserves the right to have cleaning performed by others at the Design Builder's expense.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- 3.1.1 Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and locations of underground utilities and other construction affecting the Work.
 - 3.1.1.1 Before construction, verify the locations and invert elevations at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 3.1.1.2 Furnish location data for work related to Project that must be performed by public utilities serving Project site.

- 3.1.1.3 Locate all known existing utilities and shut-off devices before proceeding with construction operations that may cause damage to such installations. Existing utilities shall be kept in service where possible and damage to them shall be repaired with no adjustment to the Stipulated Sum.
- 3.1.1.4 If any other structures or utilities are encountered, request District's Representative to provide direction on how to proceed with the Work.
- 3.1.1.5 If any structure or utility is damaged, take appropriate action to ensure the safety of persons and property.
- 3.1.1.6 Submit a contingency plan for emergency repair of all utilities to District's Representative for approval prior to commencing Work.
- 3.1.2 Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 3.1.2.1 Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 3.1.2.1.1 Description of the Work.
 - 3.1.2.1.2 List of detrimental conditions, including substrates.
 - 3.1.2.1.3 List of unacceptable installation tolerances.
 - 3.1.2.1.4 Recommended corrections.
 - 3.1.2.2 Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 3.1.2.3 Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3.1.2.4 Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3.1.2.5 Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 MANUFACTURERS' INSTRUCTIONS

- 3.2.1 Manufacturer's Recommendations: When work is specified to comply with manufacturers' recommendations or instructions, distribute copies to persons involved, and maintain one set in field office.

- 3.2.1.1 Conform with requirements specified in Section 01 33 00 (Submittal Procedures) for submittal of recommendations or instructions to District; submit to District only where specified or where specifically requested.
 - 3.2.2 Perform work in accordance with details of recommendations and instructions and specified requirements.
 - 3.2.2.1 Should a conflict exist between Specifications and recommendations or instructions consult with District.
 - 3.2.3 Where manufacturer's information notes special recommendations in addition to installation instructions, comply with both recommendations and instructions.
- 3.3 PREPARATION
- 3.3.1 Existing Utility Information: Furnish public utilities with information that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with District's Representative.
 - 3.3.2 Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 3.3.2.1 Where portions of Work are to fit to other construction, verify dimensions of other construction by field measurements before fabrication; allow for cutting and patching to avoid delaying Work.
 - 3.3.3 Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
 - 3.3.4 Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to District's Representative. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on Form, "Request for Information."
- 3.4 CONSTRUCTION LAYOUT
- 3.4.1 Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify District's Representative promptly.
 - 3.4.2 General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.

- 3.4.2.1 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.
- 3.4.2.2 Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
- 3.4.2.3 Inform installers of lines and levels to which they must comply.
- 3.4.2.4 Check the location, level, and plumb of every major element as the Work progresses.
- 3.4.2.5 Notify District's Representative when deviations from required lines and levels exceed allowable tolerances.
- 3.4.2.6 Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- 3.4.3 Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- 3.4.4 Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- 3.4.5 Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by District's Representative.

3.5 FIELD ENGINEERING

- 3.5.1 Identification: District will provide reference points for horizontal and vertical control and shall provide starting points for the Work.
- 3.5.2 Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 3.5.2.1 Do not change or relocate existing benchmarks or control points without prior written approval of District's Representative. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to District's Representative before proceeding.
 - 3.5.2.2 Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

- 3.5.3 Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 3.5.3.1 Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 3.5.3.2 Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3.5.3.3 Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- 3.5.4 Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- 3.5.5 Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 3.5.5.1 Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 3.5.5.2 At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.6 INSTALLATION

- 3.6.1 Pre-Installation Meetings: Installers and suppliers are to attend pre-installation meetings scheduled by Design Builder.
- 3.6.2 General: Locate the Work and components of the Work accurately, in correct alignment and elevation.
 - 3.6.2.1 Make vertical work plumb and make horizontal work level.
 - 3.6.2.2 Install components to maximize space available for maintenance and ease of removal for replacement.
 - 3.6.2.3 Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - 3.6.2.4 Doors and access panels shall be kept clear.
 - 3.6.2.5 Before beginning any installation, make provisions to avoid interference.

- 3.6.2.6 Relocate installed work that does not provide adequate accessibility.
- 3.6.2.7 Maintain minimum headroom clearance of eight (8) feet in spaces without a suspended ceiling.
- 3.6.2.8 Do not obstruct spaces and installations that are required to be clear by California Building Code requirements.
- 3.6.3 Precedence of Installation Requirements:
 - 3.6.3.1 Descriptive specification.
 - 3.6.3.2 Product listing, classification or certification.
 - 3.6.3.3 Manufacturer's installation instructions.
 - 3.6.3.4 Trade association or referenced standards.
 - 3.6.3.5 Most common trade practice.
- 3.6.4 Comply with manufacturer's written instructions and recommendations for installing products in applications indicated unless more explicit or stringent requirements are contained in Contract Documents.
- 3.6.5 Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- 3.6.6 Allow for building movement including thermal expansion and contraction.
- 3.6.7 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.
- 3.6.8 Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
 - 3.6.8.1 Maximum noise level for trenchers, graders, and trucks shall not exceed ninety (90) dBA at fifty (50) feet as measured under the noisiest operating conditions. For other equipment, noise levels shall not exceed eighty-five (85) dBA at fifty (50) feet.
 - 3.6.8.2 Jackhammers shall be equipped with exhaust mufflers and steel muffing sleeves. Air compressors should be of a quiet type such as a "whisperized" compressor.
 - 3.6.8.3 Machines and equipment shall not be left idling.
 - 3.6.8.4 Where commercially feasible, electric power shall be used in lieu of internal combustion engine power wherever possible.

- 3.6.8.5 Schedule noisy operations so as to minimize their duration at any given location
- 3.6.8.6 Equipment shall be properly maintained to reduce noise from excessive vibration, faulty mufflers, or other sources.
- 3.6.8.7 Provide noise barriers to comply with above criteria.
- 3.6.8.8 Refer to Section 01 14 00 (Work Restrictions), for additional noise control requirements.
- 3.6.9 Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- 3.6.10 Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 3.6.10.1 Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application and as required by applicable Code requirements for accessibility. Refer questionable mounting height decisions to the District's Representative for final decision.
 - 3.6.10.2 Allow for building movement, including thermal expansion and contraction.
 - 3.6.10.3 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.
 - 3.6.10.4 Comply with the California Building Code requirements for earthquake Seismic Zone 4.
- 3.6.11 Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, produce sketch to arrange joints for the best visual effect and submit to the District's Representative for review. Fit exposed connections together to form hairline joints.
- 3.6.12 Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- 3.6.13 Isolate each part of the completed construction from incompatible material to prevent deterioration.

3.7 DISTRICT-INSTALLED PRODUCTS

- 3.7.1 Site Access: Provide access to Project Site for District's construction forces.

3.7.2 Coordination: Coordinate construction and operations of the Work with work performed by District's construction forces.

3.7.2.1 Contract Schedule: Inform District of Design Builder's preferred contract Schedule for District's portion of the Work. Adjust Contract Schedule based on a mutually agreeable timetable. Notify District if changes to schedule are required due to differences in actual construction progress.

3.7.2.2 Preinstallation Conferences: Include District's construction forces at preinstallation conferences covering portions of the Work that are to receive District's work. Attend preinstallation conferences conducted by District's construction forces if portions of the Work depend on District's construction.

3.8 PROGRESS CLEANING

3.8.1 General: Clean Project site and work areas at frequent intervals, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully. Comply with the requirements of Section 01 77 00 (Cleaning and Closeout Procedures).

3.8.1.1 Comply with requirements in CFC Article 87 for removal of combustible waste materials and debris.

3.8.1.2 Do not hold materials more than seven (7) days during normal weather or three (3) Days if the temperature is expected to rise above eighty degrees Fahrenheit (80°F).

3.8.1.3 Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

3.8.2 Site: Maintain Project site free of waste materials and debris.

3.8.3 Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

3.8.3.1 Remove liquid spills promptly.

3.8.3.2 Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate. Refer to Section 01140 (Work Restrictions) regarding dust and infection control requirements.

3.8.4 Installed Work: 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.

- 3.8.5 Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- 3.8.6 Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- 3.8.7 Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- 3.8.8 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.
- 3.8.9 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.
- 3.8.10 Limiting Exposures: 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. Where applicable, such exposures include, but are not limited to, the following:
 - 3.8.10.1 Excessive static or dynamic loading.
 - 3.8.10.2 Excessive internal or external pressures.
 - 3.8.10.3 Excessively high or low temperatures.
 - 3.8.10.4 Thermal shock.
 - 3.8.10.5 Excessively high or low humidity.
 - 3.8.10.6 Air contamination or pollution.
 - 3.8.10.7 Water or ice.
 - 3.8.10.8 Solvents.
 - 3.8.10.9 Chemicals.
 - 3.8.10.10 Light.
 - 3.8.10.11 Puncture.
 - 3.8.10.12 Abrasion.
 - 3.8.10.13 Heavy traffic.
 - 3.8.10.14 Soiling, staining and corrosion.
 - 3.8.10.15 Bacteria.

- 3.8.10.16 Rodent and insect infestation.
- 3.8.10.17 Combustion.
- 3.8.10.18 Electrical current.
- 3.8.10.19 High speed operation.
- 3.8.10.20 Improper lubrication.
- 3.8.10.21 Unusual wear or other misuse.
- 3.8.10.22 Contact between incompatible materials.
- 3.8.10.23 Destructive testing.
- 3.8.10.24 Misalignment.
- 3.8.10.25 Excessive weathering.
- 3.8.10.26 Unprotected storage.
- 3.8.10.27 Improper shipping or handling.
- 3.8.10.28 Theft.
- 3.8.10.29 Vandalism.

3.9 STARTING AND ADJUSTING

- 3.9.1 Following are minimum starting and adjusting requirements. Design Builder is to perform starting and adjusting per manufacturer's recommendations. If more stringent requirements are described in the Contract Documents, the more stringent shall apply
 - 3.9.1.1 Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
 - 3.9.1.2 Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
 - 3.9.1.3 Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 3.9.1.4 Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Section 01 45 00 (Quality Control).

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- 3.10.1 Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
 - 3.10.1.1 Cover products subject to deterioration with impervious cover; provide ventilation to avoid condensation and trapping water.
 - 3.10.1.2 Take care to use protective covering and blocking materials that do not soil, stain, or damage materials being protected.
 - 3.10.1.3 After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.
- 3.10.2 Comply with manufacturer's written instructions for temperature and relative humidity.
- 3.10.3 Protect interior materials from water damage; immediately remove wet materials from site to prevent growth of mold and mildew on site.
- 3.10.4 Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

3.11 CORRECTION OF THE WORK

- 3.11.1 Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Section 01 73 29 (Cutting and Patching).
 - 3.11.1.1 Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- 3.11.2 Restore permanent facilities used during construction to their specified condition.
- 3.11.3 Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- 3.11.4 Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- 3.11.5 Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

CUTTING AND PATCHING

PART 1 - GENERAL

1. RELATED DOCUMENTS

- 1.1. The Contract Documents, including Section 00 50 00 (Form of Agreement) and other Division 0 and 1 Specification Sections, apply to this Section.

2. SUMMARY

- 2.1. This Section includes procedural requirements for cutting and patching.
- 2.2. Related Sections include the following:
- 2.3. Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- 2.4. Requirements in this Section apply to mechanical and electrical installations. Refer to Divisions 23 and 26 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

3. DEFINITIONS

- 3.1. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- 3.2. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

4. SUBMITTALS

- 4.1. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 4.1.1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 4.1.2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 4.1.3. Products: List products to be used and firms or entities that will perform the Work.
 - 4.1.4. Dates: Indicate when cutting and patching will be performed.

- 4.1.5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
- 4.1.6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
- 4.1.7. District's Approval: 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.

5. QUALITY ASSURANCE

- 5.1. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- 5.2. Operational Elements: Do not cut and patch the following including but not limited to operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 5.2.1. Primary operational systems and equipment.
 - 5.2.2. Air or smoke barriers.
 - 5.2.3. Fire-protection systems and security alarm and camera systems.
 - 5.2.4. Control systems, including electrical or pneumatic lines.
 - 5.2.5. Communication systems.
 - 5.2.6. Conveying systems.
 - 5.2.7. Electrical wiring systems. This shall also include all computer/data and fiber optic cabling.
 - 5.2.8. Building maintenance control systems/thermostats.
- 5.3. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - 5.3.1. Water, moisture, or vapor barriers.
 - 5.3.2. Membranes and flashings.
 - 5.3.3. Exterior curtain-wall construction.
 - 5.3.4. Equipment supports.
 - 5.3.5. Piping, ductwork, vessels, and equipment.
 - 5.3.6. Noise- and vibration-control elements and systems.
- 5.4. Visual Requirements: 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 District Representative's

opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- 5.4.1. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

6. WARRANTY

- 6.1. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

1. MATERIALS

- 1.1. General: Comply with requirements specified in other Sections of these Specifications.
- 1.2. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1.2.1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

1. EXAMINATION

- 2.1. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1.1.1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 1.1.2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

2. PREPARATION

- 2.1. Temporary Support: Provide temporary support of Work to be cut.
- 2.2. Protection: Protect existing 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.
- 2.3. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- 2.4. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3. PERFORMANCE

- 3.1. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 3.1.1. Cut existing 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.
- 3.2. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 3.2.1. 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.
 - 3.2.2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3.2.3. Concrete and/or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 3.2.4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 3.2.5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 3.2.6. Proceed with patching after construction operations requiring cutting are complete.
- 3.3. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 3.3.1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 3.3.2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3.3.3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance.

Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

3.3.3.1. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface, from corner to corner and floor to ceiling, containing the patch. Provide additional coats until patch blends with adjacent surfaces.

3.3.4. Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.3.5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

4. PAYMENT FOR COSTS:

4.1. Cost caused by ill-timed or defective Work or Work not conforming to Contract documents, including costs for additional services of the District, its consultants, including but not limited to the Construction Manager, the Architect, the Project Inspector (s), Engineers and Agents, will be paid by Design Builder and/or deducted from the Design Builder's contract by the District.

4.2. District shall only pay for cost of Work if it is part of the original Contract Price or if a change has been made to the contract in compliance with the provisions of the General Conditions. Cost of Work performed upon instructions from the District, other than defective or nonconforming Work, will be paid by District on approval of written Change Order. Design Builder shall provide written cost proposals prior to proceeding with cutting and patching.

END OF SECTION

SECTION 01 74 00

WARRANTIES/GUARANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED DOCUMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01770 – “Contract Closeout Procedures”
- C. Section 01780 – “Project Record Documents”
- D. Section 01820 – “Demonstration and Training Procedures”
- E. Divisions 2 through 33 Sections for Warranties/Guaranties requirements for the Work in those Sections.

1.3 SUMMARY OF WORK

- A. Design Builder hereby warrants and guaranties to District all Work performed on this Project, including all material and equipment incorporated therein, as set forth below:
- B. Pursuant to the requirements of this Section and other sections of the Contract Documents, Design Builder agrees to unconditionally warranty and guaranty the quality and adequacy of all of Work provided under this Contract including, without limitation, all labor, materials and equipment provided by the Design Builder and Subcontractors of all tiers in connection with the Work.
- C. Design Builder’s Warranty and/or Guaranty shall become effective on the first day following District’s issuance of a written Notice of Substantial Completion or on such other date as may be specified elsewhere in the Contract Documents, and once effective, the Warranties and/or Guaranties shall remain operative and shall bind Design Builder as further described herein for a period of one (1) year, and/or more as specified in the Contract Documents.
- D. All Design Builder Warranties and/or Guaranties must be reviewed and accepted by District.
- E. Neither final payment nor use or occupancy of the Work performed by the Design Builder shall constitute an acceptance of Work not done in accordance with Contract Documents, nor relieve Design Builder of liability in respect to any express warranties and/or guaranties or responsibilities for faulty materials or workmanship.
- F. Design Builder shall remedy any defects in the Work and repair any associated damage resulting therefrom, and pay all costs for any such Work which shall become evident within any Project Warranty and/or Guaranty period. If any Work is found to be defective within any Project

Warranty and/or Guaranty period, Design Builder shall, without cost to District, promptly correct such defective Work.

- G. Design Builder shall remove any defective Work rejected by District and replace it with Work that complies in all respects to the requirements of the Contract Documents. Remove and replace any damage to other Work or the Work of others resulting therefrom.
- H. If Design Builder fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, District may have the defective Work corrected or the rejected Work removed and replaced. Design Builder shall pay for all costs, losses and damages caused by or resulting from such removal and replacement within the Warranty and/or Guaranty period.
- I. Where Design Builder fails to correct defective Work, or defects are discovered outside the Warranty and/or Guaranty period, District shall have all rights and remedies granted by law.
- J. Inspection of the Work shall not relieve Contract of any of its obligations under the Contract Documents. Even though equipment, materials, or Work required to be provided under the Contract Documents have been inspected, accepted, and paid for, Design Builder shall, at its own expense, replace or repair any such equipment, material, or Work found to be defective or otherwise not to comply with the requirements of the Contract Documents up to the end of the guaranty period.
- K. These Warranties and/or Guaranties are in addition to any other warranty or guaranty requirements contained in the Contract Documents, and not in lieu of any other liability imposed on Design Builder under the Contract Documents and governing laws with respect to Design Builder's duties, obligations, and performance under the Contract Documents.

1.4 FORMAT

- A. Design Builder shall separate each warranty and/or guaranty with index tab sheets keyed to a Table of Contents listing, providing full information and using separate typed sheets as necessary. Design Builder shall list each applicable and/or responsible subcontractor, supplier, and/or manufacturer, with name, address, telephone number, fax number, and e-mail of each responsible principal.
 - 1. Bind warranties and guaranties and bonds in heavy-duty, 3-ring vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 ½-by 11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty and/or guaranty. 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, fax number, and e-mail of installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES".
 - a. Project name and number
 - b. Architect's name
 - c. Contractor's name

- B. Design Builder shall provide two (2) sets of binders for all Warranties/Guaranties and shall include:
 - 1. Design Builder, subcontractor, and equipment supplier shall provide Warranties and Guaranties on their original company letterhead with original signature.
 - 2. Design Builder shall provide original Warranties and Guaranties. Photo copies, fax and e-mail copies are not acceptable.
- C. Design Builder shall organize warranty and guaranty documents into an orderly sequence based on the table of contents of the Project Manual.

1.5 PREPARATION

- A. Design Builder shall obtain warranties and guaranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within fifteen (15) days after Substantial Completion. Except for items put into use with District's permission, Design Builder shall leave date of beginning of time of warranty or guaranty blank until the date of completion is determined by District.
- B. Design Builder shall verify that documents are in proper original form, contain full information, and are notarized, when required.
- C. Design Builder shall co-sign and co-execute all Warranties and Guaranties.
- D. Design Builder, subcontractor, and equipment supplier must provide warranties/guaranties on their original company letterhead with original authorized principal charge signature. (Fax copy and e-mail will not be acceptable.)
- E. Design Builder shall provide additional copies of each warranty and/or guaranty to include in operation and maintenance manual. Photocopies are acceptable for this purpose.
- F. For items of work delayed beyond date of Substantial Completion, Design Builder shall provide updated submittal within ten (10) days after acceptance, listing the date of acceptance by District as start of the warranty and/or guaranty period.
- G. Design Builder must complete all warranty and guaranty submittals as required by the Contract Documents prior to District approval of Design Builder's final application for Payment.

1.6 WARRANTY AND GUARANY MANAGEMENT

- A. Warranty and Guaranty Management Plan
 - 1. Develop a warranty and guaranty management plan which contains information relevant to Specification Section 01740, Warranties/Guaranties. At least 30 days before the planned Substantial Completion date, conduct a pre-warranty conference and, submit the warranty and guaranty management plan for District approval. Include within the warranty and guaranty management plan all required actions and documents to assure that the District receives all warranties and guaranties to which it is entitled. The plan must be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Warranty and guaranty information made available during the construction phase must be submitted to the District for approval prior to each monthly pay estimate. Assemble approved

information in a binder and submit to the District upon acceptance of the Work. The construction warranty and guaranty period will begin on the date of Substantial Completion and continue for the full product warranty and guaranty period. A joint 4 month and 9 month warranty and guaranty inspection will be conducted, measured from Substantial Completion, by the Design Builder, District, and the Campus Representative. Include within the warranty and guaranty management plan, but not limited to, the following:

- a. Roles and responsibilities of all personnel associated with the warranty and guaranty process, including points of contact and telephone numbers within the organizations of the Design Builders, subcontractors, manufacturers or suppliers involved.
- b. Listing and status of delivery of all Certificates of Warranty and Guaranty for extended warranty and guaranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- c. A list for each warranted equipment, item, feature of construction or system indicating:
 - i) Name of item.
 - ii) Model and serial numbers.
 - iii) Location where installed.
 - iv) Name and phone numbers of manufacturers or suppliers.
 - v) Names, addresses and telephone numbers of sources of spare parts.
 - vi) Warranties and Guaranties and terms of warranty and/or guaranty. Include one-year overall warranty of construction. Items which have extended warranties or guaranties must be indicated with separate warranty and guaranty expiration dates.
 - vii) Cross-reference to warranty and guaranty certificates as applicable.
 - viii) Starting point and duration of warranty and guaranty period.
 - ix) Summary of maintenance procedures required to continue the warranty and guaranty in force.
 - x) Cross-reference to specific pertinent Operation and Maintenance manuals.
 - xi) Organization, names and phone numbers of persons to call for warranty and guaranty service.
 - xii) Typical response time and repair time expected for various warranted equipment.
- d. The Design Builder's plans for attendance at the 4th and 9th month post-construction warranty and guaranty inspections conducted by the District.
- e. Procedure and status of tagging of all equipment covered by extended warranties and guaranties.
- f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and guaranty and/or safety reasons.

B. Pre-Warranty Conference

1. At least thirty calendar days prior to Contract Substantial Completion, and at a time designated by the District, meet with the District Representatives to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Design Builder notification of construction warranty and guaranty defects, priorities with respect to the type of defect, reasonable time required for Design Builder response, and other details deemed necessary by the District for the execution of the construction warranty and guaranty will be established/reviewed at this meeting. In connection with these requirements and at the time of the Design Builder's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty and guaranty work action on behalf of the Design Builder. This point of contact will be located within the local service area of the warranted construction, be continuously available, and be responsive to District inquiry on warranty and guaranty work action and status.
 2. This requirement does not relieve the Design Builder of any of its responsibilities in connection with other portions of this provision.
- C. Design Builder's Response to Construction Warranty and Guaranty Service Requirements
1. Following oral or written notification by the District, respond to construction warranty and guaranty service requirements in accordance with the "Construction Warranty And Guaranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty and guaranty item that has been repaired during the warranty and/or guaranty period. Include within the report the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Design Builder does not perform the construction warranty and/or guaranty within the timeframes specified, the District will perform the work and back-charge Design Builder.
 - a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.
 - b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.
 - c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.
 - d. The "Construction Warranty and Guaranty Service Priority List" is as follows:
 - Code 1-Air Conditioning Systems
 - (1) Recreational support.
 - (2) Air conditioning leak in part of building, if causing damage.
 - (3) Air conditioning system not cooling properly.
 - Code 1-Doors
 - (1) Overhead doors not operational, causing a security, fire, or safety problem.
 - (2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.
 - Code 3-Doors
 - (1) Overhead doors not operational.
 - (2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (1) Power failure (entire area or any building operational after 1600 hours)
- (2) Security lights
- (3) Smoke detectors

Code 2-Electrical

- (1) Power failure (no power to a room or part of building).
- (2) Receptacle and lights (in a room or part of building).

Code 3-Electrical

Street lights.

Code 1-Gas

- (1) Leaks and breaks.

Code 1-Heat

- (1) Area power failure affecting heat.
- (2) Heater in unit not working.

Code 2-Kitchen Equipment

- (1) Dishwasher not operating properly.
- (2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (1) Hot water heater failure.
- (2) Leaking water supply pipes.

Code 2-Plumbing

- (1) Flush valves not operating properly.
- (2) Fixture drain, supply line to commode, or any water pipe leaking.
- (3) Commode leaking at base.

Code 3 -Plumbing

Leaky faucets.

Code 3-Interior

- (1) Floors damaged.
- (2) Paint chipping or peeling.
- (3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)

No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

D. Warranty and/or Guaranty Tags

1. At the time of installation, tag each warranted or guaranteed item with a durable, oil and water resistant tag approved by the District. Attach each tag with a copper wire and spray with a silicone waterproof coating. The date of Substantial Completion and the Design Builder Authorized signature must remain blank until the date the District makes a determination of Substantial Completion. Show the following information on the tag:

WARRANTY/GUARANTY INFORMATION

- a. Type of product/material_____
- b. Model number_____
- c. Serial number_____
- d. Contract number_____
- e. Warranty/Guaranty period_____ (months) from _____ to_____
- f. Inspector's signature_____
- g. Design Builder_____
- Address_____
- Telephone number_____
- h. Warranty or Guaranty contact_____
- Address_____
- Telephone number_____
- i. Warranty or Guaranty response time priority code_____
- j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 74 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for contract closeout, including but not limited to, the following:
 - 1. Substantial Completion requirements.
 - 2. Inspection (Punch List) procedures.
 - 3. Final Completion requirements
 - 4. Project Record Documents.
 - 5. Operations and Maintenance Manuals
 - 6. Spare parts/materials.
 - 7. Warranties (Minimum 2 years unless manufacturer's warranty is greater.)
 - 8. Two-year maintenance and service agreements.
 - 9. Demonstration and Training of District's personnel.
 - 10. Final Cleaning.
- B. Related Sections:
 - 1. Section 00 50 00 (Form of Agreement) for requirements for Project Completion and Final Payment.
 - 2. The Conditions for the Contract and the other sections of Division 1 apply to this section as fully as if repeated herein.
 - 3. Divisions 2 through 33 Sections for specific closeout and special cleaning requirements for products of those sections.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion by phase, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list and reasons why the Work is not complete.
 - 2. For the final phase of the Project, advise the District of pending insurance changeover requirements.

3. For the final phase of the Project, submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting District unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. For the final phase of the Project, prepare, sign, and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs (and photographic negatives or a disk with all digital files), damage or settlement surveys, property surveys, and similar final record information. Deliver operation and maintenance manuals and Project Record Documents at least two weeks (14 days) before training and request for Substantial Completion Inspection.
6. For the final phase of the Project, deliver all tools, spare parts, extra materials, and similar items that are a permanent part of the installed equipment, to the District. Label with manufacturer's name and model number where applicable.
7. All plumbing and mechanical equipment shall operate quietly and free from vibration. Properly adjust, repair, balance, or replace equipment producing objectionable noise or vibration. Provide additional brackets, bracing, or other methods to prevent objectionable noise or vibration. All systems shall operate without humming, surging, or rapid cycling.
8. Complete startup testing of systems.
9. Complete training of the District's staff per Part 3 of this section. Submit training logs and attendance sheets.
10. Submit test/adjust/balance records.
11. Properly mount and post all operating instructions.
12. Make final changeover of permanent locks and deliver properly marked keys to District. Advise District 's personnel of changeover in security provisions.
13. For the final phase of the Project and as approved by the District, terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
14. Advise District of changeover in heat and other utilities.
15. Submit changeover information related to District's occupancy, use, operation, and maintenance.
16. Complete final cleaning requirements per Paragraph 3.2, Final Cleaning.
17. Touch up and otherwise repair and restore marred and exposed finishes to eliminate visual defects.

18. Deliver evidence of compliance with any and all requirements of all applicable governmental regulatory agencies at all levels, including District, City, State (DSA and Emergency Planning Department) and Federal government and agencies.
 19. Submit certificates of inspection for vertical transportation systems, and life safety systems.
 20. Submit copies of the fire alarm certification.
 21. Certificates: For the final phase of the Project, submit manufacturer's representative's certification that work has been installed in accordance with manufacturer's recommendations.
 22. Complete all Testing requirements per Section 01 88 20 (Miscellaneous Hazardous Materials Requirements).
- B. Inspection: After all requirements of the Substantial Completion preliminary procedures have been completed, submit a written request for inspection for Substantial Completion. Give notice at least 7 working days in advance from the time the final inspection is to be performed. District will either proceed with inspection or notify Design Builder of unfulfilled requirements. Refer to Paragraph 1.4, List of Incomplete Items (Punch List).
1. Initial Inspection (Punch List): The Design Builder or his principal superintendent, authorized to act on behalf of the Design Builder, is to assemble a list of unfinished work items and assign costs to each item.
 2. Final Inspection (Punch List): The Design Builder or his principal superintendent, authorized to act on behalf of the Design Builder, shall accompany the District on the final inspection tour. Principal Subcontractors and Consultants that the District may request to be present will also attend. The District will verify the Design Builder's Initial Inspection and recommend any changes.
 3. If the Work has been substantially completed in accordance with the Contract Documents, and only minor corrective measures are required, the District will conditionally accept the Work and will file for the Notice of Completion based upon the Design Builder's assurance that the corrective measures will be completed within the shortest practicable time period.
 4. If the Work has not been substantially completed in accordance with the Contract Documents, and several corrective measures are still required, the District will not accept the Work or record the Notice of Completion. The Design Builder shall complete or correct the items listed on the Initial Inspection and the Final Inspection punch list and then call for a re-inspection, following the procedure outlined above.
 5. Re-inspection: Request for re-inspection when the Work identified in previous inspections as incomplete is completed or corrected. More than one (1) request of the District to make a re-inspection shall be considered an additional service of District, District's Representative, and/or Inspector of Record, and all subsequent costs will be deducted from the Design Builders final payment.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before determining the date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Section 00 50 00 (Form of Agreement).
 2. Submit affidavit of payment of debts and claims.
 3. Submit affidavit of release of liens.
 4. Submit consent of Design Builder's surety to final payment,
 5. Submit complete payroll certifications.
 6. Submit certified copy of District's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by the District's representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 8. Submit pest-control final inspection report and warranty.
 9. Submit all guarantees and warranties. Refer to Paragraph 1.7, Warranties.
 10. Submit all Material Safety Data sheets.
 11. Submit copies of all Verified Reports.
 12. Submit a list of all Subcontractors of every tier providing services and/or materials in connection with the Project, in a formal, adequately bound, cataloged form, which shall include the names, addresses, telephone numbers and fax numbers of such persons, and shall further include notices as to where pertinent persons can and may be reached for emergency service, inclusive of nights, weekends and holidays.

1.4 DESIGN BUILDER'S LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit ten copies of each list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by the Design Builder that are outside the limits of construction.
1. The list is to be in Microsoft Excel, electronic format. The format is available from the District for the Design Builder's use.
 2. Organize the list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor in each building in the project. Each line item is to have a unique number associated with the room number (do not re-number items once they have been assigned a number).
 3. Organize items by space. Each outstanding item is to be based on the room number where the problem exists and individually numbered.

4. Include the flowing information at the top of each page:

- 1) Project name.
- 2) Date.
- 3) Name of District's Representative.
- 4) Name of Inspector or Record.
- 5) Name of Design Builder.
- 6) Page Number.

1.5 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for the District's representative and Inspector of Record's reference during normal working hours. Submit Record Documents as described in this Section 00 50 00 (Form of Agreement) and 01 11 20 (Design Services and Deliverables).
- B. Record Drawings: Maintain and submit one signed set of prints of Contract Drawings and Shop Drawings.
 1. Mark Record drawings to show the actual installation where installation varies from that shown originally as well as construction added to the Contract that is not indicated on the Contract Drawings. Require individual or entity who obtained record data, where individual or entity is installer, Subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Keep Record Drawings current and legible, and available, on site, for inspection at all times by the Inspector of Record, and District's representative.
 - b. Give particular attention to information on concealed elements that cannot be readily identified and recorded later. Concealed shall mean construction installed underground or in an area which cannot be readily inspected by use of access panels, inspection plates or other removable features.
 - c. Accurately record information in an understandable drawing technique.
 - d. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - e. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

3. Mark important additional information that was either shown schematically or omitted from original drawings.
 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, RFI numbers, and similar identification where applicable.
 5. Identify, sign and date each Record Drawing: include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Note related Change orders, Record Drawings, where applicable.
- D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.
1. Include Material Safety Data Sheets.
 2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 3. Include significant changes in the product delivered to Project site and changes in manufacturer's written instruction for installation.
 4. Note related Change Orders, Record Drawings, where applicable.

1.6 OPERATIONS AND MAINTENANCE MANUALS

- A. Assemble 3 copies of complete sets of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Section and as follows:
1. **Manufacturer's Manuals:** Submit complete installation, operation, maintenance and service manuals, and printed instructions and parts lists for all materials and equipment where such printed matter is regularly available from the manufacturer. This includes, but is not limited to such service manuals as may be sold by the manufacturer covering the operation and maintenance of his items, and complete replacement parts lists sufficiently detailed for parts replacement ordering to manufacturer. Piping diagrams and wiring diagrams are to be included. Bound publications need not be assembled in binders.

- a. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.
2. Equipment Nameplate Data: Submit a typewritten list of all mechanical and electrical equipment showing exact equipment nameplate data. Identify equipment by means of names, symbols, and numbers used in the contract documents
3. System Operating Instructions: Submit typewritten instructions covering operation of the entire system as installed (not duplicating manufacturer's instructions for operating individual components). Include schematic flow and control diagrams as appropriate and show or list system valves, control elements, and equipment components using identification symbols and numbers, including operating standards. List rooms, area of equipment served, and show proper settings for valves, controls, and switches. Incorporate emergency instructions and procedures, startup and shutdown procedures, seasonal procedures and weekend operations.
4. System Maintenance Instructions: Submit typewritten instructions covering routine maintenance of system. List each item of equipment requiring inspection, lubrication, or service and briefly describe such maintenance, including types of lubricants and frequency of service. It is not intended that these instructions duplicate manufacturer's detailed instructions. Give name, address and phone number of nearest firm authorized or qualified to service equipment or provide parts
5. Wall Mounted Data: Frame one set of typewritten system instructions and diagrams as required under Paragraphs .3 and .4 above, covered with glass and mounted in locations as directed by the District. This set of instructions is in addition to the required herein.

1.7 WARRANTIES & GUARANTEES

- A. See Section 00 62 00 (Guaranty) form and 00 62 50 (Certificate of Warranty) for warranty form. All submitted Warranty and Guaranty forms will be on the Contra Costa Community College District's Warranty and Guaranty format. Originals to be provided.
- B. Warranties and guarantees for fire/life safety work such as fire alarm, sprinkler, emergency and exit lighting, and exiting pathway systems such as: Elevator, wheelchair lifts, etc. shall have specific language "in the event of our failure to respond and act within 3 hours after being notified in writing by the District, we authorize the District to proceed to have the defects repaired or replaced and made whole, together with any other adjacent work which may be displaced or damaged by so doing, at our expense, and we will honor and pay the costs and charges therefore upon demand. This work shall not invalidate any and all warranties and guarantees."
- C. Submittal Time: Submit duplicate written warranties and guarantees on request of District for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

- D. Partial Occupancy: Submit properly executed warranties and guarantees within 15 days of completion of designated portions of the Work that are completed and occupied or used by District during construction period by separate agreement with Design Builder.
- E. Organize warranty and guarantee documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and guarantees in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty and guarantee. 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.
- F. Provide additional copies of each warranty and guarantee to include in operation and maintenance manuals.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Only 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. All cleaners shall be specifically designed for the purpose intended, safe for use on the intended object to be cleaned, and safe to pupils, staff and the public. Refer to the District's standards for cleaning products approved by the District.
- B. Commercial floor wax stripper, Easterday Ammo-Strip or approved equal, capable of removing metal interlock water emulsion floor finish.
- C. Floor finish shall be minimum 20% solids content high-gloss wax. Acceptable products:
 - 1. Spartan Sunny-Side
 - 2. Spotlight (Brulin Company-800-776-7149)
 - 3. Champion Once-A-YearGraffiti Remover (non-toxic): SO-SAFE BY DX, Inc., or approved equal.
- D. Germicidal Cleaner must be E.P.A. registered germicidal cleaner and deodorizer appropriate for use in public school buildings.

PART 3 – EXECUTION

DEMONSTRATION AND TRAINING

- A. Instruction: After Work under this contract is completed, tested, and before acceptance, and not less than 14 days after submittal of the operation and maintenance data required in Paragraph 1.6, Operations and Maintenance Manuals, operate all systems for a period of three 8-hour days during which time keep on the project competent personnel familiar with the items installed whose full-time assignment will be to instruct the District's maintenance personnel in the operation and maintenance of the equipment and systems.
1. Provide instructors experienced in operation and maintenance procedures.
 2. Provide instruction at mutually agreed-upon times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
 3. Schedule training with District, through District's representative, with at least seven days notice.
 4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
 5. Do not conduct this instruction period before completion of piping and equipment labeling.
- B. Provide an instruction period sufficient to cover the training required. This instruction period shall be in addition and subsequent to any period of operation, test and adjustment called for elsewhere in this specification.
- C. Program Structure: develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction of the following:
1. System design and operational philosophy.
 2. Review of documentation.
 3. Operations.
 4. Adjustments.
 5. Troubleshooting.
 6. Maintenance.
 7. Repair.

3.2 FINAL AND END-OF-PHASE CLEANING

- A. General: Provide final cleaning at the completion of each phase of the work and final project completion. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal, State and local environmental and antipollution regulations. If LBP was disturbed during renovation the final cleaning shall meet the minimum requirements of 40 CFR Part 745.

- B. Cleaning: Employ professional cleaning service 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 any phase 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.
 - 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. Horizontal surfaces: All horizontal surfaces must be dusted and/or washed until free of dust and grime.
 - g. Furnishings and equipment:
 - 1) Remove all gum and sticky substances from all surfaces. Wash all furniture and equipment with a neutral cleaner. Use specialized cleaner appropriate for wood and/or excessively dirty surfaces.
 - 2) Dust all machinery and equipment located in any shop area.
 - 3) Clean all dry-erase boards and marker rails by washing with water and/or dry-erase board cleaner.
 - 4) Clean exterior of all closed lockers and interior of open ones.
 - 5) Graffiti must be removed from all furnishings and equipment.
 - h. Walls: Wash all wall surfaces with detergent and water. Remove all graffiti. All restroom walls should be washed with a disinfectant cleaner.
 - i. Doors: Wash all doors, frames and hardware.
 - j. Floors:
 - 1) Resilient Floors (except linoleum flooring) – Clean and refinish flooring, using appropriate procedures and finishes/sealers. Strip existing wax from all existing resilient flooring (using appropriate safety measures as recommended by the E.P.A. for any tile containing asbestos) and re-wax as follows:

- Classrooms, offices and other rooms - three coats of wax.
- Corridors - five coats of wax.

Newly installed resilient floors should have all surface mastic removed by Design Builder. New floors should be allowed to set for time recommended by manufacturer of mastic. These floors should be scrubbed with detergent -- not stripped. Seal as recommended by flooring manufacturer and re-wax as indicated above.

- 2) Linoleum Floors - Clean and refinish flooring, using appropriate procedures and finishes/sealers in accordance with manufacturers recommendations and finish as follows:

Newly installed linoleum floors should be allowed to set for time recommended by manufacturer of mastic. Existing and new floors should be scrubbed with a neutral pH (7-8.5) detergent/cleaner – do not strip factory finish. Apply the cleaning solution with a mop and bucket; allow the solution to remain on the floor, and then scrub with a rotary electric scrubber or automatic scrubber with a non-abrasive scrubbing pad. Do not over-saturate the floor. Rinse the entire floor surface with clean, cool water and allow the floor to dry thoroughly before allowing traffic. Apply two (2) coats of “Linobase” sealer, manufactured by Johnson Diversey or as recommended by manufacturer, followed by three (3) coats of “Carefree” finish, manufactured by Johnson Diversey or as recommended by the manufacturer, per manufacturer’s instructions.

- 3) Concrete Floors - Scrub using water and detergent.
- 4) Ceramic Floors - Scrub using water and detergent.
- 5) Carpeted Floors - Vacuum all carpets and clean by hot water extraction.
- 6) Other Floors - Marble, terrazzo and rubber floors should be cleaned and refinished using appropriate procedures and finishes/sealers.

- k. STAIRS: All stairs to be scrubbed with detergent including walls, handrails and ledges. Finish not to be applied to stairs unless necessary and approved by the District (Custodial Services Department).
- l. RESTROOMS AND LOCKER ROOMS: Thoroughly clean and disinfect all surfaces and fixtures. Remove all foreign objects from walls/ceilings and eliminate all graffiti. Specifications provided above for fixtures, walls and floors are applicable.
- m. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- n. Sweep concrete floors broom clean in unoccupied spaces.
- o. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
- p. 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.

- q. Remove labels that are not permanent.
 - r. 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.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - s. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - t. Replace parts subject to unusual operating conditions.
 - u. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - v. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - w. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - x. Clean ducts, blowers, and coils if units were operated without filters during construction.
 - y. Clean all new and existing 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.
 - z. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests. Prepare a report.
- D. Final Inspection: Any surface still exhibiting dirt, graffiti or dust shall be re-cleaned/re-stripped/refinished until free of dirt, graffiti or dust.
- E. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on District's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 01 78 00
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01250 – “Contract Modification Procedures”
- C. Section 01310 – “Construction Scheduling”
- D. Section 01311 – “Project Management and Coordination”
- E. Section 01330 – “Submittal Procedures”
- F. Section 01740 – “Warranties and Guaranties”
- G. Section 01770 – “Contract Closeout Procedures”
- H. Section 01785 – “Operation and Maintenance Data”
- I. Divisions 2 through 33 Sections for Project Record Documents requirements for the work in those Sections.

1.3 SUMMARY

- A. This section includes administrative and procedural requirements for Project Record Documents, including but not limited to the following:
 - 1. Record Drawings
 - 2. Record Specifications
 - 3. Record Product Data
 - 4. Record MEP & Structural coordination documents
- B. Project Record Documents requirements include, but are not limited to, the following:
 - 1. Marked-up copies of Drawings
 - 2. Marked-up copies of Shop Drawings
 - 3. Newly prepared Drawings
 - 4. Marked-up Product Data submittals
 - 5. Field records, such as photographs, for variable and concealed conditions
 - 6. Record information for Work that is only schematically shown
 - 7. Maintenance forms for equipment
- C. Other Project closeout requirements are included in Section 01770, Contract Closeout Procedures.
- D. Design Builder shall maintain Documents and Samples as follows:
 - 1. Design Builder shall provide and store all required Project Record Documents and Samples in the Design Builder field office apart from Contract Documents used for Construction.

These materials shall be available at any time upon request by the District and Project Inspector.

2. Project Record Documents shall not to be used for construction purposes.
 3. Maintain Project Record Documents in good order, and in a clean, dry, legible condition.
- E. Design Builder shall dedicate one complete full size set of the Contract Drawings and one complete Project Manual for use in recording as-built conditions.
- F. The Design Builder shall update the Record Drawings and Annotated Specifications as often as necessary to keep them current, but no less often than weekly.
- G. The Record Drawings and Annotated Specifications shall be kept at the Site and available for review and inspection by the District.

1.4 PROJECT RECORD DRAWINGS

- A. Mark-up Procedure: During the construction period, maintain a complete, current set of Contract Drawings and Shop Drawings uploaded and updated within the BLUEBEAM program for Project Record Documents purposes. Label each document "AS-BUILT RECORD". Keep all record documents current.
- B. On completion of the Work and prior to Application for Final Payment, the Design Builder will provide one complete set of AS-BUILT RECORD Drawings in AutoCAD (drawing) file format and one complete set in Adobe PDF file format.
- C. A reference by number to a Change Order, CCD, RFI, RFQ, RFP, Field Order or other such document is not acceptable as sufficient record information on any record document. Do not conceal any Work until required record information has been recorded.
1. Design Builder shall mark AS-BUILT Record Drawings to indicate the actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Items required to be marked include, but are not limited to:
 - a. Dimensional changes to the Contract Drawings (horizontal and/or vertical)
 - b. Revisions or any modification to details shown on the Contract Drawings
 - c. Depths of various elements of foundations in relation to main floor level or survey datum.
 - d. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - e. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - f. Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stub outs, invert elevations and similar items
 - g. Final, actual numbering of each electrical circuit
 - h. Revisions to routing of piping and conduits
 - i. Revisions to electrical circuitry, including legends at electrical panels
 - j. Actual equipment locations
 - k. Duct size and routing
 - l. Changes made by Change Order, CCD, ASI, or any other directive

- m. Details not on original Contract Drawings
- 2. Design Builder shall mark completely and accurately AS-BUILT Record Drawing prints of Contract Drawings or Shop Drawings, whichever is the most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
- 3. Design Builder shall mark AS-BUILT Record Drawing sets within BLUEBEAM with red markings; use other colors to distinguish between changes for different categories of the Work at the same location.
- 4. Design Builder shall mark important additional information that was either shown schematically or omitted from original Drawings.
- 5. Design Builder shall note Design Builder Change Directive numbers; Bid Alternate numbers, if any, Change Order numbers, and similar identification.
- 6. Design Builder shall be responsible for Mark-up: Where feasible, the individual or entity who obtained Project Record Drawing data, whether the individual or entity is the installer, Subcontractor or similar entity, is required to prepare the mark-up on AS-BUILT Record Drawings.
 - a. Accurately record information in an understandable and legible drawing technique.
 - b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
 - c. The District and Project Inspector will review all record documents each month prior to approval of Design Builder's Application for Payment.
- D. Design Builder shall prepare Record Drawings: Immediately prior to inspection for Certification of Substantial Completion of the Work, review completed marked-up AS-BUILT Record Drawings with District and Project Inspector to ensure accuracy of information. Once accuracy of information is confirmed, prepare and submit a full electronic set, professionally drafted in AutoCAD format, of as-built Contract Drawings and Shop Drawings.
 - 1. Incorporate changes and additional information previously marked on print sets. Delete, redraw, and/or add details and notations where applicable. Identify and date each Drawing; include the printed designation "AS-BUILT RECORD DRAWING" and the date prepared in a prominent location on each Drawing.
 - 2. Distribution: Whether or not changes and additional information were recorded, organize the original marked-up set of drawings that were maintained during the construction period within BLUEBEAM into manageable sets. The sets should be labeled with all appropriate identification, including titles, dates and other information on cover sheets and submit to District.
- E. In addition to requirements of this Section, comply with supplemental requirements of other specification sections.
 - 1. Section 01330, Submittal Procedures, requires the preparation of large scale, detailed layout drawings of the Work in Divisions 2 through 33. These layout drawings are not Shop Drawings as defined by Section 01330, but together with Shop Drawings or layout drawings of all other affected Sections are used to check, coordinate and integrate the work of the various Sections.
 - 2. Design Builder shall include required layout drawings as part of the Project Record Documents.

1.5 PROJECT RECORD SPECIFICATION

- A. Design Builder shall, during the construction period, maintain one copy of the Project Specifications, including all addenda and all other modifications issued for Project Record Documents purposes.
- B. Design Builder shall mark the Project Record specifications to indicate the actual installation where the installation varies substantially from that indicated in Specifications and/or modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, Change Order and Construction Change Directive Work, and information on concealed installation that would be difficult to identify, measure, and record later.
 - 1. In each Specification Section where products, materials or units of equipment are specified or scheduled, mark the Record copy with the proprietary name and model number of the product furnished.
 - 2. Where a specification allows Design Builder to elect one of several brands, makes, or types of material or equipment, the annotations shall show which of the allowable items the Design Builder has furnished.
 - 3. Record the name of the manufacturer, catalog number, supplier and installer and other information necessary to provide an accurate record of selections made, and coordinate documentation with Project Record Data submittals and maintenance manuals.
 - 4. Note any related Project Record Product Data that was submitted in maintenance manuals instead of Product Data submittals.
 - 5. Upon completion of mark-up, submit Project Record Specifications to District for District's records.

1.6 ADDITIONAL REQUIREMENTS FOR FINAL PROJECT AS-BUILT RECORD DOCUMENTS

- A. Using a distinct Auto CAD layer, clearly indicate at each affected plan, detail, schedule, or other drawing as necessary, a full description of changes made during construction along with the actual location of specified items.
- B. "Cloud" all changes made using a distinct AutoCAD layer.
- C. Submit duplicate electronic files of all drawings in both Auto CAD and Adobe PDF Format.

1.7 PROJECT RECORD PRODUCT DATA

- A. Design Builder shall, during the construction period, maintain one copy of each Project Record Product Data submittal for "Project Record Document" purposes.
 - 1. Mark Project Record Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Project Record Product Data submitted. Include any significant changes in the product as delivered and/or installed including any departures from the manufacturer's instructions and/or recommendations for installation.
 - 2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 3. Note related Change Orders and mark-up of Project Record Drawings, where applicable.
 - 4. Upon completion of mark-up, submit a complete set of Project Record Product Data to District for District's records.

5. Where Project Record Product Data is required as part of maintenance manuals, submit marked-up Project Record Product Data as an insert in the manual, instead of submittal as Project Record Product Data.
 6. Design Builder is responsible for mark-up and submittal of Project Record Product Data for its own Work.
- B. Material, Equipment and Finish Data:
1. General: Provide one (1) preliminary review copy and two (2) final copies each of a "Materials, Equipment and Finishes Manual" listing all finish materials, equipment (not provided under Divisions 15 and 16), and finishes installed in the Work.
 2. Submit the preliminary manuals to the District a minimum of two (2) weeks prior to Substantial Completion. The preliminary copies must comply with all of the requirements, except the hardboard covers.
 3. Obtain approval of preliminary copies prior to producing final copies.
 4. Deliver final manuals to the District prior to final acceptance and final payment.
 5. Format of Manual: Provide bound manuals with printed covers and spines. Title "Materials, Equipment and Finishes Manual". Organize data sequentially by Specification Section number on type written 8-1/2 by 11 inch pages. Provide each copy with a typewritten index and tabbed dividers between each separate Section. Mark each tab to indicate contents.
 6. Contents of Manual: Manuals shall contain all information needed to identify, maintain, and replace/duplicate any finish materials, equipment, and finishes installed in the Work for this Project. Where materials and product information has been described and likewise indicated in the "Operation and Maintenance Manuals", cross referencing to where they can be found may be done in lieu of duplication of the information. The information provided shall include, but not be limited to, the following:
 - a. Manufacturer's names and model numbers or product name; supplier's and subcontractor's name, address and phone and fax numbers; and all other pertinent information that might be required for replacement ordering or duplication at a later date.
 - b. For custom-fabricated products that do not have model numbers or names, reference Project shop drawing submittal number and indicate "Fabricated per shop drawing submittal Number _____".
 - c. Proportions of mixes.
 - d. Color formula list for each paint color used.
 - e. For power operated equipment, include complete and legible wiring diagrams together with cuts of repair parts and part numbers listed and instructions relative to care, adjustment and operation of the equipment.
 - f. For moisture protection and weather exposed products, include complete manufacturer's data with instructions on inspection, maintenance and repair.
 - g. Where applicable, provide information on care and maintenance, including manufacturer's recommendations for types of cleaning agents to be used and methods of cleaning. Provide information regarding cleaning agents and methods that could prove detrimental to the product.
- C. Design Builder shall arrange Project Record Product Data by Specification Section number, and provide names, addresses, fax numbers, emails addresses, and telephone number of Subcontractors and suppliers. Information to be provided includes:

1. Trade Names
2. Model or type numbers
3. Assembly diagrams
4. Operating instructions
5. Cleaning instructions
6. Maintenance instructions
7. Recommended spare parts
8. Product data

1.8 MISCELLANEOUS PROJECT RECORD SUBMITTALS

- A. Refer to other Specification Sections for miscellaneous record keeping requirements and submittals. Immediately prior to Substantial Completion of the Work, complete all miscellaneous records and place in good order, properly identified, and readied for use and reference. Submit to the District for District's records, in Adobe PDF format. Categories of miscellaneous records include, but are not limited to, the following:
1. Field records on excavations and foundations
 2. Field records on underground construction and similar work
 3. Survey showing locations and elevations of underground lines
 4. Invert elevations of drainage piping
 5. Surveys establishing building lines and levels
 6. Authorized measurements utilizing unit prices or allowances
 7. Records of plant treatment
 8. Ambient and substrate condition tests
 9. Certifications received in lieu of labels on bulk products
 10. Batch mixing and bulk delivery records
 11. Testing and qualification of tradespersons
 12. Documented qualification of installation firms
 13. Load and performance testing
 14. Inspections and certifications by governing authorities
 15. Leakage and water-penetration tests
 16. Fire resistance and flame spread test results
 17. Final inspection and correction procedures
 18. Final As-Built Construction Schedule
 19. Project Record Drawing Mark-ups
 20. Other

1.9 INSTALLATION, OPERATION, AND MAINTENANCE MANUALS

- A. Submit Installation, Operation, and Maintenance Manuals in accordance with this Section, Section 01330, Submittal Procedures and Section 01785, Operation and Maintenance Data.

1.10 ELECTRONIC MEDIA FORMAT

- A. Electronic Media Formats: Electronic media formats shall be Adobe PDF and AutoCAD.

1. Adobe PDF files shall have chapter markers and/or bookmarks inserted in place of the equivalent hard copy section tabs. Adobe PDF copy shall include all Project Record Drawings, updated Specification Manuals, tables, charts, drawings, codes and all other matters reflected in hard copies. Adobe PDF files shall be delivered on unique CD-ROMs containing Adobe PDF files of each completed project AS-BUILT Record Drawing and the complete Specifications Manual with all changes made during the Project.
2. In addition to the Adobe PDF file copies, professionally drafted AutoCAD project AS-BUILT Record Drawing DWG files shall be delivered showing both design and as-built information. AutoCAD layouts shall be provided allowing for the reproduction of a complete set of plans as needed.

1.11 DISTRICT'S RECOURSE

- A. If Design Builder is not able to provide Project Record Documents in specified formats, District has the right to complete the Work using other resources. Design Builder agrees that any and all costs associated with District completion of this Work shall be deducted from the Contract Price by Change Order.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.1 RECORDING

- A. Post changes and modifications to the Contract Documents as they occur. Do not wait until the end of the Project. District may periodically review Project Record Documents to assure compliance with this requirement.

3.2 SUBMITTALS

- A. At completion of Project, deliver all Project Record Documents to District, per Section 01330 (Submittal Procedures.)
- B. Accompany submittal with transmittal letter containing:
 1. Date
 2. Project title and number
 3. Design Builder's name and address
 4. Number and title of each Project Record Document
 5. Certification that each document as submitted is complete and accurate and signature of Design Builder or Design Builder's authorized representative.

END OF SECTION 01 78 00

SECTION 01 78 50
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01310 – “Construction Scheduling”
- C. Section 01311 – “Project Management and Coordination”
- D. Section 01330 – “Submittal Procedures”
- E. Section 01740 – “Warranties and Guaranties”
- F. Section 01770 – “Contract Closeout Procedures”
- G. Section 01780 – “Project Record Documents”
- H. Divisions 2 through 33 Sections for Operation and Maintenance Data requirements for the work in those Sections.

1.3 SUMMARY

- A. This section includes administrative and procedural requirements for Operation and Maintenance (O&M) data and documents.

1.4 FORMAT

- A. Design Builder shall compile O&M manuals for all building equipment including mechanical, plumbing and electrical equipment, commissioned or not, in the following formats:
 - 1. Quantity: as specified in Section 01330, Submittal Procedures.
 - 2. Hard Media Format:
 - a. Size: 8 ½ x 11 inch, 3 ring loose-leaf binders. Use as many binders as required for each element as listed below. Do not overload binders.
 - b. Binding: Bind in stiff, metal-hinged, three-ring binder(s) with standard 3 hole-punching. Binders shall be 3-inch maximum. Use white or black colored binders with integrated clear plastic covers to enable insertion of binder titles.
 - c. Sheet lifters: Provide plastic sheet lifters prior to first page and following last page.
 - d. Binder titles: Include the following title on front and spine of binder:

CONTRA COSTA COMMUNITY COLLEGE DISTRICT
Campus Number and Name
O&M Manual for: (insert equipment description(s) included)

3. Drawing Size: Provide reduced size drawings or diagrams to fit in binder. Where reduction is not practical to ensure readability, fold larger drawings separately and place in vinyl envelopes bound into the binder. Identify vinyl envelopes with drawing numbers.
 4. Dividers: Use dividers with permanently marked tabs of card stock to separate each section and sub section. Tab labels shall not be handwritten. Use a main tab for each specification section. Behind the section number tab there shall be the equipment ID tab sub-tab for each piece of major equipment (or group, if small or numerous). These sub-tabs shall be similar to the specification number tabs but of a different color.
- B. Submit O&M Data specifically applicable to this Contract and a complete and concise depiction of the provided equipment, product, or system, stressing and enhancing the importance of system interactions, troubleshooting, and long-term preventative maintenance and operation. The subcontractors shall compile and prepare data and deliver to the Design Builder prior to the training of District personnel. The Design Builder shall compile and prepare aggregate O&M data including clarifying and updating the original sequences of operation to as-built conditions. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330 SUBMITTAL PROCEDURES.
1. Package Quality. Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.
 2. Package Content. Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.
 3. Changes to Submittals. Manufacturer-originated changes or revisions to submitted data shall be furnished by the Design Builder if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the District or District Project Manager for final acceptance of submitted data, shall be submitted by the Design Builder within 30 calendar days of the notification of this change requirement.
 4. Review and Approval. The District's Commissioning Authority (CA) shall review the commissioned systems and equipment submittals for completeness and applicability. The CA shall verify that the systems and equipment provided meet the requirements of the Contract documents and design intent, particularly as they relate to functionality, energy performance, water performance, maintainability, sustainability, system cost, indoor environmental quality, and local environmental impacts. The CA shall communicate deficiencies to the District. Upon a successful review of the corrections, the CA shall recommend approval and acceptance of these O&M manuals to the District. This work shall be in addition to the normal review procedures for O&M data.

1.5 ELECTRONIC MEDIA FORMAT

- A. Electronic Media Format: Electronic media format shall be Adobe PDF, with chapter markers and/or bookmarks inserted in place of the equivalent hard copy section tabs. Electronic copy shall include all tables, charts, drawings, codes and all other matters reflected in hard copies. Electronic media files shall be delivered on a unique Thumb Drive.

1.6 SYSTEMS COVERED

- A. The Design Builder shall supply the required information for all systems identified in the technical specification sections and in this section. A separate manual or chapter shall be provided for each applicable system as follows:
1. Chillers
 2. Cooling Towers
 3. Boilers
 4. Pumps
 5. Air Handling Units (include sequence of operation, one line diagram and area served in a plastic pouch for mounting on equipment or in equipment room)
 6. Exhaust fans
 7. Supply Air Fans (excluding Air Handling Units)
 8. Plumbing and drainage Systems/Equipment
 9. Emergency Generator Systems
 10. UPS
 11. Fire Protection Systems
 12. Fire Alarm System
 13. Valves and Pipe Specialties (include valve identification chart)
 14. Variable Frequency Drives (VFD)
 15. Smoke Control Systems
 16. Water Treatment Systems
 17. Elevator Systems
 18. Lighting Systems and Controls (interior, exterior and airfield)
 19. Switchgear, Transformers, Panel boards, Motor Control Centers and Motor Starters
 20. Lighting Protection and Surge Suppression Systems
 21. Public Address, Closed Circuit TV, Communication and Telephone Systems
 22. Security System
 23. Building Management/Temperature Control System (BMS)
 24. Fuel System
 25. Doors and Hardware
 26. Power monitoring systems
 27. HVAC, Testing Adjusting and Balancing.

1.7 COMPUTER PROGRAMS

- A. When any equipment requires operation by computer programs, submit copy of original program on CD, with a hard-copy and an electronic copy (Adobe PDF format) of all user manuals and guides for operating the programs. Program shall be Windows XP compatible. Provide required licenses to District at no additional cost.

1.8 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

- A. Title Page, which shall be duplicate of front binder title

B. Table of Contents with section numbers

C. Equipment Sections and Sub Sections

1. The first page behind the equipment tab shall be the Design Builder 's name, address and telephone number of the manufacturer and installing Design Builder and the 24-hour number for emergency service for all equipment in this section, identified by equipment.
2. Submittal and Product Data: This section shall include all approved submittal data, cut sheets, data base sheets and appropriate shop drawings. If submittal was not required for approval, descriptive product data shall be included.
3. O & M and installation instructions that were shipped with the unit.
4. Model number, serial number and nameplate data for each piece of equipment and any subcomponent.
5. Safety Precautions. List personnel hazards and equipment or product safety precautions for all operating conditions.
6. Operating Instructions. These shall be the written manufacturer's data with the model and features of this installation clearly marked and edited to omit reference to products or data not applicable to this installation. This section shall include data on the following:
 - a. Include specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:
 - i) Operator Prestart and Startup Procedures. Include step-by-step procedures, including a pre-start checklist if applicable, required to install, set up, prepare, and startup each system for use.
 - ii) Startup, Shutdown, and Post-Shutdown Procedures. Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.
 - iii) Sequence of operations, with detailed instruction in proper sequence, for each mode of operation (i.e. day-night; staging of equipment.)
 - iv) Normal Operations. Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.
 - v) Emergency Operations. Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled. If some functions of the equipment can be operated while other functions are disabled, give instructions for operations under these conditions. Include here only those alternate methods of operations (from normal) which the operator can follow when there is a partial failure of malfunctioning of components, or other unusual condition.
 - vi) Shutdown procedure: Include instructions for stopping and securing the equipment after operation. If a particular sequence is required, give step-by-step instructions in that order.

- vii) Refer to controls and indicators by nomenclature consistent with that used on panels and in control diagrams.
 - b. Operator Service Requirements. Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.
 - c. Environmental Conditions. Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.
- D. Preventive Maintenance. Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.
 - 1. Produce a schedule for preventive maintenance in a printed format and an electronic format compatible with District's system. State, preferably in tabular form, the recommended frequency of performance for each preventive maintenance task, cleaning, inspection and scheduled overhauls.
 - 2. Cleaning: Provide instructions and schedules for all routine cleaning and inspection with recommended lubricants.
 - 3. Inspection: If periodic inspection of equipment is required for operation, cleaning or other reasons, indicate the items to be inspected and give the inspection criteria for: motors; controls; filters and any other maintenance items.
 - 4. Provide instructions for minor repairs or adjustments required for preventive maintenance routines. Identify test points and give values for each. Include sensor calibration requirements and methods by sensor type.
 - 5. Corrective maintenance instructions shall be predicated upon a logical effect-to-cause troubleshooting philosophy and a rapid replacement procedure to minimize equipment downtime.
 - 6. Troubleshooting: Troubleshooting tables, charts, or diagrams shall be used to present specified procedures. A guide to this type shall be a three-column chart. The columns shall be titled: Malfunction, Probable Cause and Recommended Action.
 - 7. Repair and replacement: Indicate repair and replacement procedures most likely to be required in the maintenance of the equipment.
 - 8. A list of recommended spare parts with a price list and a list of spare parts provided under this Contract.
 - 9. Outline, cross-section, and assembly drawings; engineering data; and electrical diagrams, including elementary diagrams, labeled wiring diagrams, connection diagrams, word description of wiring diagrams and interconnection diagrams.
 - 10. Lubrication Data. Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":
 - a. A table showing recommended lubricants for specific temperature ranges and applications.

- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
 - c. A Lubrication Schedule showing service interval frequency.
- E. Corrective Maintenance (Repair). Include manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.
 - 1. Troubleshooting Guides and Diagnostic Techniques. Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.
 - 2. Wiring Diagrams and Control Diagrams. Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.
 - 3. Maintenance and Repair Procedures. Include instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.
 - 4. Removal and Replacement Instructions. Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.
 - 5. Spare Parts and Supply Lists. Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. List spare parts and supplies that have a long lead-time to obtain.
- F. Appendices. Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:
 - 1. Specifications. Copy and insert the record Project Specification section in the manual.
 - 2. Product Submittal Data. Provide a copy of all SD-03 Product Data submittals required in the applicable technical sections.
 - 3. Manufacturer's Instructions. Provide a copy of all Manufacturers' Instructions submittals required in the applicable technical sections.
 - 4. O&M Submittal Data. Provide a copy of all Operation and Maintenance Data submittals required in the applicable technical sections.
 - 5. Parts Identification. Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance

with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog.

6. Warranty Information. List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.
7. Personnel Training Requirements. Provide information available from the manufacturers that are needed for use in training designated personnel to properly operate and maintain the equipment and systems.
8. Testing Equipment and Special Tool Information. Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.
9. Testing and Performance Data. Include completed pre-functional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms.
10. Design Builder Information. Provide a list that includes the name, address, and telephone number of the Design Builder and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization that can provide replacements most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.9 TYPES OF INFORMATION REQUIRED IN CONTROLS O&M DATA PACKAGES

- A. Include all requirements found in the technical specifications, items in the Schedule of O&M Data Packages, and the following for control systems:
 1. Narrative description on how to perform and apply all functions, features, modes, and other operations, including unoccupied operation, seasonal changeover, manual operation, and alarms. Include detailed technical manual for programming and customizing control loops and algorithms.
 2. Full as-built sequence of operations
 3. Copies of all checkout tests and calibrations performed by the Design Builder (not Cx tests).
 4. Full points list. A listing of rooms shall be provided with the following information for each room:
 - a. Floor
 - b. Room number
 - c. Room name
 - d. Air handler unit ID
 - e. Reference drawing number
 - f. Air terminal unit tag ID
 - g. Heating and/or cooling valve tag ID
 - h. Minimum cfm
 - i. Maximum cfm
 5. Full print out of all schedules and set points after testing and acceptance of the system.]

6. Full as-built print out of software program.]
7. Electronic copy on disk or CD of the entire program for this facility.]
8. Marking of all system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.10 SUPPLEMENTAL DATA

- A. Design Builder shall prepare written text and/or special drawings to provide necessary information when manufacturer's standard printed data is not available and/or additional information is necessary for a proper understanding and operation and maintenance of equipment or systems, or when it is necessary to supplement data included in the manual or Project documents.

1.11 SCHEDULE OF INFORMATION FOR OPERATION AND MAINTENANCE DATA PACKAGES

- A. Supply all of the following, when and where applicable, for each O&M data package:
 1. Safety precautions
 2. Operator prestart
 3. Startup, shutdown, and post-shutdown procedures
 4. Normal operations
 5. Emergency operations
 6. Operator service requirements
 7. Environmental conditions
 8. Lubrication data
 9. Preventive maintenance plan and schedule
 10. Cleaning recommendations
 11. Troubleshooting guides and diagnostic techniques
 12. Wiring diagrams and control diagrams
 13. Maintenance and repair procedures
 14. Removal and replacement instructions
 15. Spare parts and supply list
 16. Special tools required to service or maintain the equipment
 17. Corrective maintenance man-hours
 18. Product submittal data
 19. O&M submittal data
 20. Parts identification
 21. Warranty information
 22. Personnel training requirements
 23. Testing equipment and special tool information
 24. Testing and performance data
 25. Installing Subcontractor information

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 78 50

BUILDING INFORMATION MODELING (BIM) PERFORMANCE REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 The Design Builder shall utilize a Building Information Modeling (BIM) system to submit Design Development and Construction Documents in the form of a BIM Model of the Project buildings and Site in a parametric 3D format in order to maximize design and construction coordination of the facility through interference checking (clash detection) and code compliance studies within that electronic format. As is technically feasible, the Design Builder shall also test and modify the proposed construction schedule and the project cost model to optimize the project delivery options for the best overall value and performance by coordinating the BIM Model with the schedule (4D) and using the BIM Model to support cost (5D).

1.1.1.1 The BIM Model and individual system models are the property of the District. The Design Builder shall provide the District with access to the models at any time throughout the project. Submittals are outlined in Section 01 11 20 Design Services and Deliverables.

1.1.1.2 Not Used

1.1.1.3 Design Builder shall:

1.1.1.3.1 Use the BIM Model and associated model aggregation platform to facilitate the construction methods and means.

1.1.1.3.2 Update the BIM Model and associated model aggregation platform progressively throughout the design and construction period to incorporate all Subcontractor information and approved changes.

1.1.1.3.3 Provide a final "as-built" BIM Model to the District for the District's unrestricted use in operating and managing the facility.

1.1.1.3.4 Engage in regular BIM management meetings with the District and Design Build team participants to discuss and evolve the scope of work described through this section. Discussion topics will include element modeling responsibilities, software interoperability, 2.5d modeling scope, best practices and technical feasibility in the context of rapidly evolving BIM technology.

1.2 USE OF THE BIM/VIRTUAL CONSTRUCTION MODEL

1.2.1 Intent of the BIM Model and Aggregate Platform: The BIM Model and aggregate platform shall be developed for coordination, communication and collaboration purposes during design and construction. At the completion of the Work, the BIM

Model shall be turned over to the District. The District shall have exclusive rights to the model for its use in operating and managing the facility.

1.2.2 Basis of Information for Modeling: The Contract Documents and Reference Documents shall be the basis of information for the BIM Model described herein. The Criteria Architect's Architectural Drawings are available in AutoCAD for use by the Design Builder in developing the BIM Model; however, such usage shall be for convenience only and shall not carry contractual implication and subject to DBE executing agreement with Criteria Architect .

1.2.3 Relation of BIM to other Contract Documents: The BIM may be used by the Design Builder as a tool to plan the Work and produce Construction Documents. Hardcopy documentation shall be used as the basis of construction. Not all building components required by the contract documents will be included in the BIM.

1.3 DEFINITIONS

1.3.1 BIM: Building Information Modeling, a process of constructing electronic models of facility's buildings and site.

1.3.2 BIM or Virtual Construction (VC) Model: A Virtual Construction Model using 3-D Building Information Modeling (BIM) technologies to convey the design and construction elements of the Work. The Virtual Model will consist of a minimum of seven system models: Civil, Architectural, Structural, Mechanical, Electrical, Fire Protection and Equipment.

1.3.3 Model Aggregation Platform: The VC system models shall be use Revit 2023 software or later.

1.4 MINIMUM REQUIREMENTS

1.4.1 General: The BIM Model shall be developed to include parametric components of major building and site elements as defined by Part 2 of this section.

1.4.2 Accuracy of the Models: The BIM Model and each of its system models shall be developed to within a tolerance of 1/4" plus or minus.

1.4.3 Parametric Data: The BIM Model may vary in level of detail for individual elements, but at a minimum shall include sufficient parametric data to support use and analysis of:

1.4.3.1 Functional and visual representation of all spaces.

1.4.3.2 Review of Design Builder's Construction Documents at all times during the Design and Construction phases.

1.4.3.3 Clash detection and correction of all major systems.

1.4.3.4 Construction methods and means.

1.4.3.5 Construction scheduling.

1.4.3.6 Cost estimating.

1.4.3.7 As-built documentation and modeling.

1.4.4 File Format: Revit or any file format (BIM application(s) or software(s)) approved by the District's Project Manager may be used for development of the BIM Model providing that it is a true parametric, data-based application. The District will give preference to a file format that allows direct linking and interoperability. The Design Builder shall maintain a matrix that summarizes BIM software tools used on the project by all participants.

1.4.5 Level of Detail: The BIM Model shall be developed and detailed sufficiently to meet the requirements of the Request for Proposal and the Contract Documents. The two levels of detail are Generic-model(ed) and Project-model(ed), as defined below. All elements listed under Part 2 Products shall be Project-model(ed). All other elements may be Generic-model(ed). The level of detail described by Part 2: Products shall be subject to further discussion, clarification, and evolution through BIM management meetings. The Design Builder will maintain a building component matrix that documents the BIM scope and clarifies responsibilities and level of detail. This matrix shall be subject to District approval.

1.4.5.1 "Generic-model(ed)": the model and its elements may be based upon the standard objects available from the modeling software without project-specific customization. In addition, generic components may be used early in the BIM development process as "placeholders" for "project modeled" components.

1.4.5.2 "Project-model(ed)": the model and/or a specific element must be customized to reflect project-specific configuration.

1.4.5.3 "2.5D Elements": Model management may require use of 2.5D components. This type of component includes parametric, plan and elevation information but does not include 3D data. The scope of use for 2.5D elements shall be determined through discussions held at BIM management meetings.

1.4.6 OmniClass: The OmniClass Construction Classification System (known as OmniClass or OCCS) is a new classification system for the construction industry developed by the Construction Specification Institute (CSI). It builds upon MasterFormat for work results, UniFormat for elements and EPCI (Electronic Product Information Cooperation) for structuring products. OmniClass is a reference library that will serve as the foundation upon which information is transferred between the construction and operations phases via the BIM Model. The Design Builder shall include the appropriate OmniClass classification in the list of attributes that is assigned to the building elements that will be Project-model(ed).

PART 2 - PRODUCTS

2.1 SYSTEM MODELS

2.1.1 Civil Systems: The Civil Systems Model shall be a sub-system model linked to the architectural system model. The Civil Systems model shall serve as the basis for project shared coordinates through which the position of building elements on the site will be coordinated. Except as noted, provide project-model(ed) elements of:

- 2.1.1.1 Topography: 1) existing natural and/or graded contours, and 2) new grades and finish contours.
- 2.1.1.2 Planting: 1) existing major landscaped areas, 2) existing trees to remain, 3) new landscaped areas, 4) new trees, and 5) irrigation lines over 2" diameter. Planting may be generic-model(ed).
- 2.1.1.3 Surface Improvements: 1) pavements, 2) curbs and gutters, 3) retaining walls, and 4) exterior non-building structures such as pools, shade structures etc.
- 2.1.1.4 Existing Structures: 1) all buildings within the project area intended to remain, 2) buildings intended to be demolished. All existing structures may be generic-model(ed) exterior surface only; interior elements are not required.
- 2.1.1.5 Storm Water and Sanitary Sewers: 1) existing lines (over 3" diameter), boxes and structures within project area, 2) all new lines, boxes and structures, and 3) existing public lines, boxes and structures beyond the project area but serving as points of connection for the project. Storm Water and Sanitary Sewers outside the buildings may be generic-model(ed).
- 2.1.1.6 Utilities: 1) existing domestic and fire water main and branch lines (2" and larger diameter) within project area, 2) all new domestic and fire water lines, 3) existing electrical overhead and underground lines within project area, all new electrical lines outside buildings, 4) existing telephone and data lines within project area, 5) all new telephone and data lines outside buildings, 6) existing gas lines within project area, and 7) all new gas lines outside buildings. Utilities outside buildings may be generic-model(ed).
- 2.1.1.7 Other requirements:
 - 2.1.1.7.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.1.7.2 Schedules: data for installation of the above elements.
- 2.1.2 Architectural Systems: The Architectural Systems Model shall be the primary model to which others are linked. Except as noted, provide project-model(ed) elements of:
 - 2.1.2.1 Spaces: 1) net square footage of all occupied spaces, 2) gross constructed floor area, 3) room names and numbers, and 4) floor, base, wall, and ceiling finishes.
 - 2.1.2.2 Exterior Walls and Curtain Walls: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.
 - 2.1.2.3 Partitions: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.

- 2.1.2.4 Floors: 1) type and material, 2) thickness, and 3) finishes with manufacturer's name and product numbers. Link floor structure to the Structural Systems Model.
 - 2.1.2.5 Ceilings: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.
 - 2.1.2.6 Roof Coverings and Openings: 1) configuration, 2) drainage system, and 3) penetrations for modeled building components.
 - 2.1.2.7 Exterior Doors, Windows, and Louvers: 1) type and material, 2) height, width, and thickness, 3) thermal, acoustic, fire, and security rating, 4) location, and 5) hardware elements or group.
 - 2.1.2.8 Interior Doors, Windows, and Louvers: 1) type and material, 2) height, width, and thickness, 3) thermal, acoustic, fire, and security rating, 4) location, and 5) hardware elements or group.
 - 2.1.2.9 Stairs and Ramps: 1) stairs and railings, 2) ramps and railings, and 3) handrails and guardrails.
 - 2.1.2.10 Elevators and Escalators: 1) elevator cabs and doors, 2) elevator hoistway doors and trim, 3) elevator machinery and equipment, 4) escalator belts and railings, and 5) escalator machinery and equipment.
 - 2.1.2.11 Casework and Counters: 1) type and material, 2) height, width, and depth, 3) location, and 4) hardware.
 - 2.1.2.12 Plumbing Fixtures: 1) type and material, 2) location, 3) trim, and 4) finishes. Link fixtures and trim to the Mechanical Systems Model.
 - 2.1.2.13 HVAC Grills and Registers: 1) type and material, 2) location, 3) trim, and 4) finishes. Link fixtures and trim to the Mechanical Systems Model.
 - 2.1.2.14 Electrical Fixtures: 1) type and material, 2) bulb type and wattage, 3) location, 4) trim, and 5) finishes. Link fixtures and trim to the Electrical Systems Model.
 - 2.1.2.15 Miscellaneous Fittings: 1) toilet partitions, 2) toilet room accessories, 3) grab bars, 4) personal storage lockers, 5) display cases, and 6) other surface applied quasi-permanent items such as mirrors etc.
 - 2.1.2.16 Other requirements:
 - 2.1.2.16.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.2.16.2 Schedules: data for installation of the above elements.
- 2.1.3 Structural Systems: The Structural Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide project-model(ed) elements of:

- 2.1.3.1 Foundations and footings: 1) type and configuration, and 2) depth, length, and width.
- 2.1.3.2 Slab(s) on-grade: 1) type and configuration, 2) under-slab base and waterproofing, 3) recesses, curbs, pads, closure pours, and 4) major penetrations.
- 2.1.3.3 Basement Walls: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.
- 2.1.3.4 Elevated Floors: 1) columns and beams, 2) primary and secondary framing members, 3) bracing, 4) connections, and 5) framed, composite, and/or slab decks.
- 2.1.3.5 Roofs: 1) columns and beams, 2) primary and secondary framing members, 3) bracing, 4) connections, and 5) framed, composite, and/or slab decks.
- 2.1.3.6 Joints: 1) expansion and/or contraction, and 2) seismic.
- 2.1.3.7 Stairs and Ramps: 1) openings and framing, and 2) railing supports.
- 2.1.3.8 Shafts and Pits: 1) openings and framing, and 2) railing supports.
- 2.1.3.9 Other requirements:
 - 2.1.3.9.1 Quantities: include data to reflect accurate quantities of the above elements.
 - 2.1.3.9.2 Schedules: data for installation of the above elements.
 - 2.1.3.9.3 Fireproofing: Fireproofing is not to be included in the BIM but clash detection studies shall include definition of tolerances for conflict detection.
 - 2.1.3.9.4 Color Code: color code structural steel from other elements.
- 2.1.4 Mechanical: The Mechanical Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide project-model(ed) elements of:
 - 2.1.4.1 Heating, Ventilating, and Air Conditioning: 1) all heating, ventilating, air-conditioning, exhaust fans, and specialty equipment, 2) air supply, return, ventilation and exhaust ducts, including space-consuming elbows and transitions, 3) fire dampers with ratings, 4) mechanical piping, and 5) registers, diffusers, grills and hydronic baseboards. Coordinate and link fixtures and trim to the Architectural Systems Model.
 - 2.1.4.2 Plumbing: 1) all domestic plumbing piping and fixtures, 2) floor and area drains, and 3) related equipment.
 - 2.1.4.2.1 Piping larger than 1 .5" diameter shall be modeled.

- 2.1.4.3 Roof Drainage: 1) all piping and fixtures, and 2) related equipment.
 - 2.1.4.3.1 Piping larger than 1 .5" diameter shall be modeled.
- 2.1.4.4 Other requirements:
 - 2.1.4.4.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.4.4.2 Schedules: schedule data for installation of the above elements.
 - 2.1.4.4.3 Equipment Clearances: Clearances for major equipment and all M/E/P Equipment and Architecturally Significant Equipment, as model objects for conflict detection and maintenance access requirements.
 - 2.1.4.4.4 Color Code: separate color code for each type element.
- 2.1.5 Electrical: The Electrical Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide project-model(ed) elements of:
 - 2.1.5.1 Interior Electrical Power and Lighting: 1) all interior electrical components, 2) lighting, receptacles, special and general purpose power receptacles, 3) lighting fixtures, 4) panel-boards and control systems, and 5) conduit and cable trays.
 - 2.1.5.1.1 Individual conduit larger than 1 .5" diameter shall be modeled.
 - 2.1.5.1.2 Groups or clusters runs of conduit of all sizes shall be modeled.
 - 2.1.5.2 Exterior Building Lighting: 1) all exterior electrical components, 2) lighting, receptacles, special and general purpose power receptacles, 3) lighting fixtures, 4) panel-boards and control systems, and transformers, and 5) utility connection and equipment.
 - 2.1.5.2.1 Individual conduit larger than 1 .5" diameter shall be modeled.
 - 2.1.5.2.2 Grouped or clustered runs of conduit of all sizes shall be modeled.
 - 2.1.5.3 Telephone, Data, Television, and Other Low Voltage: 1) all interior low voltage components, 2) outlets, receptacles, special and controls, 3) fixtures, 4) panel-boards, equipment racks, and control systems, and 5) conduit and cable trays.
 - 2.1.5.3.1 Individual conduit larger than 1 .5" diameter shall be modeled.

- 2.1.5.3.2 Groups or clusters runs of conduit of all sizes shall be modeled.
- 2.1.5.4 Other requirements:
 - 2.1.5.4.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.5.4.2 Schedules: schedule data for installation of the above elements.
 - 2.1.5.4.3 Equipment Clearances: Clearances for major as model objects for conflict detection and maintenance access requirements.
 - 2.1.5.4.4 Color Code: separate color code for each type element.
- 2.1.6 Fire Suppression: The Fire Suppression Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide Project-model(ed) elements of:
 - 2.1.6.1 Fire Suppression System: 1) valves and risers, 2) all main, branch, and drains lines, 3) sprinkler heads, and fittings, 4) pumps.
 - 2.1.6.2 Fire Alarms: 1) alarm and notification devices, and 2) detection systems.
 - 2.1.6.3 Other requirements:
 - 2.1.6.3.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.6.3.2 Schedules: schedule data for installation of the above elements.
 - 2.1.6.3.3 Equipment Clearances: Clearances for major equipment as model objects for conflict detection and maintenance access requirements.
 - 2.1.6.3.4 Color Code: separate color code for each type element.
- 2.1.7 Equipment: The Equipment Model shall be a sub-system model linked to the architectural model. Except as noted provide Project-model(ed) elements of:
 - 2.1.7.1 Equipment: related security, mechanical, plumbing, and electrical requirements.
 - 2.1.7.1.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.7.1.2 Schedules: schedule data for installation of the above elements.

- 2.1.7.1.3 Equipment Clearances: equipment clearances as model objects for conflict detection and maintenance access requirements.

2.2 MODEL SOFTWARE REQUIREMENTS

2.2.1 The Design Builder's selected BIM application(s) and software(s) for the BIM Model shall:

- 2.2.1.1 Have maximum interoperability between systems models, and shall be fully compatible with Revit 2023 software and later.
- 2.2.1.2 Be provided in a format that is compatible with a free software download for viewing the Design Builder's models with the ability to save and track user annotations and notes.
- 2.2.1.3 Contain reports/logs of:
 - 2.2.1.3.1 Discrepancies and/or clarifications in the Contract Documents or Construction Documents identified during the modeling process.
 - 2.2.1.3.2 Conflicts between location and alignment of model elements with resolutions developed by the Design Builder.
 - 2.2.1.3.3 Quantities of modeled building element.
 - 2.2.1.3.4 Schedule for each building element.
- 2.2.1.4 For any additional electronic model information that is not supported by the Revit or the primary software solution approved by Program Manager, and for constructing 4D models, the Design Builder shall utilize Revit 2023 software.
- 2.2.1.5 Be provided in a format that links with cost and scheduling software utilities.

PART 3 - EXECUTION

3.1 DEVELOPMENT AND SUBMITTAL OF THE MODELS

3.1.1 The Design Builder shall develop the BIM Model and its systems models in compliance with the Contract Documents and the following:

- 3.1.1.1 Develop and submit all of the systems models concurrently. Note: if any of the systems models qualify as deferred approvals, they may be submitted separately.
- 3.1.1.2 Submit models with generic-model(ed) information as required to satisfy the requirements of the Request for Proposal.
- 3.1.1.3 Submit partially completed models during the Design Development and Construction Documents Phase submittals outlined in Section 01 11 20 (Design Services and Submittals), for review and coordination.

- 3.1.1.4 Submit partially complete models at any time when the District requests changes and/or clarifications or Design Builder proposes changes.
- 3.1.1.5 Submit fully completed BIM Model and its systems models, prior to construction.
- 3.1.1.6 Submit updated systems models complying with final approved shop drawing submittals.
- 3.1.1.7 Submit the “as-built” BIM Model and its systems models as part of the close-out process.

3.2 UPDATING THE MODELS DURING CONSTRUCTION

- 3.2.1 The BIM Model shall be updated/revised to keep it current with construction activity as follows:
 - 3.2.1.1 Updating: issue the BIM Model and its systems models one week before each regularly scheduled Construction Phase Coordination meeting as defined in Section 01 31 19 (Project Meetings).
 - 3.2.1.2 Revising: issue the revised BIM Model and/or its systems models immediately after each meeting or other activity where revisions have been made. Include a report that indicates every change.
- 3.2.2 Submit the updates and revisions to the District.

3.3 DELIVERY OF FINAL AS-BUILT MODELS

- 3.3.1 The final updated and revised BIM Model and all its systems models shall be submitted to the District as part of the close-out submittals.
- 3.3.2 The BIM Model and all its systems models will be:
 - 3.3.2.1 Editable for future expansion or remodel projects.
 - 3.3.2.2 Functioning for use with 3-D Facilities Management Software.

END OF SECTION

SECTION 01 82 00

DEMONSTRATION AND TRAINING PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Contract Documents shall be reviewed for applicable provisions related to the provisions in this document, and provisions in the General Conditions and other Division 1 Specification Sections shall apply to this Section without limitation.

1.2 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

- A. Section 01010 – “Summary of Work”
- B. Section 01770 – “Contract Closeout Procedure”
- C. Division 2 through 33 Sections for Demonstration and Training requirements for the work in those Sections

1.3 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing District’s personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment
 - 2. Training in operation and maintenance of systems, subsystems, and equipment
 - 3. Demonstration and training videos

1.4 SUBMITTALS

- A. Instruction Program: Design Builder shall submit 5 copies of the instructional program outline for all required demonstration and training to District for approval. Outlines shall include:
 - 1. Schedule of proposed meeting dates and times
 - 2. Description of topics to be covered and learning objectives
 - 3. Length of instruction time
 - 4. Instructor’s names and qualification information for each training module
- B. At completion of training, provide two complete training manuals for the District’s use.
 - 1. Training Manual shall comply with Section 01780 (Project Record Documents.)
- C. Attendance Record: For each training module, provide list of participants and length of instruction time.
- D. Demonstration and Training (DVD) Videos: Submit 2 digital copies to District within 5 days of completion of each training module.
 - 1. Identification: On each CD/DVD copy Design Builder shall, provide an applied label with the following information:
 - a. Project Name
 - b. Project Number
 - c. Contract Number

- d. Name of Design Builder or Contractor with address, and telephone number
- e. Date video was recorded
- f. Topic(s) covered

1.5 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative or District approved equivalent, complying with requirements in Section 01400 (Quality Control Requirements,) and experienced in operation and maintenance procedures and training for Project specific systems and equipment.
- B. Design Builder shall coordinate instruction schedule and verify availability of educational materials, instructor's personnel, audiovisual equipment, and facilities needed to avoid delays.
- C. For instruction that must occur outdoors, review weather forecast and provide alternatives if conditions are unfavorable.

1.6 COORDINATION

- A. Design Builder shall coordinate instruction schedule with the District Project. Adjust schedule as required to ensure proper attendance and to minimize disrupting Campus operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by District.
- C. Provide written notice (15) working days in advance to District prior to any scheduling instruction sessions. District shall furnish Design Builder with names and positions of intended participants.
- D. Design Builder shall provide and coordinate schedule of all required training with Project Phases. Coordinate with the District

PART 2 - PRODUCT

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Design Builder shall develop and provide instruction program that includes group training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows **(If Applicable)**:
 - 1. Motorized doors including, but not limited to, the following:
 - a. Overhead coiling doors
 - b. Overhead coiling grilles
 - c. Automatic entrance doors
 - 2. Equipment including, but not limited to, the following:
 - a. Projection screens
 - b. Loading dock equipment
 - c. Waste compactors
 - d. All Food-service equipment and appliances, including coolers and refrigerators
 - e. Exhaust hoods and controls

3. Fire-protection systems including, but not limited to, the following:
 - a. Fire alarm
 - b. Fire pumps
 - c. Fire-extinguishing systems
 - d. Fire sprinkler system
4. Intrusion detection systems
5. Conveying systems including, but not limited to, the following:
 - a. Elevators
 - b. Wheelchair lifts
6. Heat generation including, but not limited to, the following:
 - a. Boilers
 - b. Pumps
 - c. Steam distribution piping
 - d. Water distribution piping
7. Refrigeration systems including, but not limited to, the following:
 - a. Chillers
 - b. Cooling towers
 - c. Condensers
 - d. Pumps
 - e. Distribution piping
8. HVAC systems including, but not limited to, the following:
 - a. Air-handling equipment
 - b. Air distribution systems
 - c. Terminal equipment and devices
 - i) Chilled beams
 - ii) Radiant floor systems
9. HVAC instrumentation and controls, including BAS. See Section 15950.
10. Electrical service and distribution including, but not limited to, the following:
 - a. Transformers
 - b. Switchboards
 - c. Panelboards
 - d. Uninterruptible power supplies
 - e. Motor controls
11. Lighting Fixture equipment and controls
12. Communication systems including, but not limited to the following:
 - a. Intercommunication
 - b. Surveillance
 - c. Voice and data equipment

- d. Other as required elsewhere in the Contract Documents
- B. Training Modules: Design Builder shall develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Review basis of system design
 - 2. Operational requirements and criteria, including:
 - a. System, subsystem, and equipment descriptions
 - b. Operating standards
 - c. Regulatory requirements
 - d. Operating characteristics
 - e. Limiting conditions
 - f. Performance curves
 - 3. Detailed review of documentation, including:
 - a. Emergency manuals and procedures
 - b. Operations manuals and procedures
 - c. Maintenance manuals and procedures
 - d. Identification systems
 - e. Warranties and Guarantees
 - f. Maintenance service agreements and similar continuing commitments
 - g. Normal shutdown instructions
 - h. Required sequences for electric or electronic systems
 - i. Special operating instructions and procedures
 - j. Troubleshooting and diagnostics
 - k. Test and inspection procedures

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up as required at instructional location.

3.2 DEMONSTRATION AND TRAINING VIDEOTAPES

- A. Record each demonstration and training session separately using digital video. Include classroom instructions, demonstrations, board diagrams, and other visual aids.
- B. Video Format: Provide high-quality color digital video.
- C. Fix camera before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.
- D. Describe scenes on video using audio narration while video is recorded.

END OF SECTION 01 82 00

MISCELLANEOUS HAZARDOUS MATERIALS PERFORMANCE REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- 1.1.1 Scope of Work: The Design Builder shall hire a competent Hazardous Materials Consultant to investigate, survey and report on Hazardous Materials discovered at the site. Except as otherwise expressly specified herein, the Design Builder's Hazardous Substances Removal Contractor ("Contractor") will supply all labor, supervision, materials, equipment, tools, services, insurance and each and every item of expense necessary for the removal, handling, management, packaging, transportation and disposal of miscellaneous hazardous materials, herein called the "Work."
- 1.1.2 Applicability: Except as otherwise may be provided for, the requirements of the Contractor will apply to the Design Builder and, by extension, to all subcontractors engaged in the removal or handling of the miscellaneous hazardous materials designated herein. To the extent allowable by law, the District will be the sole and final arbiter of which contractor(s) or subcontractor(s) qualify to remove Hazardous Materials at the Project Site.
- 1.1.3 Miscellaneous Hazardous Materials: The Contractor shall notify the District of the presence of any items identified in specification 4.11 of Section 00 50 00 (Form of Agreement) within 24 hours of its discovery at the Project site.
- 1.1.4 Limitation of Responsibility: The role of the Design Builder's Industrial Hygiene Consultant (hereinafter referred to as the "Project IH Consultant") in this project is to provide independent, third-party industrial hygiene/hazardous materials consulting services on behalf of the District. Such services may or may not include conducting on-site work observations, materials or environmental testing, and/or consulting with the District. It is not the responsibility of the Project IH Consultant to supervise the Contractor; nor to direct the Contractor's work effort; nor to assume the management of, or responsibility for, the Contractor's health and/or safety practices, nor its waste management, nor its regulatory compliance. At all times, the Contractor is solely responsible for the quality and execution of all phases and aspects of the Work.

1.2 SUBMITTALS

1.2.1 General:

- 1.2.1.1 In addition to any other contractual submittals required of the Contractor, the Contractor will provide the submittals described in this Section. Submittals will be reviewed by both the District and the Project IH Consultant for acceptability. The Project IH Consultant will either recommend submittals to the District for acceptance, or will return them as deficient, with notations for correction and re-submission. The Project IH Consultant does not have authority to "approve" submittals.

1.2.2 Schedule And Format:

- 1.2.2.1 Delivery: Submittals listed in this section must be delivered to the District for conveyance to the Project IH Consultant.
- 1.2.2.2 Quantity: Five (5) identical, legible copies and one complete pdf of each submittal listed in this section shall be delivered in an organized fashion suitable to the District for review. One (1) copy will be conveyed by the District to the Project IH Consultant for review.
- 1.2.2.3 Work Commencement: No portion of the Work that is dependent upon submittal acceptance shall be commenced by the Contractor until the submittals are reviewed and accepted by the District or its designated representative.
- 1.2.2.4 Delays: Delays to the Work resulting from the submittal of deficient or illegible documentation, or from the untimely submittal of potentially acceptable documentation, shall be the sole responsibility of the Design-Builder. Except as otherwise granted by the District, no extensions will be made to the awarded contract schedule or budget to accommodate such delays.
- 1.2.2.5 Format: Submittals will be provided in 8-1/2" x 11" format, organized in a standard 3-ring binder, with sections separated by numbered tabs indexed to a printed Table of Contents. Illegible submittals will be considered deficient and returned to the Design/Builder for correction.
- 1.2.2.6 Pre-work Submittals: Pre-work submittals shall be delivered to the District not less than ten (10) Business Days prior to the Contractor's mobilization onto the work site. Deficient submittals must be resubmitted by the Design-Builder within five (5) Business Days after return of review copy. Once accepted, the reviewed copy will be returned to the Design-Builder, who must maintain a copy of the reviewed submittal at the job site. The following is to be submitted:
 - 1.2.2.6.1 Worker Qualifications: Name and qualifications of each employee to be engaged in handling or removal of materials specified in this Section.
 - 1.2.2.6.2 Technician Certification: The U.S. EPA requires that individuals who perform maintenance, service, repair, or disposal of ODCs be certified in accordance with Section 608 of the Clean Air Act, as amended (Section 608). The Contractor will submit documentation of certification for any technician or subcontractor to be engaged in work covered by Section 608.
 - 1.2.2.6.3 Worker Training: The Contractor shall provide current (within previous 12 months) valid documentation of worker training in accordance with Cal/OSHA Hazardous Waste Operations and Emergency Response (8 CCR §5192, "HAZWOPER") for any workers or subcontractors engaged in work specified in this Section. An exception to this

training requirement will be made for workers or subcontractors engaged solely in work involving handling or disposal of ODCs.

- 1.2.2.6.4 Permits/Licenses: The Design-Builder is responsible for obtaining any permits or licenses and for making any regulatory notifications required to perform the work of this Section. The Design-Builder will deliver one (1) copy of all permits, approvals and notifications to the District at least five (5) Business Days before beginning the Work of this Section.
 - 1.2.2.6.5 Subcontractors: Submit qualifications and twenty-four (24) hour contact information for each subcontractor to be used. This shall include two (2) legible copies of federal, state, and/or local business or operating permits, as well as State and/or EPA identification numbers for the waste transporters and disposal facilities to be used.
 - 1.2.2.6.6 Waste Hauling Qualifications: Submit proof of hazardous waste transporter's registration and the vehicle operator training. Submittals shall include, but not necessarily be limited to: business name, address (mailing address and physical location), and business telephone number of the company; primary contact name and emergency contact (24-hour) telephone number; documentation of current State and/or EPA authorization to operate; and insurance coverage.
 - 1.2.2.6.7 Waste Disposal Facility Qualifications: Submit documentation of the California State and/or EPA-approved waste recycling, disposal, and/or treatment facilities designated to receive shipments of hazardous and universal wastes generated during this project. Such information will include, but not necessarily be limited to: business name, address (mailing address and physical location), and business telephone number of the facility; primary contact name and emergency contact (24-hour) telephone number; documentation of current State and/or EPA authorization to operate; operator's facility I. D. number; classification and/or types of waste(s) accepted; name, business address and telephone number of insurance provider; documentation of insurance type(s), coverage amounts, and any limitations on liability; and any regulatory agency information pertaining to known citations issued, notices of violations issued, corrective actions ordered, Records of Decisions rendered, or on-going environmental investigations or known liabilities.
- 1.2.2.7 Post-work Submittals: The Design-Builder will, within twenty (20) Business Days of Contractor's demobilization from the Project Site, submit two (2) copies of all waste disposal documentation (waste manifests, recycler's or reclaimer's receipts, or other applicable

documentation) to demonstrate appropriate material management and disposal. If the Project IH Consultant or District determines that the Post-work Submittals are inadequate and/or require additional unanticipated review time, the Contractor will be required to correct the deficiencies and re-submit them for additional review. Any additional cost for the Project IH Consultant's time to perform a subsequent review(s) of Post-work Submittals will be borne by the Design-Builder.

1.3 QUALITY REQUIREMENTS

1.3.1 Reference Standards:

- 1.3.1.1 Regulations: Applicable regulations pertaining to this work include, but are not limited to, the following:
 - 1.3.1.1.1 California Department of Occupational Safety and Health (Cal-OSHA) – General Industry Safety Orders Hazardous Waste Operations and Emergency Response (8 CCR §5192 et seq.).
 - 1.3.1.1.2 California Health & Safety Code Section 25163(c).
 - 1.3.1.1.3 Title 22, California Code of Regulations, Section 66261.24 et seq.
 - 1.3.1.1.4 Title 22, California Code of Regulations, Section 66268.7(a)(4) et seq.
 - 1.3.1.1.5 Title 22, California Code of Regulations, Section 66268.114 et seq.
 - 1.3.1.1.6 California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop. 65).
 - 1.3.1.1.7 Title 22, California Code of Regulations, Division 4.5, Chapter 23 – Universal Waste Rule - California Department of Toxic Substances Control (DTSC).
 - 1.3.1.1.8 Title 40, Code of Federal Regulations, Part 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP) (U.S. EPA).
 - 1.3.1.1.9 Title 40, Code of Federal Regulations, Part 82 et seq., Protection of Stratospheric Ozone. U.S. Environmental Protection Agency (U.S. EPA).
 - 1.3.1.1.10 Title 40, Code of Federal Regulations, Part 761, et seq., Polychlorinated Biphenyl (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions. U.S. Environmental Protection Agency (U.S. EPA).

1.3.1.1.11 Title 49, Code of Federal Regulations, Part 172, U.S. Department of Transportation.

1.3.1.1.12 All other applicable Federal, State, and/or Local regulations, codes, and ordinances.

1.3.1.2 **Applicability.** The most current version of each document shall apply. Where conflicts among these specifications exist, the more strict or stringent requirement or interpretation shall apply.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 **Examination of Conditions:** The Design/Builder must carefully examine the work site before beginning work and report any previously undisclosed or special conditions to the District. Except as may be otherwise stipulated elsewhere in the Contract Documents, starting the Work shall be interpreted as implied acceptance of conditions as they exist.

3.1.2 **Responsibility for Work:** By commencing the Work, Design/Builder acknowledges and agrees that it has sole and primary responsibility and obligation to the District to make inspections of its own work at all stages of the Work. This includes acknowledging and agreeing that it has sole responsibility to supervise or superintend the performance of the Work, and that said work will be in strict adherence to, and in compliance with, all applicable methods, materials, regulations, and required standards whether or not specified herein. Where conflicts arise between standards or regulations, the more stringent will apply.

3.1.3 **Coordination of Work:** The Design-Builder is responsible to coordinate all scheduling, phasing, and completion of the Work with the District and all other employers working on the job site.

3.1.4 **Measurements and Quantities:** The Design-Builder is responsible to field verify all measurements, dimensions and quantities before starting the Work. Discrepancies between plan and field dimensions or quantities must be reported to the District as soon as discovered.

3.2 WASTE MANAGEMENT AND DISPOSAL

3.2.1 **General:** The Design-Builder is responsible for the safe handling, storage and transportation of all hazardous waste generated by the Work. By commencing this work, the Design-Builder implicitly agrees to bear all costs arising from any claims, damages, losses, and/or clean-up expenses incurred which, as a result of the Design-Builder's negligence, result from a hazardous waste spill(s) or release(s) on the Project site and/or while hazardous waste is in transport to a waste disposal facility. The Design-Builder or its designated subcontractor waste hauler will deliver all waste materials to an appropriately designated waste disposal facility that is acceptable to the District and which is permitted in accordance with applicable regulations.

- 3.2.2 Storage Facilities: The Design-Builder will assure that all waste (hazardous and non-hazardous) generated by the Work is stored in a secured manner until received at the waste disposal facility. Debris bins, storage enclosures, etc. will be locked overnight and whenever the Design-Builder is off-site or unable to directly monitor the contents. The Design-Builder will ensure that the appropriate and required warning signs are posted on waste storage locations. The Design-Builder will be responsible to maintain the waste storage facilities in an orderly and well-kept condition at all times. The Design-Builder will conduct routine waste storage area inspections to assure that appropriate storage conditions are maintained. Waste is not to be co-mingled with stored non-waste material or equipment.
- 3.2.3 Off-site Shipment of Wastes: The Design-Builder shall notify the District or its Representative in advance, whenever hazardous waste must be removed from the site. A copy of the Uniform Hazardous Waste Manifest or any other documents required by Federal, State, or Local agencies shall be completed by the Design-Builder and submitted to the District or its Representative for review and signature prior to transporting hazardous waste materials to a disposal facility. The Design-Builder shall provide the District or its Representative with sufficient advance notice of the need to obtain manifest signatures, so as to not delay waste shipment or otherwise impede the Project Schedule. Only the District or its Representative has authority to sign or approve waste shipping documents. It is the Design-Builder's responsibility to obtain the necessary authorized signatures to ship wastes off-site. Delays or expenses resulting from the untimely waste document coordination shall be borne by the Design-Builder.
- 3.2.4 Waste Shipment Documentation: EPA Uniform Hazardous Waste Manifest form or such other form or forms required by law or regulation shall be used for all waste transported off-site for hazardous waste disposal. A non-hazardous waste Bill of Lading will be used for all waste transported off-site for disposal or recycling as non-hazardous waste. All waste loads removed from the Project Site will be weighed by a Certified Weighmaster prior to delivery to the disposal facility. Certified weight tickets shall be submitted by the Design-Builder as a part of the Post-job Submittals. At the conclusion of the Work, the Design-Builder will provide documentation that the hazardous waste was disposed of at an appropriate EPA-approved waste disposal facility. The documentation will be submitted as part of the Post-Job Submittals.
- 3.2.5 Shipment Containers: All waste shipping containers must be individually labeled with appropriate signage and warnings, as required by applicable regulations, codes and ordinances.

END OF SECTION

SITE CONSTRUCTION PERFORMANCE REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- 1.1.1 The Criteria Documents indicate site development design intent for the Engineering Technology Renovation Project, consistent with applicable building codes and standards.
- 1.1.2 The Criteria Documents show conceptual layout and design, with approximate quantities only. The specifications identify minimum levels of quality, materials and workmanship. If there are differences between this Section and the Criteria Documents submit RFI prior to submittal of Proposal for clarification.

1.2 SITE UTILITIES

- 1.2.1 General: The Design Builder shall prepare final plans and documents to the applicable codes and standards, obtain the necessary permits and local jurisdiction approvals, and coordinate all systems with final Construction Documents and the District.
- 1.2.2 Temporary Connections: Various utilities identified on the Criteria Documents requiring relocation may interrupt service to neighboring buildings that are intended to remain in operation. Sequence of construction operations shall be scheduled to minimize time of interrupted service. In some cases, temporary services to these buildings shall be required and shall be provided. Refer to the Criteria Documents for details.
- 1.2.3 Water: Complete existing and proposed water and fire water system descriptions and design criteria are provided in the Criteria Documents.

Sanitary Sewer: Criteria to be followed when designing the on-site and off-site sanitary sewer systems and descriptions of the existing and proposed sanitary sewer systems are provided in the Criteria Documents.
- 1.2.4 Electrical: Criteria Documents indicate relocation of existing electrical lines throughout the site. Criteria for equipment, pipe materials, and other requirements can be found in the Criteria Documents. The Design Builder shall prepare final plans and coordinate final design and equipment selection with the electrical vendors, PG&E and the District Representative.
- 1.2.5 Telecommunications, Fire Alarm, etc. Systems: Criteria Documents indicate routing of new communications utilities and relocation of existing communications utilities throughout the site. Criteria for equipment, pipe materials, and other requirements can be found in the District Standards.

1.3 GRADING AND EROSION CONTROL

- 1.3.1 The Design Builder shall produce and obtain approval of the site Storm Water Pollution Prevention Plan (SWPPP). Design Builder is responsible for obtaining

the NPDES Notice of Intent and Notice of Termination from the State Water Resources Control Board and the District. Design Builder is responsible for implementing all Best Management Practices (BMPs) for preconstruction, construction and post-construction as recommended by the SWPPP document, which is an integral part of the final construction documents. Provide a copy of all such documents to the District Representative for approval.

- 1.3.2 Erosion control materials shall be stored onsite by the Design Builder and made available for immediate use. BMPs, including the placement of erosion control materials on or near the limits of work, shall be implemented as shown on the final approved SWPPP. Prevention and control measures shall be adjusted as the site conditions change with the phasing of the various areas of construction. All prevention and control measures required by the District, and the State Water Quality Act and incorporated into the SWPPP and BMPs shall be in place at the end of every workday.
- 1.3.3 Dirt and debris on the Project site and impacts to the neighboring communities is a major concern. Water shall be provided on-site to control dust during construction operations.
- 1.3.4 Permanent erosion control measures shall be provided as required by the Criteria Documents.

1.4 SITE DEVELOPMENT

1.4.1 Hardscape

1.4.1.1 Paving:

- 1.4.1.1.1 Primary pedestrian sidewalks are poured-in-place and colored and textured to match the design documents.
- 1.4.1.1.2 Vehicular traffic and traffic parking areas are generally asphaltic concrete with concrete curbs or curbs and gutters.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 91 00

GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Commissioning requirements common to all Sections.
- B. Systems and equipment 'Pre-Functional' and 'Functional Performance Testing'.
- C. Validation of proper and thorough installation of systems and equipment.
- D. Equipment performance verification.
- E. Documentation of tests, procedures, and installations.
- F. Coordination and requirements of 'Training Events'.
- G. Preparation and logistics of Systems Manual content.
- H. Management of record construction documentation.

1.2 GENERAL DESCRIPTION

- A. Commissioning (Cx) is the process of ensuring that (i) all building systems are installed and perform interactively according to the design intent; (ii) that systems are efficient and cost effective and meet the Owner's operational needs; (iii) that the installation is adequately verified and documented; and (iv) that the Operators are adequately trained. Commissioning serves as a tool to minimize post-occupancy operational problems and establishes testing and communication protocols to advance the building systems from installation to optimized, fully-dynamic operation.
- B. The Commissioning Provider (CxP) shall work collaboratively with the Contractor and the design engineers to direct and oversee the Cx process and perform Functional Performance Testing.
- C. This Section contains the content for Construction Phase of the Commissioning Plan. The specification Sections dictate all requirements of the commissioning process relative to the construction contract.
- D. This and other commissioning sections of the specification detail the Contractor's responsibilities relative to the Cx process.
- E. This Section covers requirements, procedures, and protocols common across all Divisions of the work. Requirements specific to individual Sections are generally specified in the technical specifications as well as a dedicated commissioning section for each major subcontractor Division or Section designation.
- F. Specific systems to be commissioned are indicated in the following Divisions of the Specification:

1. All Divisions: Conformance to the following provisions of the Cx requirements is required under Division 01 and this Section:
 - a. 'Equipment and Systems Training' as required by individual Sections.
 - b. Operation and Maintenance Manual preparation and maintenance.
 - c. Record Document preparation and maintenance.
2. Division 22 – Plumbing: Requirements for Cx are specified in Section 22 08 00 as well as in individual Division 22 Sections.
3. Division 23 – HVAC and BMS: Requirements for Cx are specified in Section 23 08 00 as well as in individual Division 23 Sections.
4. Division 26 – Electrical: Requirements for Cx are specified in Section 26 08 00 as well as in individual Division 26 Sections.

1.3 SCOPE

- A. The following systems and equipment are included in the Scope of Commissioning for this project. The sampling rates are 100% of central systems and 25% of zone systems.

1. Mechanical/HVAC Systems: Division 23 equipment and systems are subject to commissioning, including but not limited to the systems listed below. All components and devices (sensors, valves, etc.) that make up these systems are included.
 - a. Air Handling Units (AHU-1-1 and AHU-2-1)
 - b. Relief Fans (RF-1-1 and RF-2-1)
 - c. Terminal Units (All; 75 total)
 - d. Air Distribution Systems
 - e. Radiant Manifolds & Radiant Slabs (including circulating pumps, hydronic accessories; 14 total)
 - f. Exhaust Fans (EF-L1, L-2 & R-1)
 - g. Split System Condensing Units (CU-1-1 & CU-1-2))
 - h. Split System Fan Coil Units (FCU 1-1, 2-1 & 2-2)
 - i. Air Cooled Chiller (ACH-1)
 - j. Heat Pump Chiller (HP-1)
 - k. Heating Hot Water Pumps (HHWP-1 and HHWP-2)
 - l. Chilled Water Pumps (CHWP-1 and CHWP-2)
 - m. CHW and HW Hydronic Piping and Pumping Systems
 - n. Variable Frequency Drives (VFD-LL-1, LL-2, L1-1, L1-2, R-1, R-2, R-3 & R-4)
 - o. Expansion Tanks (ET-1 & ET-2)
 - p. Buffer Tanks (BT-1)
 - q. Chemical Pot Feeders
 - r. Air Separator (AS-1)
 - s. Testing and Air Balancing (all aspects)
 - t. The entire BMS shall be subject to commissioning, including all hardware components, software, networking, programming, installation, and controls documentation.
2. Mechanical/Plumbing Systems: The following Division 22 and Division 23 equipment and systems may be subject to commissioning, including but not limited to the systems listed below. All components and devices that make up these systems are included.
 - a. Plumbing Piping Systems
 - b. Electric Water Heaters (EWH-1-1, 1-2 and 1-3)
 - c. Instantaneous Electric Water Heater (IEWH-1-1)
 - d. Domestic Circulating Pumps (CP-1-1, 1-2 and 1-3)

- e. Thermostatic Mixing Valves (TMV-1-1, TMV-1-2, TMV-1-3 and TMV-1-4)
 - f. Interface between plumbing and BMS
 - g. Backflow Preventers
3. Electrical Systems: The following Division 26 equipment and systems may be subject to commissioning, including but not limited to the systems listed below. All components and devices that make up these systems are included.
- a. Medium Voltage Feeders and Primary Service Feeders
 - b. Medium Voltage Disconnect & Grounding Switches
 - c. Medium Voltage Interior Transformers
 - d. Switchgear/Switchboards
 - e. Disconnect Switches
 - f. Circuit Breakers
 - g. Distribution Dry-Type Transformers
 - h. Distribution and Branch Circuit Panelboards
 - i. Feeders and Large Branch Circuits
 - j. Branch Circuits and Receptacles
 - k. Lighting and Digital Lighting Controls
 - l. Electric Digital Power Metering

1.4 RELATED WORK AND DOCUMENTS

- A. Commissioning Plan (Cx Plan): LEED and some other rating systems still require a standalone Cx Plan, but these have been historically superseded by detailed commissioning specifications. The commissioning requirements provided in these specifications constitute the construction phase Cx Plan for this project.
- B. Section 01 31 00 – Project Management and Coordination: Introduces Commissioning and references Section 01 91 00.
- C. Section 01 32 00 – Construction Progress Documentation: Stipulates the scheduling requirement related to the Cx process.
- D. Section 01 33 00 – Submittal Procedures: Stipulates additional copies of submittals to be submitted and refers to other Sections for additional submittal requirements related to the Cx process.
- E. Section 01 40 00 – Quality Requirements: Specifies the requirements for construction quality control.
- F. Section 01 77 00 – Closeout Procedures: Stipulates ‘Substantial Completion’ and ‘Final Completion’ requirements and the basic terms of the construction warranty. Stipulates general O&M data requirements and refers to other Sections. Stipulates requirements for developing and maintaining Project Record Documents. Defines the means and methods by which Training programs shall occur.
- G. Section 01 78 23 – Operation and Maintenance Data: Stipulates operation and maintenance data required.
- H. Section 01 78 36 – Warranties: Stipulates requirements for and the basic terms of the construction warranty.

- I. Section 01 78 39 – Project Record Documents: Stipulates requirements for developing and maintaining Project Record Documents.
- J. Section 01 79 00 – Demonstration and Training: Defines the means and methods by which training programs shall occur.
- K. Section 01 91 00 – General Commissioning Requirements: Details the Cx requirements common across all divisions.
- L. Section 01 91 10 – Functional Testing Procedures: Outlines 'generic' Functional Testing Procedures required for specific system types subject to the Cx process.
- M. Section 22 08 00 –Plumbing Systems Commissioning: Details the Cx procedures specific to Plumbing Systems work.
- N. Section 23 08 00 – HVAC Systems Commissioning: Details the Cx procedures specific to HVAC work.
- O. Section 26 08 00 – Electrical Systems Commissioning: Details the Cx procedures specific to Electrical Systems work.

1.5 DEFINITIONS AND ABBREVIATIONS

- A. The following definitions and abbreviates are provided to refence the various elements of the commissioning process and specifications.
 - 1. Acceptance Phase: This is the phase of the project when the facility and its systems and equipment are inspected, tested, verified, and documented; and when most of the Functional Performance Testing and final training occurs. This will generally occur after the Construction Phase is complete (after Pre-Functional Documentation have been completed). The Acceptance Phase begins upon System 'Turn-Over' with certification by the Contractor that the systems have been placed into service in accordance with the approved protocols and after the submission of the approved Pre-Functional Documentation. The Acceptance Phase ends with the successful completion of all Functional Performance Testing and sign-off by the CxP (add Owner and other Parties as applicable) AND the successful completion of the Endurance Period as applicable for the critical areas.
 - 2. Action Item (AI): Any Cx-related issue that requires a response, completion, corrective or additional work, or any other action. Examples include a Request for Information (RFI), a work directive, a clarification request, a to-do item, an identified deficiency, or any other like item. Action Items must be categorized as appropriate.
 - 3. Action List: This is a list that is maintained and updated by the CxP that includes all Action Items that relate to Cx activities.
 - 4. Activation: The process of relocating the occupants; fitting out the furniture, furnishings, and equipment (FF&E); and generally ensuring a smooth occupant transition.
 - 5. A/E: General reference to the Architect/Engineer lead-design entity.
 - 6. ASHRAE: American Society of Heating, Refrigerating, and Air Conditioning Engineers.
 - 7. Basis of Design (BOD) Document: The Basis of Design document is developed by the design team and shall respond to and be consistent with the performance criteria specified in the Owner's Project Requirements (OPR). The BOD illustrates the means by which the OPR criteria are to be achieved, documenting the assumptions and parameters used in the design, and documenting the primary thought processes or decisions made that resulted in the selected alternatives. At the end of the project, the final BOD content may be incorporated into the Systems Manual if desired in part or in its entirety. The BOD is a

- required component for LEED-certified projects and is recommended by ASHRAE for all projects subject to the Cx process.
8. Building Management System (BMS): The computer-based control or automation system. BMS is used throughout these Sections. Alternate references common in the industry include building automation system, facility management system, automatic temperature control system, direct digital control system, building management and control system, digital control system, Energy Management System, Energy Management and Control System or Supervisory Control and Data Acquisition (SCADA).
 9. Checklist Item: An item to inspect to verify proper installation of equipment or systems by the Contractor. Checklist items simply require a 'Yes/No' or 'OK/Not' response.
 10. CMMS: Computerized Maintenance Management System
 11. Commissioning (Cx): The process of ensuring that all building systems perform interactively according to the design intent, that the systems are efficient and cost effective, and that they meet the Owner's operational needs.
 12. Commissioning Provider (CxP): The Party retained by the Owner who will oversee and manage the Cx process, develop and stipulate many of the Cx requirements, and ensure and validate that systems and equipment are designed, installed and tested to meet the Owner's requirements.
 13. Commissioning Coordinator (CxC): This refers to the Individual within each of the various Parties that is designated the POC (point-of-contact) for that Party relative to Cx activities. Each of the Contractors subject to the Cx process should designate a CxC and make that person available to the CxP as the point-of-contact for that Contractor.
 14. Cx Portal: The Cx Portal is a web-based Internet hub used to electronically collaborate and coordinate activities throughout the Cx process. The Cx Portal is hosted by a commercially available application managed by CxP and is accessible by all Parties participating in the Cx program.
 15. Cx Record Matrix: The Cx Record Matrix provides an ongoing and updated status of the Cx program as it is being executed. It is a table of all systems and equipment subject to the Cx process and the status and responsible party of Cx procedures relating to that equipment. Typical fields tracked include equipment tag, location, description, Pre-Functional Documentation status, FPT status, training status, status of submittals and record drawings, and final Cx disposition.
 16. Commissioning Specifications: Generic reference to any of the Cx-specific specification Sections, as inferred by the usage. Divisions 01, 22, 23, 25, 26, and others contain Sections that are specific to or reference the Cx process. All Contractor requirements relating to Cx should be conveyed within the Cx Specs. Cx Specs should be referenced but not duplicated within the Cx Plan (the Cx Plan is designed to govern non-Contractor-related Cx issues).
 17. Commissioning Team: The group of Parties involved in the Cx process for any given system. The Cx Team will include a core group involved with all systems, consisting of the CxP and CxC members representing the GC and the Owner. On any given system, the Cx Team will additionally include the Cx Coordinators for the Contractors responsible for the system or equipment.
 18. Construction Documents: Refers generally to the Contract Documents that dictate the details of the installation (all but item 1. above).
 19. Construction Phase: Phase of the project during which the facility is constructed and/or when systems and equipment are installed and started. Contractor and subcontractors complete the installation, complete Pre-Functional Documentation, submit O&M information, establish trends, and perform any other applicable requirements to make systems operational. Contractor and Vendors may also conduct 'Equipment and Systems Training' events during this phase. The Construction Phase concludes upon completed Start-Up and TAB of systems and equipment.
 20. Contractor: As used herein, 'Contractor' is a general reference to the installing Party and can therefore refer to the GC, subcontractors, or vendors as inferred by its usage.

21. Contract Documents: The documents governing the responsibilities and relationships between Parties involved in the design and construction of this project including (but not necessarily limited to):
 - a. Agreements/Contracts
 - b. Construction Plans and Drawings
 - c. Specifications
 - d. Addendum
 - e. Change Orders
22. Construction Documents: Refers generally to the Contract Documents that dictate the details of the installation (all but item a. above).
23. Current Facilities Requirements (CFR): The CFR is a document required for LEED v4 Prerequisite (Fundamental Cx) that is intended to provide an update to the original design-phase OPR document to reflect current, as-built operational requirements. LEED v4 states that the CFR should provide system narratives and summarizes key facility operating requirements, schedules, sequences of operation, and preventive maintenance requirements. Typically developed in conjunction with the CFR document.
24. Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents, does not perform properly or is not complying with the design intent.
25. Design Engineer: Generic reference to the engineer-of-record or a specific engineering disciple as inferred by its usage.
26. Design Intent Document (DID): Outdated term that is synonymous with Owner's Project Requirements (see below). OPR is now used by both ASHRAE and LEED.
27. Electrical Contractor (EC): Contractor generally responsible for Division 26 work.
28. Endurance Period: Period after the successful completion of most system-related FPTs where critical spaces are challenged by both the Owner and the CxP to assess final functionality. The Endurance Period generally starts with the completion of all FPTs except for those ISFPTs that are approved to occur during the Endurance Period. It ends after the successful operation of the space and supporting systems for a contiguous 30-day period. The end of the Endurance Period coincides with Substantial Completion.
29. Factory-Authorized Representative: An individual fully-trained on the equipment and certified by the manufacturer to perform setup and start-up tasks.
30. Factory Acceptance Testing (FAT): Specified testing of equipment (off-site) at the manufacturer's facility. May be witnessed by the members of the project team.
31. FF&E: Furniture, Furnishing, and Equipment. This term is used to refer to the generally movable fit-out elements of a building that are not included in the construction contract but are dealt with in the Activation.
32. Final Cx Report: The 'Final Cx Report' is a required deliverable for all Cx projects. This document shall provide the final summary of the commissioning process including construction and operational issues identified and resolved, description of startup and testing procedures, and elements of the Cx Plan including the Scope of commissioning.
33. Fire Alarm Contractor (FAC): Contractor generally responsible for the fire alarm system installation specified in Division 28.
34. Fire Suppression Contractor (FSC): Contractor generally responsible for the installation of the fire suppression system (sprinkler, standpipe, and fire pump) as specified in Division 21.
35. Fixed Construction: Elements of the building that are built in. This term is typically used in contrast to FF&E.
36. Functional Completion: A Cx program milestone that marks the successful completion of the FPTs by the CxP and therefore completion of the Acceptance Phase. This also coincides with the project's definition of Substantial Completion. Functional Completion is a prerequisite for Substantial Completion.
37. Functional Performance Tests (FPT): Functional Performance Tests are also referred to as Operational Verification (OV) procedures. FPTs are the detailed and thorough tests

(and accompanying test procedures) developed and performed by the CxP to document proper operation of building systems and the components and equipment making up those systems during the Acceptance Phase. This includes all aspects of the Sequences of Operation. References made to FPT throughout the documents are inclusive of ISFPT unless specifically indicated otherwise.

38. General Contractor (GC): The Party acting as the primary coordinator of all the major subcontractors (MC, EC, PC, TAB, etc.) as applicable.
39. Installation Verification (IV): Installation Verification (IV) consists of checklists - also referred to as Pre-Functional Checklists (PFC) in commissioning standards documents – that are used to ensure that equipment is properly installed and ready for energization and Functional Performance Testing. These checklists are to be provided by the CxP and completed by the contractors. The CxP will review the checklists and will perform random verifications of the completed checklists. Any deficiencies will be noted and should be remedied before functional performance testing begins.
40. Interactive System Functional Performance Testing (ISFPT): See also Performance Verification (PV). The detailed and thorough testing of the interactions of various systems in the building. ISFPTs are considered a subset of the overall concept of FPT and therefore references made to FPT generally will include ISFPTs unless specifically indicated otherwise.
41. LEED (Leadership in Energy and Environmental Design): The LEED® Green Building Rating System is a voluntary, consensus-based rating system designed to encourage building owners to apply leading proven technologies for new construction or renovation. Areas of concentration include “Sustainable Sites”, “Water Efficiency”, Energy and Atmosphere”, “Materials and Resources”, and “Indoor Environmental Quality”. Contractor activities from demolition to procurement to commissioning to waste handling can be impacted by the LEED program.
42. Manufacturer’s Representative: Either an individual in direct employ of the manufacturer of the applicable system, or an individual who is certified by that manufacturer to perform the applicable work for which the reference is made. This is synonymous with Factory-Authorized Representative.
43. Mechanical Contractor (MC): Contractor generally responsible for Division 23 work.
44. OEM Manuals: Generic reference to original equipment manufacturer (OEM) published documentation, which may include manuals and guidance covering Installation, Start-Up Procedures, Operation, Preventive Maintenance, Troubleshooting, Control, Parts Lists, Wiring Schematics, and any/all information available from the manufacturer pertaining to the installed equipment or systems. OEM Manuals typically have no information specific to the facility but may be edited or marked up to indicate (or exclude) specific equipment or systems installed (or not installed) for a specific project or facility. Electronic versions of these documents related to systems to be commissioned are required per this Specification to be digitally edited to indicate specific equipment installed and to delete, strikeout, or mask-over equipment and content that is not installed on the project. OEM Manuals for all aspects of a project are typically specified in Div. 01 and in individual equipment specification Sections.
45. O&M Documentation: ‘O&M Documentation’ consists of Contractor-developed documentation designed to address the needs of facilities personnel and customized for the context of the specific facility and installation. The foundation of O&M Documentation is manufacturer’s literature (OEM Manuals), with additional Contractor-developed step-by-step instructions (where applicable) for Manual Start/Stop, Emergency Procedures, Operating Sequences, Preventative Maintenance, and other installation-specific information. O&M Documentation content is indexed/organized by equipment-type. When a ‘Systems Manual’ or ‘Current Facilities Requirements and O&M Plan’ is being developed by the CxP, this Contractor-developed content will need to be made available to the CxP for inclusion into the document.

46. O&M Plan (OMP): LEED v.4 EA Prerequisite document requirement that specifies major system operating parameters and limits, maintenance procedures and schedules, and documentation methods necessary to demonstrate proper operation and maintenance of an approved emissions control device or system. Typically developed in conjunction with the CFR document.
47. Observation Period (BMS): Period of time either prior to or immediately following Functional Performance Testing where the BMS is shown to operate properly without malfunction, without alarm caused by control action or device failure, and with smooth and stable control of systems and equipment in conformance with these specifications.
48. On-Going Commissioning Plan: LEED v4 document that provides information for the Owner to periodically re-commission the building's systems. Contents include blank FPTs and recommended procedures for periodic ongoing testing.
49. Operational Verification (OV): See 'Functional Performance Tests (FPT)' above. Operational Verification is synonymous with FPT.
50. Opposite Season: The season opposite of that when the majority of the FPTs occur.
51. Owner's Project Requirements (OPR): The OPR is a document intended to provide the basis from which all design, construction, acceptance, and operational decisions are made. It details the functional requirements of the project, including systems subject to commissioning. The OPR defines the benchmarks and metrics by which the success of the project is ultimately judged and evolves through each project Phase. The OPR is typically developed early in the project cycle by the Owner and/or the A/E and provides the user needs, requirements, goals, and metrics that are defined by the Owner to be important. The OPR criteria are referenced by and should be the foundation of the BOD narrative. The OPR/BOD is recommended for all projects subject to the Cx process and is a required component for all LEED-certified projects.
52. Party: Entity (company, corporation, etc.) legally responsible for portion of work.
53. Performance Verification (PV): Performance Verification is performed to verify the overall control of integrated systems (i.e., HVAC, BMS, PCS, Environmental Control and Monitoring systems, etc.). It is similar in scope to Integrated Systems Functional Performance Testing (ISFPT) and is the final step required to fully verify and ensure that a process system is performing to its specified requirements.
54. Pre-Functional Checklists (PFC): Pre-Functional Checklists - also referred to as the Installation Verification (IV) process – consists of checklists that are used to ensure that equipment is properly installed and ready for Functional Performance Testing. These checklists are to be provided by the CxP and completed by the contractors. The CxP will review the checklists and will perform random verifications of the completed checklists. Any deficiencies will be noted and should be remedied before the FPT (Operational Verification) process begins.
55. Preliminary Service: Refers to initial operation of a system or piece of equipment to provide temporary service where initial Pre-Functional Documentation has been recorded to ensure safe operation. Final TAB and Functional Performance Testing proceeds while the system is in Preliminary Service.
56. Pre-Test: Preliminary testing accomplished to verify system functionality prior to placing the system/equipment into Preliminary Service.
57. Process Control System (PCS): A microcontroller-based process control or production automation system. Specialized manufacturing and production systems controlled by PCS are tested and validated typically under the Qualification program and are typically separate from Commissioning.
58. Project Phases: Phases of the project include the Construction Phase, Acceptance Phase, Warranty Phase, and Occupancy. Earlier Phases include Program Phase and Design Phase.
59. Project Manager (PM): Individual or entity directly employed by the Owner and in charge of the design and construction coordination for the project.

60. Room Data Sheet: The Room Data Sheet is a spreadsheet or database which lists the control and occupancy requirements - including the temperature and humidity setpoints, pressurization, etc. - for each room or control zone in the facility. This list also may include the control range tolerances and the alarm ranges for the zone. Additionally, the Room Data Sheet may include occupancy schedules or lighting control parameters (typical for vivarium and some laboratory facilities) which must be programmed for initial occupancy. This should be updated through the construction process to reflect any changes generated during construction. Content of the Room Data Sheet may be coordinated with LEED v4 CFR documentation requirements.
61. Scheduled Outage: A period of time, scheduled by Owner, in which the system is out-of-service or not to be used by occupants.
62. SDS (Software Design Specification): Document provided by the BMS vendor that provides an interpretation for how the BMS programming is written to interpret the Sequence of Operations for various systems.
63. Site Acceptance Testing (SAT): Start-up testing of on-site installed equipment by qualified manufacturer's representatives. May be witnessed by the members of the project team.
64. Start-Up: Refers to the quality control procedures whereby the Contractor verifies the proper installation of a device or piece of equipment, executes the manufacturer's starting procedures, completes the 'Pre-Functional Checklist', energizes the device, verifies that it is in proper working order and ready for dynamic testing, and completes the 'Pre-Functional Tests'. Start-Up procedures are performed by the Contractor with or without a formal Cx process, although the documentation is more formalized when the Cx process is used.
65. Start-Up Documentation: Generic reference to all specified documentation required prior to Functional Performance Testing. This includes but is not limited to Pre-Functional Checklists, Pre-Functional Tests, Factory Acceptance Tests (FAT), Site Acceptance Tests (SAT).
66. Substantial Completion: Milestone as defined in the Owner-Contractor agreement and Specifications. This milestone will coincide with the end of the Endurance Period. This milestone also coincides with the start of the Warranty Period.
67. System Turn-Over (Turn-Over): Turn-Over is a quality control milestone in which all Contractors responsible for completing the installation and start-up of a system or equipment, along with the PM and GC, meet to validate that the system or equipment is completed and operational per the contract documents and ready for Functional Performance Testing, and that all the Pre-Functional Documentation and nameplate data is complete and accurate. The CxP will in many cases participate in this. GC shall organize and lead the process in all cases.
68. Systems Manual: The Systems Manual is the final deliverable from the Cx process, and provides the information needed to understand, operate, and maintain the facility and its systems. It is typically developed by the CxP or A/E, but with content required to be provided by the design team and the Contractors. The Systems Manual expands the scope of standard O&M documentation to incorporate additional information developed through the Cx process. The Systems Manual should be the repository of all updates and corrections as they occur (even throughout Occupancy). It is typically narrative in nature and organized by system types and by area/usage of the facility (if applicable). Systems Manual content typically includes narrative descriptions of the facility and systems, sequences of operation, schematic diagrams, cuts from design drawings and equipment literature, photos, and manual start/stop and emergency operating procedures for important equipment. The content of the Systems Manual is dictated by budget, and usually consists of a single narrative document with references to and inclusive of the entire set of O&M and Training materials.
69. Temporary Conditioning Plan: A plan that summarizes the logistics, procedures and protocols for taking permanent equipment and using it to maintain conditions throughout construction. The Temporary Conditioning Plan must be approved by all members of the Cx Team prior to placing equipment into temporary service.

70. Testing Agency: An independent agency typically retained by the Contractor to perform specialized testing of systems or equipment (most commonly electrical). The Testing Agency shall be qualified and equipped to perform the testing and shall submit appropriate qualifications.
71. Trending: Monitoring and recording a history of parameters typically using the BMS.
72. Turn-Over Packages (TOP): TOP's consist of a comprehensive listing of all the desired documentation due to the Owner at the conclusion of each major phase of construction and by each of the MEP equipment vendors and contractors. TOP requirements specific related to commissioning include but are not limited to O&M Documentation, Piping Flush/Fill Plans, Training Plans, and Temporary Conditioning Plan.
73. URS (User Requirement Specification): The URS describes the installation requirements, material of construction, functions, data, and interfaces required to enable a validated system to perform its intended operation within its operating environment and constraints, regulatory or otherwise. The URS must be developed in a way to ensure all specified requirements can be tested or verified in a qualification protocol.
74. Vendor: Refers to the organization that sold a system or equipment to the subcontractor. This may be a branch office of the manufacturer or a value-added reseller.
75. Warranty Phase: Includes the early occupancy of the building and can continue through the contractual Warranty Period and at least into the opposite season from when the facility systems were initially tested.
76. Zone Airflow Matrix: The Zone Airflow Matrix is a spreadsheet or database that tracks the building supply, return, and exhaust air flow rates on a zone-by-zone basis and sums these values by air handler or exhaust fan, floor, and building. The purpose of the Zone Airflow Matrix is to ensure that the building pressurization is maintained from minimum to maximum zone flow rates, and that the respective air systems have adequate capacity for the connected terminal loads. The Zone Airflow Matrix is updated throughout the construction process by the A/E to reflect all changes and turned over to the TAB prior to beginning initial balance of the systems.

1.6 REFERENCE STANDARDS

- A. ASHRAE Standard 202-2018 (Commissioning Process for Buildings and Systems)
- B. ASHRAE Guideline 0-2019 (The Commissioning Process)
- C. ASHRAE Guideline 1.1-2007 (HVAC&R Technical Requirements for the Commissioning Process)
- D. ASHRAE Guideline 1.3-2018 (Building Operations and Maintenance Training for the HVAC&R Commissioning Process)
- E. ASHRAE Guideline 1.4-2019 (Procedures for Preparing Facility Systems Manuals)
- F. ASHRAE Guideline 1.5-2017 (The Commissioning Process for Smoke Control Systems)
- G. ASHRAE Guideline 4-2019 (Preparation of Operation and Maintenance Documentation for Building Systems)
- H. ASHRAE Guideline 11-2018 (Field Testing of HVAC Controls Components)
- I. National Institute of Building Sciences (NIBS) – Guideline 3-2012 (Building Enclosure Commissioning Process BECx)

J. USGBC - LEED Reference Guide for Building Design + Construction (v4.x)

1.7 LEED COMMISSIONING REQUIREMENTS

- A. LEED v4 Fundamental Commissioning Requirements: LEED NC Version 4 requires Fundamental Commissioning and Verification.
1. CxP Requirement: The individual serving as the CxP is independent of design and construction management for the project building and has successfully completed the commissioning of at least 2 projects.
 2. Required Scope of Commissioning: LEED requires the following systems to be included at a minimum within the scope of commissioning. The specific Scope for Commissioning is as specified elsewhere in this Section.
 - a. HVAC&R systems (mechanical and passive) and associated controls.
 - b. Plumbing, including domestic hot water systems, pumps and controls.
 - c. Electrical, including service, distribution, lighting, and controls, including daylighting controls.
 3. Develop Owner's Project Requirements (OPR): The OPR is intended to provide the basis from which all design, construction, acceptance, and operational decisions are made. It details the functional requirements of the project, including systems subject to commissioning. The OPR defines the benchmarks and metrics by which the success of the project is ultimately judged and evolves through each project Phase. The OPR is typically developed early in the project cycle by the Owner, the CxP, and/or the A/E. It provides the user needs, requirements, goals, and metrics that are defined by the Owner to be important. The OPR criteria are referenced by and should be the foundation of the BOD narrative written by the A/E. At the end of the project, content of the final OPR may be incorporated into the Systems Manual. The OPR is a required component for LEED-certified projects and is recommended for all projects subject to the Cx process. OPR information includes but is not limited to:
 - a. Sustainability requirements.
 - b. Indoor environmental conditions, including temperatures and relative humidity for all occupancy conditions.
 - c. Outdoor environmental conditions at the facility location for each season, including design values, bin analysis, extremes and standard deviations, and any other weather information pertinent.
 - d. Occupancy, hours, functional use, and degree of activity for all hours of the year.
 - e. Building size, mass, orientation, and characteristics.
 - f. Envelope and shell information, including R-values for surfaces and percentage of fenestration.
 - g. Means for obtaining lighting quality and illumination levels defined for various spaces.
 - h. Design heat loading conditions such as maximum internal heat load, occupant density, U values, OA conditions, shading coefficients, etc.
 - i. Design power use densities for miscellaneous power (plug loads).
 - j. Summarize the details of sizing, capacity, efficiency, sound power levels, location, service etc. for systems and equipment.
 - k. Diversity used in sizing.
 - l. Ventilation criteria for all operating conditions, including required air change rates (OA and total).
 - m. Detailed sequences of operation with expected setpoints, scheduling, control parameters, etc.
 - n. Justification for selected approaches versus other alternatives by system and component.
 - o. Governing Codes and their salient requirements/restrictions.

- p. HVAC noise and vibration criteria.
 - q. Fire and Life Safety Criteria.
 - r. Security Criteria.
4. Develop Basis of Design (BOD): The Basis of Design document is developed by the design team and shall respond to and be consistent with the performance criteria specified in the Owner's Project Requirements. The BOD illustrates how the OPR criteria are to be achieved, documenting the assumptions and parameters used in the design, and documenting the primary thought processes or decisions made that resulted in the selected alternatives. At the end of the project, the final BOD content may be incorporated into the Systems Manual if desired in part or in its entirety. The BOD is a required component for LEED-certified projects and is recommended by ASHRAE for all projects subject to the Cx process. The final BOD (which includes OPR criteria) shall communicate the intent of the design including:
- a. Scope: The BOD scope must include all systems to be commissioned plus the building enclosure, even if full enclosure commissioning is not pursued. Architect and Structural Engineer must be included to document the enclosure thermal performance, load bearing capabilities, and construction.
 - b. Systems and Assemblies: A general overview of the systems and assemblies and how they are intended to meet the OPR.
 - c. Performance Criteria and Assumptions: The standards that the system was designed to meet and the expectations regarding system operation and maintenance, both linked to the OPR.
 - d. Descriptions: A description of the general building, envelope, HVAC, electrical, water, and other systems, and a statement of operation that describes how the facility is expected to operate under various situations and modes.
 - e. Governing Codes and Standards: Specific codes, standards, and guidelines considered during the design of the facility and the designer's response to these requirements.
 - f. Owner Directives: Assumptions regarding usage of the facility.
 - g. Design Development Guidelines: Concepts, calculations, decisions, and product selections; the specific design methods, techniques, and software used in design; information regarding ambient conditions (climatic, geologic, structural, existing construction) used during design; and specific manufacturer makes and models used as the basis of design for drawings and specifications.
 - h. Revision History: A summary of changes made throughout the project phases.
5. CxP Design Phase Responsibilities: The CxP is required to perform the following during the Design Phase of the project:
- a. Develop and Maintain Commissioning Plan: The CxP shall develop and implement a Cx Plan and confirm that commissioning requirements are incorporated into the Construction Documents. Cx Plan shall be updated as necessary throughout the construction and acceptance testing process.
 - b. Develop Commissioning Specifications: The CxP shall ensure that the requirements for commissioning are adequately provided within the Construction Documents. These requirements shall ensure that the contractor roles, responsibilities, and requirements are specified. Commissioning specifications shall include methods for developing and executing Pre-Functional Documentation and Functional Performance Tests.
 - c. Design Document Reviews: The CxP shall review the following documents:
 - 1) The CxP has conducted, at a minimum, one design review of the OPR, BOD, and the facility design documents prior to the mid-Construction Documents phase.
 - 2) The CxP must review the final Construction Documents for the commissioned systems and determine that they are consistent with the OPR and BOD narrative.

- 3) Record the CxP review comments in the Cx Issues Log.
 - 4) The CxP shall also back-check the review comments in the subsequent design submission.
- d. CxP Construction Phase Responsibilities: The CxP is required to perform the following during the Construction Phase of the project:
- 1) Conduct Cx Kickoff Meeting: The CxP shall conduct a Cx Kickoff Meeting as specified elsewhere in this Section.
 - 2) Develop and Execute Pre-Functional Inspections/Documentation: Develop or review Pre-Functional Documentation consisting of Installation Verification Checklists and Pre-Functional Checklists per the commissioning specifications. Pre-Functional Documentation may be developed and completed by the Contractors, the CxP, and/or the Owner as specified.
 - 3) Develop Functional Performance Tests: The CxP shall develop FPTs during the Construction Phase for review by the Design Team and Contractors.
- e. CxP Acceptance/Warranty Phase Responsibilities: The CxP is required to perform the following during the Acceptance and Warranty Phases of the project:
- 1) Maintain Issues Log: Maintain an Issues Log to track issues and deficiencies found during Pre-Functional and during Functional Performance Testing as specified in this Section.
 - 2) Execute and Document FPTs: The CxP and Contractor shall execute and document the Functional Performance Testing procedures as specified.
 - 3) Final Commissioning Report: Develop the Final Commissioning Report as specified in this Section.
6. Compile CFR and O&M Plan Document: Compile the Current Facilities Requirements and Operation & Maintenance Plan per the specifications in this Section.
- B. Option 1, Path 1 - Enhanced Systems Commissioning Credit: LEED NC Version 4 requires the following to achieve the Option 1 - Enhanced Systems Commissioning Credits.
1. Submittal Review: The CxP will review contractor submittals applicable to systems being commissioned for compliance with the OPR and BOD. These reviews will be concurrent with the reviews of the A/E and will be submitted to the Design Team and the Owner as specified.
 2. Training: The CxP and other project team members shall verify inclusion of operating personnel and building occupant training in the Construction Documents and shall verify that this training is delivered and effective per the specifications in this Section.
 3. Develop Systems Manual: The CxP and other project team members will develop a Systems Manual that gives future operating staff the information needed to understand and optimally operate the project's commissioned systems. Systems Manual development shall be as specified in this Section.
 4. Opposite Season FPT: The CxP shall verify seasonal testing (opposite-season testing) is executed and documented per the Cx Specifications.
 5. Ten-Month Operations Review: The CxP will be involved in reviewing the operation of the project building with operations and maintenance (O&M) staff and occupants within 10 months after substantial completion. A plan for resolving outstanding commissioning-related issues will be included.
 6. Ongoing Cx Plan: The CxP shall develop and issue an Ongoing Cx Plan at or around the time of the 10-month operations review. This plan shall provide the operating staff with procedures, blank test forms, and a schedule for on-going Cx activities to be performed by building staff or independent CxP.
- C. Option 1, Path 2 – Enhanced + MBCx Systems Commissioning Credit: LEED NC Version 4 requires the following to achieve the Enhanced and Monitoring Based Commissioning (MBCx), Option 1 Path 2.

1. All Option 1 – Path 1 Requirements: Option 1 Path 2 requires that all the Option 1 – Path 1 requirements above are specified and achieved. The following MBCx elements are also required.
2. MBCx Program Design: The A/E shall develop monitoring-based procedures to identify metering and BMS points required to assess performance of energy- and water-consuming systems. Design shall also include limits of acceptable values and deviations, performance evaluation metrics, means for identifying system sequence failures, and expected energy or water use profile targets.
3. Frequency of Analysis: The frequency of analysis for the first year shall be Quarterly.
4. CxP Requirements for MBCx: The CxP shall provide the following in support of the MBCx program:
 - a. Ensure requirements for MBCx installation and configuration are included in the design and construction documents, Cx Specifications, and Cx Plan.
 - b. Include details of the MBCx program are included in the Systems Manual.
 - c. Submittal reviews of meters, energy analysis programming and/or software, and drawings of controls for compliance with the owner's MBCx metering and monitoring requirements.
 - d. Development of Pre-Functional and Functional Performance Test documentation for MBCx-related equipment such as meters, system points, programming, and/or energy analysis software programs as provided by the Contractor.
 - e. Review of contractor-provided MBCx operator education regarding measurement techniques, energy analysis software tools, fault detection and fault resolution, all incorporated into training.
 - f. Verify and confirm proper execution of the MBCx program at the time of the 10-month building operator review meeting in Path 1 above.

D. CxP Involvement in Other LEED Credits: In addition to the above, the following LEED Credits may require participation of the CxP and be subject to commissioning as applicable:

1. WE Outdoor Water Use Reduction
2. WE Indoor Water Use Reduction
3. EA Credit Optimize Energy Performance
4. EA Prerequisite Building-Level Energy Metering
5. EA Prerequisite Fundamental Refrigerant Management
6. EA Credit Optimize Energy Performance
7. EA Credit Advanced Energy Metering
8. EQ Prerequisite Minimum Indoor Air Quality Performance
9. EQ Credit Enhanced Indoor Air Quality Strategies
10. EQ Credit Construction Indoor Air Quality Management Plan
11. EQ Credit Indoor Air Quality Assessment
12. EQ Credit Thermal Comfort
13. EQ Credit Interior Lighting
14. Thermal Comfort Design and Verification

1.8 CONTRACTOR RESPONSIBILITIES

A. Construction Phase: The following delineates the commissioning-related responsibilities of the General Contractor (and their Contractors, Subcontractors and Vendors) during the Construction Phase.

1. Include Cx requirements in price and plan for work.
2. Contractor Work – General: The following are general work guidelines outlines across multiple Divisions/Sections of the specifications that particularly pertain to the commissioning process:

- a. Provide skilled technicians qualified to do the work required. Provide factory trained/authorized technicians where required by the contract documents and stated in the applicable technical Section.
 - b. Coordinate the work of subcontractors, vendors, manufacturers, and Testing Agencies provided with the bid, and ensure that they are informed of and are adhering to the requirements of the Cx process specified throughout the contract documents.
 - c. Thoroughly complete and inspect installation of systems and equipment as detailed throughout Contract Documents, as required by reference or industry standards, and as specifically indicated elsewhere this Section.
 - d. Start-up, test, adjust, and balance systems and equipment prior to verification and Functional Performance Testing. Pre-Functional Documentation shall be in accordance with Contract Documents, shall be in accordance with system or equipment manufacturer IOMs, and shall reference industry standards and individual Cx specifications for the Division applicable.
 - e. Certify that systems have been installed and are operating per Contract Documents prior to Functional Performance Testing.
 - f. Tag equipment that is started with the Individual's name and date.
 - g. Demonstrate the operation of all systems as specified.
 - h. Maintain an updated set of Record Documentation as required by the Contract Documents.
 - i. Copy the CxP on indicated documentation.
3. Commissioning Coordinators (CxC): Designate a CxC from each major subcontractor with activities related to commissioning. These Commissioning Coordinators are to be the primary contacts for Cx activities.
 4. Cx Kickoff Meeting: Attend Construction Phase Cx Kick Off Meeting. The CxC and Project Manager from each major subcontractor shall attend.
 5. Cx Progress Meetings: The Commissioning Coordinators shall attend all Cx progress meetings unless otherwise agreed to by the CxP.
 6. Deficiencies: Remedy any deficiencies identified throughout construction.
 7. Scheduling for Cx: Schedule and coordinate Cx efforts into the construction schedule. Update the Cx Record Matrix as the project progresses. Incorporate Cx activities and milestones provided by the CxP into the construction schedule. Indicate at a minimum all tasks enumerated on the precedent diagram for all systems.
 8. Contractor-Developed Cx Documentation: Contractor shall develop and submit the deliverables defined in this Section and other Sections.
 9. FPT Development Assistance: Provide assistance to the CxP in preparation of the specific Functional Performance Test (FPT) procedures. Contractors, Subcontractors and vendors shall review FPT procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the tests. Damage caused to equipment performed in accordance with the approved procedures will be the responsibility of the Contractor.
 10. Drawing Verification/Final Markup: Contractor shall provide the CxP with the most recent conformed/marked-up equipment and control drawings for system review, walk-down and verification. Any additional markups or corrections discovered by the CxP during drawing verification shall be captured via drawing red-lines and tracked via a Cx Action Item (AI) to final resolution. As-built drawings shall be signed and dated by the verifying person(s), retained with the IV document, and submitted back to the Contractor for final revision to Record Drawing. Revised Record Drawing shall be verified by CxP to ensure that all as-built markups have been addressed prior to AI closeout.
 11. Complete and Submit Pre-Functional Documentation: Record start-up procedures on approved Pre-Functional Documentation and certify that the systems and equipment have been started and or tested in accordance with the requirements specified above.

12. Cx Workspace: Prepare spaces with adequate security for on-site contractors to store equipment. Provide secure space with 120 volt AC power for the CxP, TAB, and BMS Contractor to base their operations and store test equipment, drawings, files, and the like.
 13. Training Events: Conduct and document Training events as required by this Section, other related Division 01 Sections, and by applicable sections of the Specifications pertaining to each piece of equipment or system.
- B. Acceptance Phase: The following delineates the Cx-related responsibilities of the Contractor (and their subcontractors) during the Acceptance Phase.
1. FPT Execution: Execute Functional Performance Testing under CxP direction. Assistance will generally include the following:
 - a. Manipulate systems, equipment, BMS, and other control systems to facilitate testing.
 - b. Provide any specialized instrumentation necessary for Functional Performance Testing.
 2. Deficiencies: Correct any work not in accordance with Contract Documents.
 3. Training: Participate in Training Events relative to use of O&M information and the preventative maintenance program.
 4. Maintain Record Documentation: Maintain record documentation, and update and resubmit it when Acceptance Phase is completed.
 5. CxP Compensation: Compensate Owner for CxP costs incurred due to incompleteness of systems or equipment released by Contractor for Functional Performance Testing.
 6. Observation Period Monitoring: Monitor systems, equipment and areas throughout the Observation Period. Log and diagnose all alarms during this period. Maintain trends and logs of all critical parameters. Forward the logs and trends on a weekly basis throughout the Observation Period.
 7. Endurance Period Monitoring: Monitor systems, equipment, and areas throughout the Endurance Period. Log and diagnose all alarms during this period. Maintain trends and logs of all critical parameters. Forward the logs and trends on a weekly basis throughout the Endurance Period.
- C. Warranty Phase: The following delineates the Cx-related responsibilities of the Contractor (and their subcontractors) during the Warranty Phase.
1. Provide and document all warranty service that is performed.
 2. Conduct Final Systems Operation Training (BMS Contractor lead).
 3. Participate in meetings and discussions to resolve issues noted by facility services or issues generated from Opposite Season FPTs.
 4. Correct any deficiencies identified throughout the Warranty Phase.
 5. Update record documentation to reflect any changes made throughout the Warranty Phase and resubmit any modified Record Drawings and other documentation at the close of the Warranty Phase.

PART 2 - PRODUCTS

2.1 CONTRACTOR DELIVERABLES RELATED TO COMMISSIONING

- A. Contractor shall provide documentation to the CxP per the procedures specified herein and in other Sections of the specification.

- B. Construction Meeting Minutes: Contractor shall copy CxP with electronic copy of construction meeting minutes.
- C. Construction Schedule and Schedule Updates: Contractor shall provide the electronic copy of the project schedule initially, along with periodic updates.
- D. Submittals for Review:
 - 1. Shop Drawings and Product Data: CxP shall be provided shop drawings and submittal data for systems and equipment that will be part of the Cx process. Some of these submittals will be reviewed by the CxP and others are only needed for record. CxP will mark up the Submittal Register to indicate the documents required. Submittals shall be in PDF format and shall be capable of allowing electronic comments and markups.
 - 2. Submittal Review Process: GC shall provide the CxP one electronic copy of Shop Drawings and Product Data concurrent with distribution to the A/E. CxP shall review and incorporate comments via the A/E. A/E shall not delay their normal review and approval except for submittals so noted by the CxP in the submittal log review process. This request will typically be made only for major equipment and controls within the scope of commissioning. GC shall copy CxP with the final reviewed submittal with A/E approval stamp.
- E. Submittals for Record: GC shall provide the final electronic record copy of the submittal to the CxP.
 - 1. Contractor shall submit a final electronic version of the submittal for Owner's future asset management within 14 calendar days after receipt of approval from the Owner and the Architect on any submittal related to systems within the scope of commissioning.
 - 2. Final Electronic Record Submittals shall:
 - a. Be originally authored in electronic media and not scanned versions with hand mark-ups unless specifically approved otherwise.
 - b. Be provided in Portable Document Format (*.pdf) with selectable text and graphics that are readable. The documents may be merged into one bookmarked document up to 500 MB or they may be provided in approved electronic folder structure approved by the CxP. Merged documents shall use hierarchical bookmarks to form a table of contents and provide hyperlinks to the subject topic. For submittals larger than 500 MB, provide a summary document in PDF or HTML format with relative hyperlinks to the associated document files within the same directory or in directories subordinate to the summary document.
 - c. Include all final ratings, parameters, specifications, options, etc. In the case where the A/E returns the submittal "Approved As Noted, Resubmission Not Required" and includes mark-ups or comments that change the originally submitted ratings, parameters, specifications, options, etc., the Contractor shall correct the documents in the original electronic document prior to submitting the final electronic documents.
 - d. Highlight the specific rating, parameter, specification, option, etc. when the original document includes multiple alternatives. For instance, when a range of performance parameters are given or various sizes are shown, or various options are listed, the applicable item shall be indicated by highlight, circle, pointer, or other electronic marking. Partial-page material in the submittal that does not pertain to the project can have text marked with 'Strikethrough' or may be masked with a transparent gray screen over the text; entire pages that are not applicable may be electronically deleted.
 - e. Do not include generalized direction from the A/E that does not relate to ordering and purchasing the equipment. For instance, notes such as "Coordinate with mechanical engineer for final motor horsepower" are not to be transferred to the electronic submittal. In that example, only the final coordinated sizes shall be indicated.

3. Final Electronic Record Submittals shall be either posted to the construction project web-based portal or to a web-based file repository system as directed by the CxP and into a folder structure developed by the CxP. In the latter case, the folder structure will be by Specification Section number and a file naming protocol will be provided.
- F. Pre-Functional Documentation for Review: The Cx process requires that the normal quality control processes involved with preparing systems and equipment for operation are performed to a high standard of care and are thoroughly documented. These procedures shall be performed on all installed systems and equipment and no sampling strategy is used for the Start-Up process. The Cx process requires all Parties to collaborate to establish the optimal standard of care for starting systems and equipment. After the procedures are established, the Contractor performs them and documents them with the Pre-Functional Documentation that is developed by the joint effort of the Contractor and the CxP.
1. Draft Pre-Functional Documentation: Contractor shall develop draft Pre-Functional Documentation for all applicable equipment and systems along with the manufacturer's application, installation and recommended start-up procedures and submit these electronically in .pdf format for CxP review. These shall be assembled in a single submittal, per specification division of the work, and not as partial submittals.
 2. Minimum Start-Up Standard: CxP has provided the minimum standards for start-up execution in the commissioning specifications by Division. The CxP will provide generic Prefunctional Checklists to the Contractor upon request where contractor does not have a checklist in place as part of their in-house quality control process. Where CxP provides the generic checklists, the content must be reviewed by the Contractor and supplemented with project and manufacturer-specific requirements and the Contractor's own internal quality assurance procedures and checks.
 3. Pre-Functional Documentation Approval: CxP will review the contractor's draft Pre-Functional Documentation and recommend approval.
 4. Content of Pre-Functional Documentation: Pre-Functional Documentation shall generally include the following for each item of equipment or system (as applicable) undergoing Start-Up:
 - a. Project-specific designation, location and service.
 - b. Indication of the Party and Individual performing and documenting the Start-Up.
 - c. Clear explanation of the inspection, test, measurement, and outcome with a Pass/Fail indication and a record of measured parameters (as applicable).
 - d. Include a Pre-Functional Checklist item indicating that all O&M documentation, nameplate data, warranties, and record documents have been completed and submitted.
 - e. Include a Pre-Functional Checklist item indicating that proper maintenance clearances have been maintained.
 - f. Include a Pre-Functional Checklist item indicating that special tools and/or spare tools required for normal operation and maintenance were turned over to the Owner;
 - g. Include Pre-Functional Checklist item indicating that all required dependent or prerequisite equipment and systems were previously started successfully.
 5. Completed Pre-Functional Documentation: Manufacturer's start-up protocols shall be executed, and forms shall be completed by a qualified/authorized technician. These shall be developed and submitted electronically or at the discretion of the CxP they may be scanned and submitted electronically.
 6. GC and CxP Review: GC shall review contractor's Pre-Functional Documentation for completeness prior to the CxP review and shall confirm the review in writing as a prerequisite for scheduling Functional Performance Testing. The CxP shall then review the completed and submitted Pre-Functional Documentation and request any incomplete data or additional information required to meet the Cx program criteria. CxP will also review and spot-check procedures during Functional Performance Testing.

7. Systems Subject to Pre-Functional Documentation and Turn-Over: All (100% of) systems shall undergo a documented Start-Up per the approved procedures and NO sampling strategy is used.
 8. Completed Pre-Functional Documentation Submission: Completed Pre-Functional Documentation for all pieces of equipment shall be submitted to CxP prior to Turn-Over or any associated Functional Performance Testing. Any outstanding item shall be clearly indicated, and an associated Action Item may be entered by the CxP to track resolution. No functional testing will be scheduled or performed without submitted and approved startup documentation.
- G. Draft TAB Plan: TAB shall submit sample balancing forms for approval prior to starting work.
- H. TAB Reports: TAB shall submit preliminary draft or final reports as a prerequisite for Turnover for Functional Performance Testing. Final TAB reports submitted for approval with unresolved issues noted will be rejected until issues are resolved.
- I. Factory Test Reports: Contractor shall provide any factory testing documentation or certified test reports required by the specifications. These shall be provided prior to Acceptance Phase.
- J. Temporary Operating and Conditioning Plan: Contractor shall provide an initial Temporary Operating and Conditioning Plan for approval and then issue periodic updates to reflect actual conditions. This plan shall be separate from the LEED Construction Indoor Air Quality Management Plan and shall meet the specified requirements. It may be integrated with the Construction Indoor Air Quality Management Plan when required for LEED projects. At the completion of the temporary conditioning period, the final plan shall be submitted with completed maintenance records, inspection and check logs, operating logs, and narrative of any problems or issues that occurred during Temporary Conditioning (if applicable). Detailed requirements for this plan are specified in the Div. 23 mechanical commissioning section of the specifications.
- K. Piping Cleaning, Flush, and Fill Plan: Contractor shall provide Piping Cleaning, Flush, and Fill Plan for approval at least 30 days prior to final cleaning, flush, and fill. Detailed requirements for this plan are specified in the Div. 23 mechanical commissioning section of the specifications.
- L. Phased System Implementation Plan: If Contractor intends to start, run, or occupy portions of systems in phases, Contractor shall submit a Phasing Plan for phasing in areas/portions of systems that will be connected subsequent to the initial portions. Phasing Plan shall specifically address:
1. Pipe and Duct Cleaning: Indicate the configurations and protocols for isolating subsequent regions and then protecting the preceding regions when the subsequent region is cleaned/flushed and connected.
 2. Pipe Disinfection: Indicate the plan for disinfecting each region of potable water or medical gas pipe that requires disinfection. Indicate how the preceding regions of the system will be protected when connecting subsequent regions.
 3. Piping Certification/Testing: Indicate the plan for certifying each region of pipe that requires certification and or testing such as laboratory gases, medical gases, and RO/DI water (testing for water quality). Indicate how the preceding regions of the system will be protected when connecting subsequent regions. Indicate how you will verify that the certification/test results on the previous systems have not been invalidated.
 4. System Modifications: Indicate the protocols for making subsequent changes to the systems of pipe and duct when the systems have already been cleaned, flushed, pressure tested, disinfected, and certified.

- M. Field or Independent Testing Agency Reports: Provide all documentation of work of Independent Testing Agencies required by the specification. These shall be provided prior to Acceptance Phase.
- N. Training Plan
1. Development and Submittal: The Training Plan shall outline the various Equipment and Systems Training events and Final Systems Operation Training event as proposed by the Contractors and shall be approved by the CxP. GC shall compile the individual training agendas of the subcontractors and vendors and submit a comprehensive Training Plan to the CxP, Architect and the Owner for review. Training Plan shall summarize all Equipment and Systems Training events with topics to be covered and approximate training duration.
 2. Content: The Training Plan shall include at a minimum:
 - a. Topic and applicable specification section.
 - b. Scheduled date(s) for the Events(s).
 - c. Location and setting (classroom or field).
 - d. Lead instructor and qualifications.
 - e. Co-instructors and their qualifications.
 - f. Training objective.
 - g. Event outline/agenda.
 - h. Detailed breakout of content to be presented.
 - i. Anticipated duration.
 - j. Required attendees for each session.
 3. Review: The responsible subcontractor shall submit the Training Plan for their work to the GC, who will then assemble it along with the plans of other subcontractors into a single coordinated plan and disseminate it for review to the Cx Team. Contractor shall incorporate comments and requirements resulting from the review and resubmit the Training Plan prior to conducting any training sessions.
- O. Asset Identification/Nameplate Data: Contractor shall provide as-installed specific product nameplate data, product numbers, serial numbers, and other information required to fully define the asset for Owner's use in maintenance management and asset tracking.
1. Completed nameplate data shall be provided by the Contractor in the agreed upon electronic format prior to the start of the Acceptance Phase for all equipment within the scope defined in part 1 of this section. This will be via direct entry on the project web portal or by uploading completed electronic template files to the Project Files section of the portal.
 2. Minimum nameplate data content shall include the following as applicable:
 - a. Construction document designation.
 - b. Owner's designation if different than the construction document designation and if provided by the Owner.
 - c. Contact information identification which shall reference the project's Contact List for installing contractor, vendor or representative, and manufacturer. Contractor shall also provide identification for suppliers of parts if different from the previous parties.
 - d. Model Number.
 - e. Serial Number.
 - f. Date of Manufacture.
 - g. All performance and sizing data required to operate, diagnose, or replace the system, equipment, component or systems with as a minimum that indicated in the construction documents.
 - h. General description or type classification of the system, equipment, component, or device
- P. Equipment Warranties: Provide as part of the O&M Documentation. The initial submittal for review shall be required prior to the start of the Acceptance Phase.

- Q. Record Training Documentation: The compiled and final record training documentation will be provided by the GC within 14 days of the last training session provided under the construction contract (this will typically be the site-specific controls training). This will take the form of the Training Plan supplemented with evaluations and actual dates and topics. This shall also contain the training video media files when required by the specifications.
- R. As-Built Drawings: Contractor shall maintain an updated set of record or 'As-Built' documents at the jobsite reflecting actual installed conditions and all approved changes and modifications to the contract documents. Contractor shall maintain a current electronic copy of the contract documents including all approved changes, directives and modifications. Contractor shall provide access to the CxP to review the As-Built and Record Drawings. Final As-built and Record Drawings shall be delivered to the specified file repository electronically and in accordance with Division 01 Closeout Requirements Section.
- S. Final Cx-Related O&M Documentation from Contractors:
1. Contractor Requirements - Overview: Contractors, subcontractors and associated vendors and their representatives shall prepare, organize, author, and submit the technical content for 'O&M Documentation' per this Paragraph. The base documentation for this is the required Product Data and manufacturer-developed O&M Manual submittals. Additional contractor-authored content is also required as specified below to complete these documents. Contractors are responsible for providing LEED-compliant standalone submissions for 'Current Facility Requirements' and 'Operation & Maintenance Plan' in accordance with these requirements.
 2. O&M Documentation Format: Content authored, developed and compiled by the Contractor shall be available both electronically and hardcopy. Specific electronic format shall be coordinated with the CxP. Acceptable electronic formats shall allow for editing and commenting, and include Microsoft Word, Excel, PowerPoint, and Visio; Portable Document Format (PDF), and graphics/photo formats such as JPG, PNG, or the like.
 3. Contractor O&M Documentation Submittal Process: Responsible contractors shall compile and organize the content for all work of their Division and provide one organized submittal. Each submission should be provided as soon as possible after the approval of the contractor's technical submittals, and before the start of installation. Exceptions will be considered on a case-by-case basis for customized long lead equipment such as emergency generators. The initial submittal shall be a prerequisite for Turnover of any systems for Functional Performance Testing. This submittal will be reviewed by A/E, CxP, Owner, and GC within two weeks of the submission. Contractor shall incorporate comments and corrections and resubmit prior to the start of the Acceptance Period. Provide the final version of all O&M Documentation information in one submittal at least two weeks prior to Final Completion.
 4. Maintenance and Updates of O&M Documentation Content: Contractors shall maintain the applicable O&M Documentation content throughout the Warranty Period. Electronic content shall be made available online via a managed web-based project portal. Any required hardcopies will be retained at the Owner's facilities. Changes throughout the Warranty Period shall be fully coordinated with the CxP. Maintenance of O&M Documentation content shall include:
 - a. Changing any indicated settings, parameters, and other operational parameters that were changed by the Contractor during the Warranty Phase.
 - b. Changing any instructions as to procedures that needed to be changed during the Warranty Phase.
 - c. Changing the Record Schedules and/or Sequences of Operation if they were changed during the Warranty Phase.
 - d. Updating any O&M Documentation content if changed or updated by the manufacturer.

5. Paper-Based (Hard) Copies: The number of copies shall be per the Project Closeout Requirements of the Specifications.
6. O&M Documentation Content: Each subcontractor's O&M Documentation shall be submitted as a single package. With prior approval, draft content for a system and all associated equipment may be organized and made in one submission, based on the progress and needs of the project. Content shall be provided as specified below and indexed separately as follows:
 - a. 'Operations Manual'
 - b. 'Maintenance Manual'
 - c. 'Current Facility Requirements'
 - d. 'O&M Plan'
7. OPERATIONS MANUAL: This Part shall be organized by Division then Section then subcontractor then system/subsystem.
 - a. Contact Information: Provide contact cross-references to the Parties applicable to the system being described and contained in the main Contact Directory in Part 1.
 - b. System Narrative/Description: This is intended to be a concise but complete description of each system. Content may be available from the A/E in the form of design documents, project manuals, etc.
 - c. Start-Up and Shutdown Procedures: Provide step-by-step instructions to bring systems from static to operational configurations and from operating to shutdown status. Installing Contractor or Vendor/Manufacturer shall author this specifically for this project. This section may utilize links to other sections.
 - d. Normal Operating Instructions: Provide a discussion of the normal operation and control of the system. Address operating norms (for example, temperatures, pressures and flow rates) expected at each zone or phase of the system. Supplement the discussion with control and wiring diagrams and data. Installing Contractor or Vendor/Manufacturer shall author this specifically for this project.
 - e. Emergency Operating Instructions: Provide emergency operating procedures in the event of equipment malfunctions. Provide shutdown instructions for fires, explosions, spills, or other contingencies. Installing Contractor or Vendor/Manufacturer shall author this specifically for this project. This content shall be organized per system and support the Emergency Operations manual to be created by the Owner.
 - f. Environmental Considerations: In cooperation with the Owner's environmental staff (if applicable), provide a listing of the equipment that requires special operation, reporting, testing, analysis or inspection to comply with federal, state or local environmental laws. Examples of possible list items include backflow preventer inspections, underground storage tank testing, hazardous material or waste usage/storage documentation and air pollution control devices. For each item, include requirements for environmental operation, reporting, testing, analysis and inspection as well as references to respective implementing regulations, statutes or policies. Coordinate with Owner environmental staff to provide information related to the equipment and systems required permitting and initial approval.
 - g. Equipment and System Training Documentation: Include documentation of training for applicable system. Include training agenda, all handouts and presentation materials/content.
 - h. Sequence of Operation/Control Schematic: Provide the written sequence of operation for the applicable system and the control schematic diagram. This information may be obtained from the A/E or BMS contractor.
 - i. Maintenance Service Agreements: Provide copies of maintenance service agreements where they pertain to systems involving multiple components and devices.
 - j. TAB Reports: Insert the TAB Reports provided under Division 23 for the subject system.

8. **MAINTENANCE MANUAL:** Organize this section first by Division then Section then subcontractor then by equipment number or ID.
 - a. **Maintenance Index:** Provide a summary table that indexes the equipment requiring maintenance, indicates the frequency each piece of equipment needs attention, and includes a reference to the number of the Procedure associated with that frequency. GC shall provide Contractors with an Excel spreadsheet that will be completed by each applicable subcontractor and returned to the GC for incorporation in the Operation and Maintenance Manual.
 - b. **Maintenance Information:** Maintenance Information for each indexed entry shall contain the following (as applicable):
 - 1) **Equipment Data Sheet:** Provide a summary of key nameplate and performance data.
 - 2) **Procedures:** Preventative Maintenance Procedures with recommended test and inspection frequencies, and the like.
 - 3) **Field Test Reports:** Provide Field Test Reports (such as alignment or vibration tests) that apply to equipment associated with the system.
 - 4) **Troubleshooting Instructions:** Provide detailed troubleshooting instructions indexed by common/expected symptoms. Alternatively, make specific reference to page in the manufacturer's O&M Manual where this information is provided.
 - 5) **Extended Warranty Information:** Include all warranties for products, equipment, components, and sub-components whose duration exceeds one year. Include warranties on components with the system they are contained within. Reference all specific operation and maintenance procedures that must be performed to keep the warranty valid.
 - 6) **Special Tools:** Provide a listing of any special tools required for servicing, diagnosis, or repair. Alternatively, reference specific page in the manufacturer's O&M Manual where this information is provided.
 - 7) **Supply Inventory Requirements:** Provide a list of maintenance and repair supplies (e.g., spare parts, lubricants, consumables) required to ensure continued operation without unreasonable delays. Identify and list parts and supplies that have long purchase lead times. Alternatively, reference specific page in manufacturer's O&M Manual that contains this information.
 - 8) **Sources of Spare Parts:** Provide list or reference to recommended spare parts and contact information where spare parts can be obtained.
 - 9) **Lubrication Schedule:** Provide a lubrication schedule indicating types, grades, and capacities of lubricants for specific temperature ranges and applications. Alternatively reference the specific page in the manual that contains this information
 - 10) **Maintenance Service Agreements:** Provide copies of maintenance service agreements where they pertain specifically to indexed equipment.
 - 11) **Manufacturer's O&M Manual:** Include manufacturer's printed O&M information. These shall be provided in PDF format. And annotated or edited per this Section.
 - 12) **Application and Installation Instructions:** Where applicable and separate from the O&M information, provide the Application and Installation Instructions that indicate how to correctly apply and install/setup the equipment.
9. **LEED CURRENT FACILITY REQUIREMENTS (CFR):** This document is a LEED v4 requirement and shall include the following information and may reference other documents (via document links) although the final shall be submitted as a single package. Note that this content spans the work of several subcontractors and requires management and assembly by the GC or their designated party CxP.
 - a. Building occupancy schedule.
 - b. System/Equipment run-time schedules.

- c. Sequences of Operation and Controls Schematics for the building HVAC systems.
 - d. Control Setpoints and alarm setting information for HVAC systems.
 - e. Minimum outside air ventilation requirements.
 - f. Lighting level settings.
 - g. Seasonal or calendar setpoint changes for time-of-day, day-of-week, occupied / unoccupied and the like.
10. LEED O&M PLAN (OMP): This document is a LEED v4 requirement and shall include the following information and may reference other documents (via document links) although the final shall be submitted as a single package. Note that this content spans the work of several subcontractors and requires management and assembly by the GC or their designated party CxP.
- a. Systems narrative describing the mechanical and electrical systems and equipment.
 - b. Preventive maintenance plan for building equipment described in the systems narrative.
 - c. A commissioning program that includes periodic commissioning requirements, ongoing commissioning tasks, and continuous tasks for critical facilities.
11. LEED ONGOING CX PLAN: This document is a LEED v4 Enhanced Commissioning Credit requirement. The CxP shall develop and issue an 'Ongoing Cx Plan' at or around the time of the 10-month operations review. This plan shall provide the operating staff with procedures, blank test forms, and a schedule for on-going Cx activities to be performed by building staff or independent CxP.

2.2 FINAL CX REPORT - PREPARATION AND CONTENT

- A. This document shall be developed by the CxP and is a requirement for all commissioning projects and is also a required deliverable for LEED v4 Fundamental (formerly 'Prerequisite') commissioning. The Final Cx Report shall include the following information. Note that some of this information is also a requirement of the Cx Plan and specifications.
- 1. Executive Summary
 - 2. Project Overview: Includes summary of the Cx scope of work, brief facility overview, project timeline, comprehensive list of system subject to commissioning and sample testing rates if applicable, Cx Team members and roles, and an overview of the Cx Provider's means and methods for managing, developing, executing, and documenting testing results and issues.
 - 3. OPR Deviations: Identification of systems not in accordance with the OPR, including discussion of Owner's reasons for acceptance and any cost, energy, environmental, or O&M impacts.
 - 4. Final Systems Evaluation: Narrative evaluations of the 'as-commissioned' operating condition of each major system following FPT completion. This shall include a short description of the system, final status of operation, and any major issues encountered and resolved during the Cx process.
 - 5. Startup and FPT Results: Provide final completed Prefunctional Checklist and FPT documentation indicating results and signed data forms or records. Deferred tests that were unable to be executed (due to occupancy, lack of load, weather conditions, etc.) should be provided in the event they can be executed in the future.
 - 6. Issues and Resolutions Log: Provide final complete results from the issues and resolutions log including descriptions of issues, ensuing discussion, and final resolution.
 - 7. Additional Requirements: The following additional requirements shall be documented by the CxP in the Final Cx Report:
 - a. Submittal Review: Discussion of the review process for Contractor submittals.
 - b. Training Verification: Discussion of the training process including Training Matrix and verification of operator/occupant training evaluation and effectiveness per this Section.

- c. 10-Month Operations Review: Provide overview and results from the post-occupancy 10-month operations review.
- d. MBCx Narrative: Provide overview and results from the Monitoring-Based commissioning process referencing contract and deliverables [per LEED requirements].

2.3 SYSTEMS MANUAL PREPARATION AND LOGISTICS

- A. Definition: The Systems Manual provides the Owner with the information needed to understand, operate, and maintain the facility and its systems. It is typically assembled by the CxP with content described hereinto be required to be provided by the design build team and their subcontractors. The Systems Manual expands the scope of the required O&M Documentation to incorporate additional information developed through the Cx process. The Systems Manual should be the repository of all updates and corrections as they occur (even throughout Occupancy). It is narrative in nature and organized by system types and by area/usage of the facility (if applicable). Systems Manual content typically includes narrative descriptions of the facility and systems, sequences of operation, schematic diagrams, cuts from design drawings and equipment literature, photos, and manual start/stop and emergency operating procedures for important equipment.
- B. Systems Manual Lead Developer Responsibilities: The lead developer of the Systems Manual for this project shall be the CxP. The lead developer is responsible for organizing and producing the Systems Manual and for managing the content and contributions from the Parties responsible for providing technical content. The Party responsible for each topic shall assemble, author, develop, coordinate, or otherwise produce the content for that topic as specified below and provide to the lead developer. Requirements as specified include requiring the applicable Contractors to author project-specific information in a consistent format in addition to submission of standard pre-printed manufacturer's O&M and product information.
- C. Systems Manual Contractor Responsibilities: Contractor, Subcontractors and Vendors/Factory Representatives shall prepare, organize, and submit applicable content for the comprehensive and coordinated Systems Manual as specified in 'O&M Documentation' above. Contractor content is indicated by GC who is responsible for consolidating the content and materials from the various individual subcontractors.

2.4 SYSTEMS MANUAL CONTENT AND ORGANIZATION

- A. Systems Manual Scope: The Systems Manual format and content requirements shall be as follows. Documents developed or otherwise provided as specified in the Contract Documents should be used directly or referenced to the extent possible, including but not limited to OPR/BOD narratives, shop drawings, submittals, and O&M Manuals. Responsible parties are as indicated in square brackets; tasks not delineated by a responsible party are the responsibility of the lead developer.
- B. Part 1 – Executive Summary
 - 1. Directory of Entire Manual: Provide a directory indexing the entire set of documents that comprise the Systems Manual.
 - 2. Systems Manual Overview: Provide a discussion of the Systems Manual intent and scope, along with description of other documents (IOM Manuals, Training, etc.) referenced within.
 - 3. Contact Directory: Include the contact information for all contractors, vendors, manufacturers, and any other entity that has provided goods or services installed at the

facility. Contact information should include name, website, address, phone numbers, and technical support phone numbers and email addresses.

C. Part 2 – General Facility Information

1. General Facility and System Description: A/E describe the function of the facility. Detail the overall dimensions of the facility, number of floors, expected number of occupants, and facility category code. List and briefly describe all the facility systems listed in Part 7 - Primary Systems Operating Information and any special building features. [Include photographs, marked-up and labeled to show key operating components and the overall facility appearance.]
2. Floor Plans: A/E provide uncluttered, legible 11 x 17 inch floor plans (PDF or print). Exact copies of the design plans or As-Built drawings are usually not acceptable because of extraneous information. Where possible, include only room numbers, type or function of spaces, and overall facility dimensions on the floor plans.
3. Facility Systems Flow/Riser Diagrams A/E: Provide low/riser diagrams for indicating overall facility air, hydronic, steam, gas, and electrical system flow and distribution to all applicable building systems.
4. System Duct and Piping Floor Plans: A/E provide uncluttered, legible 11 x 17 inch floor plans (PDF or print) showing system locations(s) with ductwork (ventilation), piping, main electrical supplies each color-coding or highlighting by system type to illustrate the general design approach for the facility. Main/larger duct, pipe, electrical wiring should be highlighted to illustrate general routing approach (for example, details beyond VAV box or floor subpanel level are not required).
5. Warranty Information: GC provides all warranties indexed in a logical order.

D. Part 3 – Commissioning Summary

1. Overview: Provide brief overview of the commissioning process. The 'Final Commissioning Report' can be referenced for further detail.
2. Systems Subject to Commissioning: Provide an itemized list of the commissioned systems.
3. References: Provide an itemized list of references governing commissioning, along with references to the 'Final Commissioning Report' and other commissioning documents and their locations that are not included as Appendices to the Systems Manual.

E. Part 4 – Basis of Design

1. Codes and Standards: List of codes and standards applicable to MEP systems and energy/sustainability requirements.
2. Occupancy and Operating Hours
3. Indoor Environmental Quality Requirements: Provide table of heating, cooling, relative humidity, pressure, etc. requirements by general space types as applicable.
4. Other: Provide any additional requirements from BOD that may be required to understand the facility.

F. Part 5 – Basic Operations and Maintenance

1. Expectations: Discuss general requirements for staff background and knowledge needed to operate the facility, including but not limited to level of MEP experience needed, systems requiring specific training or background, capabilities required for BMS manipulation, understanding of maintenance procedures, etc.
2. General Operating Procedures: Provide narrative discussions for basic operation and control of the various HVAC and Lighting systems, and strategies used at the systems-level to achieve energy efficiency and optimal performance. Provide separate narratives for critical spaces and applications, if applicable.

G. Part 6 – Basic Troubleshooting

1. BMS Operator Interfaces: Discuss the attributes of the building's control systems and user graphics, point value screens, etc. Discuss also any other interfaces required for direct system control and operation, including but not limited to system/equipment local displays, handheld displays, web applications, or other system-specific devices.
 2. BMS Alarms/Warnings: Provide an overview of the alarms and warnings that are programmed into the BAS, including general levels and priorities, means for responding, etc.
 3. Trend Data/Reports: Discuss in general the availability and use of trend data for diagnosing issues. Provide information on trend access and storage, types of points that are being trended, and any pre-defined reporting or trend point collections that are available or developed within the BMS.
 4. Maintenance Overview (Best Practices): Provide an overview list of generic maintenance 'best practices' and checkout procedures that should be used when accessing systems or equipment for either troubleshooting or scheduled/preventive maintenance. This includes any internally-required means for logging the maintenance or corrective tasks carried out (setpoint adjustments, sequence modifications, parts replaced, etc.) Refer to Part 7 below for specific IOM references.
- H. Part 7 - Primary Systems Operation & Troubleshooting Information
1. System Description A/E: Provide a detailed description of the system components and basic operation and control. Provide manufacturer, model numbers, capacities, etc. for major system components. Include technical details that are essential for an understanding of the system and its basic control strategy. A/E shall provide narratives to the GC who shall provide these to the major subcontractors for use in preparation of their required content.
 2. System Schematic Components/Control Diagrams A/E, GC: Provide a graphical representation of the System indicating all components and control devices. A preferred level-of-detail would be to include the 'As-Built' BMS schematic for the System (if applicable) or the manufacturer or A/E schematic document.
 3. Sequences of Operation ('As-Cx') [A/E] [GC] [CxP]: The A/E shall provide an editable version of all Sequences of Operation to the BMS Contractor and the CxP for comment and edit. The CxP shall maintain and edit the Sequences with any changes or modifications made throughout the Cx process. The final 'As Commissioned' Sequences shall be provided in the Systems Manual.
 4. BMS System Graphics [GC]: Provide screenshot(s) of key BMS graphics screens showing system layout and locations for key operating parameters.
 5. Operation and Troubleshooting Procedures [GC]: The intent of this section is to provide the Operator with specific make and model of installed equipment, and a summary of documents and references to pertinent O&M information within those documents relating to system and component operation. Installation details are not to be highlighted. The main source of this information is the manufacturer's OEM manuals (PDF), although references to Submittals may be helpful, particularly relating to pump and fan curves and energy performance data (part load operation, etc.)
 - a. For each System or Component, the following is an example of the information required in this section for the Chillers (as part of an overall CHW System):
 - 1) Packaged Air-Cooled Chiller: <Make, Model, Year>
 - a) Product Data/Submittal <File Name>
 - b) Product Data
 - c) Part-Load Operation Curves
 - d) Flow and Temperature Ranges/Limitations
 - 2) Chiller OEM Manual <Doc. Number, Thumbnail, or Hyperlink>
 - a) Chiller Overview – <pages>

- b) Basic Operating Modes – <pages>
 - c) Startup & Operating Limitations – <pages>
 - d) Chiller Service – <pages>; includes scroll compressors, expansion valve, evaporator coil, condenser coil, safety devices.
 - e) Chiller Alarms & Troubleshooting – <pages>
 - 3) Chiller Controller Manual <Doc. Number, Thumbnail, or Hyperlink>
 - a) Controller Overview and Options – <pages>
 - b) Control Screens and Options – <pages>
 - c) BMS Integration Points Lists– <pages>
- 6. Recommended Maintenance Information and Schedules [GC]: Provide per 'O&M Documentation' requirements in this specification. This section shall provide a summary and/or references to the following (as applicable):
 - a. <System Component>
 - 1) Manufacturer's recommended scheduled maintenance requirements <location/pages>
 - 2) Servicing Procedures
 - 3) Spare Parts Lists (recommended)
- 7. Training Materials [GC]: This section shall provide a summary and/or references to the training materials for the System. This includes any custom training videos or documentation produced specifically for this system (separate from O&M documents already referenced above). References to searching for web-based instruction for the specific system or similar systems should be included to guide the Operator to these potential resources.
- 8. Sensor Calibration Schedule [GC]: Provide a reference for recommended calibration schedules for BMS sensors with an emphasis on sensors used as control inputs.
- 9. Environmental Considerations [GC]: (As applicable). Provide any important environmental consideration per 'O&M Documentation' requirements above for systems with operating fluids or components with potential for hazardous waste or life safety implications.
- 10. SOPs; Normal Operating Instructions [GC]: Provide per 'O&M Documentation' requirements above.

2.5 INSTRUMENTATION

- A. General: All testing equipment used in the Cx process shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified. All equipment shall be calibrated according to the manufacturer's recommended intervals. Calibration tags shall be affixed or certificates readily available.
- B. Standard Testing Instrumentation: Standard testing instrumentation normally used for performance assessment and diagnosis will be provided by the CxP. Refer to Division 23 and Division 26 for a list of applicable test equipment.
- C. Special Tools: Special equipment, tools and instruments (only available from a vendor, and specific to a piece of equipment) that are required for testing equipment in accordance with these Contract Documents shall be included in the base bid price to the Contractor and turned over to the Owner upon completion of the project.

PART 3 - EXECUTION

3.1 ROLE OF THE COMMISSIONING PROVIDER

- A. The Commissioning Provider (CxP) is fundamentally a technical staff extension working on behalf of the Owner whose role is to advise the Owner and members of the design and construction team in matters related to the items within the scope of commissioning with the goal of ensuring that the completed installation is installed in accordance with the Owner's needs, the design intent and the contract documents.
- B. The CxP has no authority to direct construction. Communication from the CxP is to be considered the observations and opinions of the commissioning provider and does not constitute a directive to make any change to the work or the design, without a formal directive through normal contract channels by parties authorized to direct the construction.

3.2 COMMISSIONING SEQUENCING AND SCHEDULING

- A. CxP and Contractor shall cooperate to schedule the Cx tasks to minimize the duration of the Cx activities.
- B. Phases of Commissioning: The Cx process will be categorized into Phases as indicated below and defined under the definitions paragraph above. Note that per schedule, different systems and/or areas may be in different phases at any given time given that the Cx program will be integrated into the construction process:
 - 1. Construction Phase
 - a. Pre-Startup
 - b. Startup and Pre-Functional Checkout [Installation Verification (IV)]
 - 2. Acceptance Phase
 - a. Functional Performance Testing [Operational Verification (OV)/ Performance Verification (PV)]
 - b. Validation/Qualification
 - 3. BMS Observation Period
 - 4. Endurance Period
 - 5. Warranty Period
- C. The scheduler shall coordinate with the CxP to specifically include the detailed tasks involved in the Cx process. Scheduler shall meet with the CxP and the subcontractors to determine the installation, pre-functional, and functional performance testing activities with the general construction process constraints and integrate the agreed upon process into the main construction schedule. CxP will provide typical precedent diagrams for the overall commissioning process and for typical systems. Commissioning-related tasks shall be coded generally by system to facilitate generating a group of related activities that will be used during Cx progress meetings.
- D. The Cx precedent schedule will outline generic Cx tasks with precedents or prerequisites to each task. These tasks, which will be shown generically for typical systems, will apply to many systems. Contractor shall incorporate the tasks into EACH SYSTEM. This will require a detailed track for each system and as such the scheduler must schedule and code by system as well as by area. The Cx precedent diagram will also indicate system precedent requirements for Pre-Functional and Functional Performance Testing. Contractor shall collaborate with the CxP to determine impacts of project phasing as applicable. Examples of enumerated tasks include:
 - 1. Preparation of draft Pre-Functional Documentation.

2. Contractor preparation of Training Plans.
 3. Contractor preparation of O&M Documentation content and other content for the Commissioning Record.
 4. FAT, SAT, and/or Independent Testing Agency activities.
 5. Electrical Start-Up/Turnover by system and zone group.
 6. Mechanical Start-Up/Turnover by system and zone group.
 7. BMS Start-Up/Turnover by system and zone group.
 8. TAB by system and zone group.
 9. Training Events.
 10. Pre-Functional Documentation submittal and System Turnover.
 11. Functional Performance Testing by system and zone group.
 12. Occupant or Regulatory Agency testing or approval process.
- E. Contractor shall completely install; thoroughly inspect; start-up; and test, adjust, and balance systems and equipment. All activities shall be documented per specified procedures and progress tracked on the construction schedule.
- F. Notification of utility or system outages affecting current mission shall require advance notification per applicable Division 01 section.
- G. Schedule for any required representative space mock-ups as early as possible to facilitate determining standards for closeout.
- H. Contractor shall notify CxP at least 14 days in advance for all system and equipment Start-Ups, training, pressure tests, or system flush and fill. At their discretion, the CxP shall witness selected Start-Ups, training events, or tests. Notification shall be accompanied by a schedule showing the coordinated start date and task duration and all currently open precedent requirements.
- I. GC shall schedule and conduct System Turn-Over Meetings for all systems and equipment in the Cx scope as specified below. GC shall notify CxP, PM, A/E, and Owner in writing that systems are complete and ready for verification and Functional Performance Testing.

3.3 WEB-BASED COMMISSIONING PORTAL

- A. General: The Cx Portal is a reference to a web-based Internet hub used to electronically collaborate and coordinate activities and deliverables throughout the Cx process. The Cx Portal is hosted by the CxP or a third party vendor and shall be accessible to all Parties participating in the Cx program. The Cx Portal provides a common location to store Pre-Functional Documentation, Functional Performance Tests and results, coordinate Cx Issues Management, and may also host project documents and deliverables. It also serves as a collaborative email hub to facilitate, automate, and track communications between Parties relating to the Cx process.
- B. Participation: All general and major subcontractors participating in the Cx process shall participate in the use of the Cx Portal to document the Cx procedures.

3.4 COMMISSIONING KICK-OFF/COORDINATION MEETING

- A. CxP shall schedule and conduct a Cx coordination meeting near the beginning of construction. The following should be discussed at this meeting:
1. Overall commissioning program scope and goals, including overview of Cx Plan and review of commissioning specifications.

2. Commissioning phases and activities.
3. Responsibilities of the construction parties and interaction with the CxP and Owner to support commissioning.
4. Protocol management and Cx Action Item (issues) tracking.
5. Required Contractor submittals to support commissioning (O&M Documentation).
6. Construction schedule management relating to commissioning.

3.5 PRE-START-UP CONSTRUCTION ACTIVITIES

- A. The construction phase activities defined below begin with early MEP construction and end with MEP systems ready for energization and Start-Up.
- B. Submittal Review: The CxP will collect and review contractor submittals applicable to systems being commissioned. Submittals shall include but not be limited to Product Data, Shop Drawings, OEM Manuals, As-Built Drawings, Factory Test Reports, and Independent Testing Agency Reports (as applicable). For LEED Option 1 Path 1 Credit, the CxP will document the submittal review process and will address potential non-compliance with the OPR and BOD. LEED submittal reviews will be concurrent with the reviews of the A/E and will be submitted to the Design Team and the Owner as specified.
- C. Construction Installation On-Site Review: The CxP will periodically visit the construction site and check on progress of installation activities as they progress. Contractor's commissioning coordinator or other field representative shall be informed of these events and available for input or questions as needed. Issues or concerns arising during these site visits may result in Action Items is required to document resolution.
- D. System Ready for Energization: When construction activities are complete for a system or equipment, the GC shall ensure the Pre-Functional Checklists are updated and the CxP is notified of the status and of the date for system energization.

3.6 START-UP, PRE-FUNCTIONAL, AND IV ACTIVITIES

- A. The construction phase activities defined below begins with system/equipment energization and ends with MEP systems ready for Functional Performance Testing.
- B. System/Equipment Start-Up: The GC and construction team shall energize the system/equipment and notify the CxP and Owner of the start-up status of each system.
- C. Complete Control System Installations: After initial energization, Contractors continue with final installation and checkout tasks, including but not limited to BMS/PCS programming and internal calibration and checkout, shop drawing and P&ID updates completed, and TAB measurements completed and submitted.
- D. Vendor Site Acceptance Tests (SAT) Complete: Systems subject to vendor-start-up and placement into service shall be completed and SAT documentation shall be completed and submitted for CxP review. GC shall notify CxP and Owner within 14 days in advance when vendor SATs are being carried out in the field. CxP/Owner have the option to witness any/all vendor SATs as desired.
- E. Complete Pre-Functional Documentation: When construction activities are complete for a system or equipment, the GC shall ensure the Pre-Functional Documentation is updated and the CxP is

notified of its completion. Any outstanding items still required for final acceptance shall be noted in the documentation and discussed with the CxP.

- F. System Turn-Over to CxP: System 'Turn-Over' is a quality-control milestone in which the GC and all Contractors responsible for completing the installation and start-up of a system or equipment validate that the system or equipment is completed and operational per the contract documents. This also verifies that it is being placed into service and turned-over to the CxP for formal commissioning verification, testing, and documentation.
 - 1. Notification shall be provided for all system turn-over dates to the CxP and the Owner at least 14 days in advance of the activity. Primary responsibility of confirmation readiness for turn-over lies with the GC.

3.7 FUNCTIONAL PERFORMANCE TESTING

- A. Installation Verification (IV): The CxP shall begin formal system commissioning by first executing the installation verification (IV) processes which consists of:
 - 1. Reviewing and approving the Pre-Functional Documentation submitted by the Contractor.
 - 2. Independently verifying and documenting that systems are installed per design, that all subsystems, components, and control devices are present and operational, that all required submittal documents are available and accurate, and that other prerequisite systems/equipment required to serve the system are operational.
 - 3. Installation Verification portion of FPT can also be completed during Start-Up phase.
- B. Operational Verification (OV): Operational verification activities consist of CxP execution of Functional Performance Tests consist of the following:
 - 1. Component and Device Testing: Independent testing, verification, and documentation of the operation and accuracy of system components and devices, including but not limited to:
 - a. Pumps, fans, valves, dampers, heat exchangers, coils, etc.
 - b. Control inputs (sensors, transmitters, relays, etc.) and control outputs (actuators, control signals, etc.)
 - 2. Performance Verification Testing: Testing, verifying, and documenting the results of testing all aspects of the system/equipment Sequences of Operation, including but not limited to (as applicable):
 - a. Normal modes of operation.
 - b. Emergency modes of operation.
 - c. Operator-Interaction requirements, including alarms and graphics.
 - d. Interactions and interlocks with other facility systems or equipment.
- C. Additional requirements further detailing and specifying the Functional Performance Testing process are specified in Section 01 91 10.

3.8 COORDINATION MANAGEMENT PROTOCOLS RELATIVE TO COMMISSIONING

- A. Coordination responsibilities and management protocols relative to Cx are initially defined herein but will be refined and documented in the Construction Phase Cx Kick Off meeting. Contractor shall have input in the protocols and all Parties will commit to process and scheduling obligations. The CxP will record and distribute.
- B. Non-Conformance Deficiencies Identified by the CxP: See 'Action List' in this Section.

- C. Control Sequence Modifications: Refer also to the paragraph on software optimization in the controls commissioning specification section. CxP shall make every attempt to thoroughly review the sequences during the submittal phase and address any issues prior to the submittal approval. However, CxP and the BMS/PCS contractors may incorporate minor changes to the sequence during testing when it is apparent that it improves the control of the equipment but does not fundamentally change the sequence. The time required by the BMS/PCS contractors for this type of modification is addressed in the controls commissioning specification section. Any and all changes must be thoroughly documented in the record documents.
- D. Functional Performance Test Documents: Functional Performance Tests are prepared and completed by the CxP. Generic functional performance and integrated system tests are specified under separate Division 01 Sections. Final FPT documents are developed during the construction phase, typically after completed MEP and BMS submittals are approved. CxP forwards the FPT procedures to the GC to be subsequently distributed to the Contractors for review. Contractors approve the procedures. Throughout the Cx process, CxP maintains a current record of the FPTs and their results and keeps the documentation up to date and accessible for all to access the current progress. CxP distributes copies of the FPTs at the completion of any significant stage of commissioning or upon request.

3.9 FUNCTIONAL PERFORMANCE TEST EXECUTION

- A. The objective of Functional Performance Testing is to demonstrate that each system is operating according to the approved OPR/BOD and URS/SOO/SDS and approved Contract Documents. Functional Performance Testing facilitates bringing the systems from completed Start-Up to Functional Completion. During the FPT, areas of deficient performance are identified and corrected to improve the operation of the systems. System parameters are further tuned and optimized to provide for stable control and interrelated system effects are also addressed.
- B. Functional Performance Testing procedures are specified in Section 01 91 10. Contractor shall participate in the development and approval of the testing procedures as requested, as well as participate as required in the initial sample of tests as indicated herein.

3.10 COMMISSIONING ISSUES MANAGEMENT

- A. CxP shall maintain an Cx Issues Log tracking individual issues ('Action Items') that relate to the Cx process. Each item shall be tracked with the initiating Individual, the Parties responsible, due date, the date of closure, and a description of the resolution. Each item shall be categorized for sorting and tracking and for documentation on applicable forms.
- B. CxP will disseminate this list as appropriate to keep all Parties informed.
- C. All Parties indicated as responsible for an Action Item shall respond by direct entry or email to the Cx Portal. Any Parties not using the Cx Portal may respond by separate email.
- D. Deficiencies Identified by the CxP: When the CxP identifies a deficiency (during or post-construction), CxP shall make a good faith assessment of responsible parties. Those parties, as well as Owner and GC shall be notified of the perceived deficiency. This communication is FOR INFORMATION ONLY and is not a directive to any party to resolve the deficiency. Contractor may accept responsibility and resolve the deficiency voluntarily. If Contractor contests either the deficiency or responsibility for that deficiency, Contractor shall respond to that deficiency indicating disagreement. If responsibility is not agreed to via the Cx dialogue, Owner or GC as

applicable shall issue a work directive or RFI via the normal contractual channels to resolve the issue. Non-conformance deficiencies identified during Functional Performance Testing shall be resolved as follows:

1. Corrections of identified minor deficiencies may be made during the tests at the discretion of the CxP. In such cases, both the deficiency and associated resolution will be documented in the database.
 2. Reasonable effort will be made by the CxP to expedite the FPT process and minimize unnecessary delays, while not compromising the integrity of the procedures.
 3. When there is no dispute on the deficiency and the Contractor accepts responsibility to correct it:
 - a. The CxP shall document the deficiency along with the Contractor's response and intentions, and then proceed forward to another test. A copy/email of the deficiency shall be generated and provided to the Contractor and CxP. The Contractor shall then correct the deficiency, complete the Action Item response certifying that the issue is resolved and /or the equipment is ready to be retested, and sends it back to the CxP.
 - b. The CxP reschedules the test and the test is repeated until satisfactory performance is achieved. CxP then closes the Action Item.
 4. If there is a dispute about a deficiency, regarding whether it is a deficiency and/or who is responsible:
 - a. The deficiency shall be documented as an Action Item with the Contractor's response and the Owner and GC will be notified. The Owner and GC will track this issue under the construction contract dispute resolution provisions.
 - b. Final interpretive authority is with the A/E. Final acceptance authority is with the Owner.
 - c. The CxP documents the resolution to the Action Item.
 - d. Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, and responds to the Action Item indicating completion. The CxP reschedules the test and the test is repeated until satisfactory performance is achieved. CxP then closes the Action Item.
- E. Failure Due to Manufacturer's Defects. If 10% or three, whichever is greater, of identical pieces of equipment fail to perform to the required Contract Document criteria (mechanically or substantively) due to manufacturing defect, all identical units may be considered unacceptable by the Owner. (For the purposes of defining 'identical equipment' for this Section, size or capacity alone does not constitute a difference.) In case of failure due to manufacturer's defects, the Contractor shall provide the Owner with the following:
1. Manufacturer's response in writing as to the cause of the failure and proposed resolution.
 2. Manufacturer shall implement their proposed resolution on a representative sample of the product.
 3. The Owner will determine whether a replacement of all identical units or a repair is acceptable.
 4. Upon acceptance, the manufacturer shall replace or repair all identical items at their expense and shall extend the warranty accordingly (if the original equipment warranty had begun).
 5. Manufacturer or Contractor shall pay the costs of all retesting necessitated by the failure.
- F. Action Item Closure: The originator of an Action Item shall close it and record the resolution. Closing an Action Item amounts to entering the date on which it was addressed.

3.11 TRAINING EXECUTION

- A. General: Adequate and thorough training of the Operators and the facilities staff is vital to effective transition and early occupancy of the building. A key goal of the Cx program is to ensure that this is accomplished. Contractors, subcontractors, and Manufacturers/Vendors as specified shall prepare and conduct training sessions on the installed systems and equipment for which they are responsible. The Contractor shall be responsible for ensuring all training is performed in accordance with the Contract Documents.
- B. Training Plan Document: Refer to the requirements in Part 2 of this Section.
- C. Training Events Overview. Training Events include all classroom and field-based training sessions that result in the training or transference of design team or Contractor knowledge to the Owner. The following Training Events shall be executed as part of the Training Program:
- D. Design Orientation Training: The purpose of the one-time Design Orientation Training event is to acquaint the Owner and Contractors with the facility design strategies and approach taken by the Design Team. The mechanical design build engineer is responsible for conducting and documenting this training, with assistance and support from the CxP. This training can take place at the same time as the more traditional mechanical systems training if the design lead is present during this training. Material from the Owner's Project Requirements (OPR) and Basis of Design (BOD) documents shall be covered during this training. An overview of the facility and its systems, the system design goals and the reasoning behind the selection of the equipment will be reviewed. The CxP can also review the Start-Up process and FPT/Acceptance Testing procedures.
- E. Equipment and Systems Training: The Contractor (or Manufacturer's Representative) shall provide training to the Owner/Operators on individual systems and equipment only after successful Start-Up and completion of functional performance testing. These training events cover proper operation, maintenance, repair, and diagnosis of the systems, equipment, and components installed by the Contractor.
 - 1. Description: Equipment and Systems Training events will typically occur over time as systems and equipment are brought online and Turned-Over. Training shall cover proper operation, maintenance, repair, and diagnosis of the systems, equipment, and components installed by the Contractor. The appropriate trade or manufacturer's representative shall provide the instructions on each major piece of equipment. These sessions shall use the manufacturer's printed installation, operation and maintenance instruction material and shall include a review of these instructions emphasizing safe and proper operating requirements and preventative maintenance. Training shall follow handouts that list the key points in bullet form presentation-style or follow detailed written documentation. Training will not be approved unless it contains accompanying written documentation.
 - 2. Equipment Covered: Training shall be provided for all major items of equipment within the scope of commissioning and per the Specifications.
 - 3. Minimum Training Content: Equipment and Systems Training shall include as a minimum for each type of equipment:
 - a. Names, addresses, phone numbers, websites of sources for information, tools, spare parts, and other details for the equipment.
 - b. The trainer shall review how the equipment serves this specific facility. Information shall include equipment amounts, numbers, capacities, sizes, and locations and shall show the equipment in applicable system schematics.
 - c. Conceptual overview of how the equipment works.
 - d. Details of the warranty or guarantee.
 - e. Intended sequences of operation in all modes of operation.
 - f. Limits of responsibility (example: unit-mounted controls vs. BMS).

- g. Sources of utility support.
 - h. Routine operator tasks involving monitoring and operation, covering all modes of operation and mode switching as applicable.
 - i. Relevant health and safety practices/concerns.
 - j. Common problems and their diagnosis and repair.
 - k. Proper maintenance schedules, tasks, and procedures with demonstrations.
 - l. Emergency response, documentation, and recovery procedures.
- F. Final Systems Operation Training: The BMS contractor shall provide this training to the Owner and Operators on whole-building operation. This training shall focus primarily on BMS control of building systems and operation and its impact on building performance and shall be conducted after Functional Completion.
1. Description: Final Systems Operation Training provides the Owner and Operators a training session on whole-building operation. It shall focus primarily on BMS control of building systems and operation and its impact on building performance. System interactions shall be presented and discussed (such as a combined air handler, chiller, boiler, and terminal unit system), along with a detailed presentation of the sequences of operation and their relationship to the BMS. This training shall be conducted by the BMS contractor with assistance from the CxP, and shall be attended by the Owner, Operators, Contractor, Design Team, and by any other Cx Team members deemed necessary by the CxP or the Owner.
 2. Coordination with BMS Training: Detailed BMS component training for the facility Operators shall be considered as part of Equipment and Systems Training. This training shall have been completed prior to Final Systems Operation Training.
 3. Scheduling: Final Systems Operation Training shall be conducted after all FPTs have been successfully executed.
 4. Attendees: Any Cx Team member is eligible to attend. Required attendees include the BMS contractor (lead), CxP (assist), GC, mechanical contractor, A/E, and Owner/Operators.
- G. Training Means, Methods, and Documentation: The Contractor must document all training sessions. Details on the means and methods for conducting and documenting training, including location requirements, preparation, methods for presentation, scheduling, instructor qualifications, and other details are specified below.
1. Setting: Training sessions should typically start and end in a classroom setting. Field demonstrations shall be conducted to demonstrate the hands-on aspects of the required tasks.
 2. Presentation: Training shall include electronic presentation materials. Presentation materials shall be submitted by the Contractor with the Training Plan. Contractor shall provide audio/visual equipment as required to communicate to a minimum of 10 attendees.
 3. Documentation: Subcontractors or Vendors must document the training sessions in a Training Record. Beyond that included in the Training Plan, documentation shall include the names of the attendees and their evaluations. Training shall follow handouts that list the key points in bullet form presentation style or follow detailed written documentation. Training will not be approved unless it contains accompanying handout documentation to every attendee for their own use and record, separate from the master copy for the Training Record. All documentation must be provided in PDF electronic format. All handouts and presentation slides shall be included in the documentation.
 4. Video Recording: All Training shall be video recorded by the GC or applicable Contractor. Cell phone video is allowed if deemed acceptable in the associated contractor specification. All training videos shall be reviewed by the Owner and CxP for quality and adherence to the Training Plan. Training presenter must be capable of being heard over any background noise throughout the video and questions from participants should be

repeated by the presenter before responding. Training video that is deemed inaudible shall require revision or reenactment.

5. Evaluations: All training sessions must be evaluated by the participants. CxP shall develop an evaluation form that assesses the quality of the presentation, the quality of the content, and provides a forum for feedback of items the attendee feels should be provided or expanded on. The Contractor that organizes the sessions is responsible for distributing the evaluations, ensuring they are completed, and compiling them and forwarding them to the CxP.
- H. Training Prerequisites: Training shall not be conducted until the subject system or equipment has been designated as ready for commissioning. If the Contractor wishes to schedule both Turn-Over and Training on the same day/visit and if the systems are discovered to not be fully-functional at that time, Training shall be canceled and rescheduled.
- I. Scheduling: Training Events shall be coordinated through and scheduled by the GC. These events shall be coordinated via the submittal of a draft training schedule in conjunction with the training plan. CxP shall provide example schedule on request.
 1. The GC shall submit a final training schedule with proposed dates following initial review and approval of the draft training schedule. This schedule shall not be submitted until the schedule for system initial operation and turnover has been established.
- J. Attendees: GC shall ensure that all appropriate subcontractors be present for these sessions. Any Cx Team member is eligible to attend. Required attendees include the applicable Contractors (Lead), CxP, and the Owner/Operator.

3.12 OBSERVATION PERIOD FOR BMS STABILITY

- A. General: The BMS Observation Period is defined as the period of time prior to or immediately following Functional Performance Testing where the BMS is shown to operate properly without malfunction, without alarm caused by control action or device failure, and with smooth and stable control of systems and equipment in conformance with these specifications.
- B. Prerequisites: The CxP will determine when the BMS has been substantially completed to allow for the start of an informal Observation Period as defined above. This is typically when natural response Functional Performance Testing is complete and Action Items having significant impact on the system performance or monitoring have been resolved. Observation Periods may be witnessed in phases only on larger more complex projects where interdependencies between phases are not a factor.

3.13 OPPOSITE SEASON TESTING/OBSERVATION

- A. Most projects with HVAC systems that provide both heating and cooling will require an abbreviated FPT and/or BMS Observation Period during the season opposite the season during which operation was initially started to assess the proper operation of the heating or cooling system as applicable at peak load conditions. Opposite season testing is included in this project.
- B. CxP will make an opposite season site visit and will review trend logs to confirm proper operation of the facility during the opposite season from when it was originally placed in operation.

- C. The applicable Contractor shall have site presence or make themselves available for remote conference session to discuss issues discovered during opposite season testing efforts but shall not be required to participate in opposite season testing.

3.14 WARRANTY PHASE AND END OF WARRANTY SITE VISITS

- A. CxP may visit the site at any time during the warranty period to assist in resolving issues or conditions that have arisen since the functional testing, and to assess overall system operation. CxP may monitor the building systems via remote access to the BMS.
- B. CxP will visit the site within the last one to two months of the Warranty Period to review the status and agree upon disposition of remaining open Action Items.

END OF SECTION

SECTION 01 91 10
FUNCTIONAL PERFORMANCE TEST PROCEDURES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Functional Performance Testing (FPT or 'testing') of systems.
- B. Documentation of FPTs.
- C. Acceptance criteria.

1.2 SCOPE

- A. This section describes the Functional Performance Testing (FPT) process, procedures, and requirements. It is intended to illustrate (i) the Contractor's requirements for assisting the Commissioning Provider (CxP) with the Functional Performance Testing of systems, and (ii) to demonstrate the level at which systems and equipment will be tested prior to being deemed 'Acceptable' to the Owner.
- B. The CxP will prepare itemized and detailed FPT plans and procedures that:
 - 1. Specify individual tests and procedures that meet the general requirements of the Cx Plan and commissioning (Cx) process.
 - 2. Serve to document and record the testing procedures and the results of the tests.
- C. The Contractor shall provide technical input to the CxP as needed during the development of the final project FPTs.
- D. Example (referred herein to as 'generic') FPTs are provided as illustration for the Contractors to represent the level of detail to which FPTs will be conducted.

1.3 RELATED WORK AND DOCUMENTS

- A. The Cx process references many related Sections, particularly Section 01 91 00 - General Commissioning. It is important for all Contractors subject to the Cx process to be familiar with Section 01 91 00.
- B. Refer to Section 01 91 00 for a complete list of Sections on Related Work.

1.4 DEFINITIONS AND ABBREVIATIONS

- A. Refer to Section 01 91 00 for a complete list of Definitions and Abbreviations. This paragraph includes a comprehensive list of acronyms describing the various required Parties referred to in the Section for individual FPTs.

1.5 REFERENCE STANDARDS

- A. Refer to Section 01 91 00 for a complete list of Reference Standards.

1.6 FUNCTIONAL PERFORMANCE TESTING

- A. Objectives and Scope: Systems shall be tested to ensure proper operation through all modes of operation including normal expected operation, maintenance operation as well as proper response to system and component failures that are considered abnormal operation as indicated below.
 - 1. Normal Operation: Each system shall be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. These series of tests will demonstrate that the systems and equipment operate throughout typical operation including normal adjusting, cleaning, media replacement, and maintenance.
 - 2. Abnormal Operation: Test each system to simulate possible abnormal conditions and verify proper responses to such modes and conditions as power failure, equipment and component failure, freeze condition, deviation of operating parameters outside of normal, no flow, supporting utility failure, human error, etc. Abnormal operation tests shall demonstrate proper and safe response to the subject systems and the other systems that it affects or integrates with. These tests shall also demonstrate proper enunciation of abnormal conditions to quickly and effectively notify users and operators of such condition. Specific modes required in this project are given in this section and any other sections where test requirements are found.
- B. Development of Test Procedures: CxP shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. Prior to execution, the CxP shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment and warranty protection, and scope. The CxP will also submit the tests to the A/E for review.
 - 1. Contractor shall review the FPTs in detail and approve them.
 - 2. The CxP shall review Owner-contracted testing, factory testing, or required Owner acceptance tests for which the CxP is not responsible to oversee. Review shall include content, scope, and documentation format, and shall determine what further testing or format changes may be required. Redundancy of testing shall be minimized.
 - 3. The purpose of any given specific FPT is to verify and document compliance with the stated criteria of acceptance.
- C. Scheduling: Owner shall schedule the Functional Performance Testing after system 'Turn-Over' occurs (Turn-Over is the official Contractor notification that systems have completed Start-Up and are ready for testing with all required submissions and reviews of all the required submittals has occurred). To the extent practical, tests shall be scheduled to allow efficient and contiguous testing of inter-related systems and equipment.
- D. Phasing: Non-interdependent segments of the project testing can be phased. Phasing of this project is described below
- E. Participation: CxP will direct and conduct functional performance tests after Start-Up Procedure documentation of systems and equipment has been reviewed and accepted. Conceptual procedures for the functional performance testing are outlined elsewhere in this Section. The testing involves all parties including the Contractors, but is generally executed by the CxP. The intention is to work the initial, unique, systems with the contractors and complete the remaining

tests without contractor involvement. As such, the following paragraphs define the level of Contractor involvement required for FPT support. This time allotment for FPT support does not include the time for ATC system Demonstration, repairs of any deficiencies, retesting as a result of failed testing, or any of the pre-functional start-up tests required within the specifications. This does not include the requirements for Off-Season testing.

1. Typically, multiple parties are required for any given test, yet participation for any given party is only required for the respective portion of the test for which the party is responsible. The CxP will notify each trade of the testing which they must participate. Only those notified Contractors, which participate in the testing, will be credited for the hours against their FPT allotment.
 2. No party involved with the project is prohibited from participation in or witnessing of any tests. Any contractor may elect to witness all tests on their systems even if their involvement is not directly requested by the CxP. In these instances the time used by the Contractor is not part of the FPT allotted hours.
 3. Due to the open BAS platform (visibility of programming) provided by the building automation system (BAS) for this project, the BAS controls portion of each FPT where the presence of the BAS contractor is required, will be limited. The maximum BAS contractor requirement per FPT will be the first two FPTs of the system type being tested. The minimum may be 0 depending on the system. CxP will inform the BAS contractor of the exact requirements on a system-by-system basis.
 4. The maximum required time for contractor FPT participation (in hours) is indicated below, by trade. Each category of support is to be provided by the contractor responsible for the installation of the system (e.g., the mechanical system support is to be provided by the MECH). Additional time required by the Contractor due to incompleteness of the system, failure of tests, or failure of sampling criteria shall be at the contractors expense, with no additional costs to the Owner.
 - a. Mechanical (HVAC) FPT Support – 24 hours
 - b. Mechanical (Plumbing) FPT Support – 8 hours
 - c. Building Automation System FPT Support – 32 hours
 - d. Electrical FPT Support – 16 hours
 - e. TAB FPT Support – 16 hours
 5. Contractor assumes responsibility for damage to systems conducted in accordance with the approved procedures.
- F. Completeness: All systems must be completed and ready for FPT. All start up, factory authorized field testing, independent testing agency tests, and TAB procedures must be complete and the control systems must be tested and started for the respective system or component.
- G. Test Documentation: CxP will conduct tests, and/or witness tests as applicable. CxP will record all test results on the forms developed for the testing. CxP will 'Pass' or 'Fail' the testing and record the date and time of the test. Deficiencies shall clearly be indicated when the test is failed. When all related testing is completed successfully, CxP shall recommend acceptance of the system or component.
- H. Deficiencies and Re-Testing: When deficiencies are identified during testing, depending on their extent or magnitude, they can be corrected during the test and the testing can continue to successful completion. More significant deficiencies will require failure of the test and re-testing. Deficiencies of this magnitude will result in an Action Item on the Issues Log. The resolution of each deficiency will then subsequently be tracked by the CxP via the Issues Log. All tests shall be repeated until successful completion. Refer to more specific provisions below.
- I. Sampling: Some types of identical equipment (such as terminal devices) will be tested using a sampling strategy. The sample percentage is indicated in the generic FPT provided elsewhere in this Section.

- J. Max Failure Limit and Sample Percentages: A Maximum Failure Limit is indicated along with the Sampling Percentages. The Max Failure Limit indicates the maximum percentage of the tested devices that may have any test that fails before an entirely new sample must be tested. This is based on the concept that if many failures occur, it is a result of inadequate start-up or check out by the Contractor. When the maximum number of failures is reached, testing on that sample will be terminated and re-testing will be scheduled.
1. If no Max Failure Limit is indicated, all tested samples must pass (Max Failure Limit 0%).
 2. Where sample tests involve multiple systems, the Maximum Failure Limit will apply per system.
 3. Any compensation to the CxA for additional retesting due to multiple testing failures will be made by the accountable contractor(s) at the discretion of the Owner.
 4. All work necessitated by sample failures shall be at no cost to the Owner.
- K. Opposite Season Testing: Testing procedures shall be repeated and/or conducted as necessary during appropriate seasons. Opposite Season testing will be required where scheduling or equipment loads, false or real, prohibits thorough testing in all modes of operation. Air handler and central heating system testing for heating-related modes of operation and control loops shall be tested during outside air temperatures below 45°F or above 80°F depending upon the weather experienced during FPTs. The MC, ATC, and TAB contractors shall accommodate questions from the CxA from Opposite-Season testing but are not required to be present during Opposite-Season testing. They are only to be available to respond to phone call questions in a short period of time – one hour or less.
- L. Approval. The CxA passes each test and subsequently recommends approval to Owner or CM who reviews and approves the FPT.
- M. Detailed FPT Development and Contractor Review: CxP will prepare detailed and itemized testing procedures to define and document the FPT. These will typically be developed during the Construction Phase and completed during the Acceptance Phase. The CxP shall submit these procedures to the Contractor for review. Contractor shall indicate all required limitations, safety procedures, maximum thresholds, and any other parameters during the FPT development. Contractor shall be responsible for any damage to the equipment caused by Functional Performance Testing done per the procedures and within the limitations of the approved procedures.
- N. Completeness: All systems must be completed and ready for FPT. All Start-Up Documentation, factory-authorized field testing, independent testing agency tests, and TAB procedures must be complete and the control systems must be tested and started for the respective system or component.
- O. Test Documentation: CxP will conduct tests, and/or witness tests as applicable. CxP will record all test results on the forms developed for the testing. CxP will 'Pass' or 'Fail' the testing and record the date and time of the test. Deficiencies shall clearly be indicated when the test is failed. When all related testing is completed successfully, CxP shall recommend acceptance of the system or component.
- P. Deficiencies and Retesting: When deficiencies are identified during testing, depending on their extent or magnitude, they can be corrected during the test and the testing can continue to successful completion. More significant deficiencies will require failure of the test and re-testing. Deficiencies of this magnitude will result in an Action Item on the Action List. The resolution of the deficiency will then subsequently be tracked by the CxP via the Action List. All tests shall be repeated until successful completion. Refer to more specific provisions below.

- Q. Sampling: Some types of identical equipment (such as terminal devices) will be tested using a sampling strategy. The sample percentage is indicated in the generic FPT provided elsewhere in this Section.
- R. Approval. The CxP passes each test and subsequently recommends approval to Owner or CM who reviews and approves the FPT.

1.7 COORDINATION BETWEEN TESTING PARTIES

- A. Factory Start-Ups: For many systems and equipment, Factory Start-Ups are specified. These Factory Start-Ups will be reviewed and checked during Functional Performance Testing. All costs associated with the Factory Start-Ups are included with the bid unless otherwise noted. Contractor shall make notification of when Factory Start-Ups are occurring and coordinate these with witnessing Parties. The CxP and other Cx Team members may witness Factory Start-Ups at their discretion. Aspects of Functional Performance Testing accomplished during the Factory Start-Ups may be accomplished and approved by the CxP if they meet the intent of the FPT.
- B. Independent Testing Agencies: For systems where Independent Testing Agencies are specified, the cost of this testing shall be included with the bid unless otherwise noted. Much of the testing performed by Independent Testing Agencies will cover aspects required in the Start-Up Documentation and Functional Performance Tests.
 - 1. Contractor and testing agencies shall coordinate with the CxP so that the CxP can witness the testing and approve the applicable aspects of the FPTs.
 - 2. The CxP may in some cases independently spot-check work of the testing agencies if the tests were not witnessed. However, it is not the intent for the CxP to re-accomplish testing by others that is specified in the construction specifications. For instance, much of the testing requirements for the electrical systems will be performed by the independent electrical testing agency provided under the bid. The CxP shall witness the indicated sample of the testing and record the results in the record of Functional Performance Tests.
 - 3. Contractor is responsible for coordinating the efforts of testing agency with that of the Cx process. Documentation shall be contiguous and seamless and duplication should be avoided. Testing agencies shall complete the documentation of the Cx process as required.
- C. Specialized Testing by Contractor: Where Specialized Testing is specified in the technical specifications, the Contractor, subcontractor, vendor, or factory representative as applicable shall conduct the Specialized Testing and provide all specialized instrumentation and equipment. CxP and other Cx Team members may witness tests at their discretion. The CxP may in some cases independently spot-check the results of the tests if the tests were not witnessed. However, it is not the intent for the CxP to re-accomplish testing that is specified in the construction specifications. All Specialized Testing procedures shall be integrated with the Cx process and all documentation shall be coordinated and integrated with the documentation of the Cx process. Examples of Specialized Testing include but are not limited to:
 - 1. Generator load testing (not including building power outage testing which will be administered by CxP)
 - 2. Acceptance testing of the fire alarm system
 - 3. Electrical system testing per NETA

1.8 FPT ACCEPTANCE CRITERIA

- A. The Acceptance Criteria shall be as follows unless more specifically indicated within individual tests. CxP may exercise professional judgment to relax requirements and pass tests and recommend approval when appropriate.
1. Capacity: Capacity and/or equipment performance will generally be as specified $\pm 5\%$.
 2. Efficiency: Efficiency where specifically indicated in the documents will be $\pm 5\%$. When inferred from manufacturer's catalogue data, criteria will be $\pm 10\%$.
 3. Balancing: Balancing-related criteria will be $\pm 5\%$ for water and $\pm 10\%$ for air.
 4. Accuracy: Accuracy/repeatability on sensing devices will be as specified for the device. CxP and TAB will use calibrated gages for independent validation and use judgment in passing or failing the devices. In many cases, the coordination of multiple related sensors is more important than absolute accuracy.
 5. Controls: Control feedback loop response and setpoint deviation criteria will be as specified in Sections 23 09 23. In addition to those requirements, proportional plus integral will generally be used only unless its absolutely necessary to use derivative. And any overshoot occurrence or steady state offset is not acceptable.
 6. Sequences: HVAC sequence-related criteria will be as explicitly specified in the documents and as interpreted by the CxP. Code required sequencing shall be per the applicable code.
 7. System sequences shall be as required by the approved shop drawings.
 8. Motor Phase Imbalance: Shall be no more than 2% (Amps and Volts).
 9. Noise Levels:
 - a. Occupied Spaces: As indicated in the Owner's Project Requirements or Basis of Design (OPR/BOD) document. Otherwise, noise level shall be as recommended in the most current version of the ASHRAE Handbooks for the applicable occupancy.
 - b. Max 65dBa at 7' from an Engine Generator Set.
 - c. At limits of the enterprise or facility: As required by current local ordinances.
 10. Indoor Environmental Parameters (T, RH, CO₂, VOC): Shall be as indicated in the Basis of Design document. Otherwise, as recommended in the most current version of the ASHRAE Handbooks for the applicable occupancy.
 11. Air Pressurization: As indicated in the OPR/BOD document. Otherwise, as indicated in the most current version of the ASHRAE Handbooks for the applicable occupancy. Smoke/shaft pressurization shall be as required by NFPA to maintain maximum door opening forces and to restrict the passage of smoke.
 12. Return Air Flow and Pressurization: As indicated in the OPR/BOD document. Otherwise, no room will suffer from room pressure build-up such that a pressure measured relative to the hallway or adjacent room is above +0.05 inwc, with its door closed. And no airflow rates exceeding 250 Ft/Min in occupied spaces is allowed.
 13. Indoor Lighting Levels: As indicated in the OPR/BOD document. Otherwise, as recommended in the most current version of the IES Handbooks for the applicable occupancy.
 14. Electrical Systems: Shall be in accordance with manufacturer's recommendations of individual components and devices, NFPA 70B and International Electrical Testing Association (NETA) testing specifications NETA ATS-Latest Version.
 15. Inter-system interfaces and coordination: As specified and generally to ensure safe, reliable, and robust operation.

PART 2 - PRODUCTS

2.1 INSTRUMENTATION

- A. General: All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance within the tolerances specified. All equipment shall be calibrated according to the manufacturer's recommended intervals. Calibration tags shall be affixed or certificates readily available. Supplier of instrumentation shall submit the calibration certificates along with the Start-Up Documentation.

- B. Standard Testing Instrumentation: Standard instrumentation normally used for performance assessment and diagnosis will be provided by the CxP for tests being conducted by CxP. All other instrumentation shall be provided by the Contractor. The instrumentation to be provided by the CxP includes:
 - 1. Electronic manometer (for air and flow hood)
 - 2. Electronic manometer (for water/liquid)
 - 3. Temperature instruments and gauges
 - 4. Humidity instruments and gauges
 - 5. CO2 instrument
 - 6. Light level meter
 - 7. Electronic multimeter
 - 8. Power analyzer (including power factor and THD)
 - 9. Receptacle tester
 - 10. Tachometer
 - 11. Belt tensioner
 - 12. Sound meter
 - 13. Vibration meter capable of measuring peak-to-peak acceleration

- C. Special Tools: Special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and provided to the Owner.
 - 1. Provide a temporary license to software needed to access the BMS at both the terminal equipment and on the primary LAN/at primary controllers. Provide all configuration utilities needed to read all parameters and set up terminal boxes. Provide temporary graphic interface software license for use during the Acceptance Phase.

PART 3 - FUNCTIONAL PERFORMANCE TESTS (SYSTEMS AND EQUIPMENT RELATED)

3.1 PREREQUISITES

- A. All equipment, components, and devices applicable to the FPT must be started and operational and systems must have completed start-up and check out successfully or be 'Turned-Over' to the Cx Team. This includes completion of Start-Up Documentation, pressure testing of equipment, duct, piping; flushing/cleaning of applicable systems; completed labeling and identification; completed insulation of applicable systems; and all other requirements for placing system into dynamic operation.

- B. Unless specifically agreed upon by the Owner and CxP, all support systems shall be complete prior to FPT. For instance, an air handler will require that:
 - 1. The electrical system serving it is completed and tested.
 - 2. The hydronic systems serving it have been pressure tested, flushed, and functional performance tested.
 - 3. Balancing has been accomplished on the air and water sides.
 - 4. The control systems have been started and calibrated.
- C. The CxP shall determine the optimal sequence of testing.

3.2 FUNCTIONAL TESTING PROCESS

- A. Functional Performance Testing ('Functional Testing') on any given system shall typically begin with testing device-level elements such as sensors and actuators; progress to component-level assemblies of devices; then to system-level, then to inter-system level, then to building-level.
- B. Functional Testing of systems shall generally proceed from the utilities to the central systems, to the distribution systems, to the zone terminal units and services. CxP shall plan this process and communicate it by providing a list of FPT activities, their durations and pre-requisites in the schedule that are required to be completed prior to FPTs. Construction Manager shall reflect that process in the Construction Schedule. Subcontractors shall perform work in accordance with the schedule.

3.3 COMMON ELEMENTS FOR ALL SYSTEMS

- A. Required submittal documentation shall be present and located convenient to testing area. Validate that all required documentation has been submitted and is per the contract requirements.
- B. Contractor shall provide the completed Start-Up Documentation and shall follow Turn-Over procedures as specified in Section 01 91 00. CxP shall review the Start-Up Documentation and spot-check the installation prior to or at the beginning of the FPT.
- C. Refer to Cx specification 22 08 00 Plumbing Systems Commissioning, 23 08 00 Mechanical Systems Commissioning and 26 08 00 Electrical Systems Commissioning for additional Cx requirements and procedures to be used.
- D. Contractor shall demonstrate that access is sufficient to perform required maintenance.
- E. BMS trends shall have been established as required in the documents. These shall be available for review prior to or during the FPT.
- F. All dynamic systems powered by electricity shall be tested to simulate a power outage to ensure proper sequencing. Those on emergency power or uninterruptible power shall be tested on all sources.
- G. Capacities and adjusted/balanced conditions as applicable shall be subject to check.
- H. Sequencing Verification: All modes of operation and actions shall be verified for equipment/system samples.
- I. System and equipment configurations shall be compared against the contract documents.

- J. Verify functions (such as heating and cooling) are coordinated and do not overlap or ‘fight’.
- K. All adjusted, balanced, controlled systems shall be assessed to determine the optimal setting for the system as applicable. The optimal settings should be determined to establish reliable, efficient, safe and stable operation.
- L. BMS or Local Panel Dynamic Graphics: The graphic displays for all components, systems, and areas required to be represented by a BMS graphic shall be checked for adequacy and accuracy. Furthermore, when setpoints or other parameters are required to be adjustable, CxP shall verify that they can be adjusted directly from the graphic screen.
- M. Emergency power tests for mechanical systems will be conducted in concert with the testing of the emergency power systems. Mechanical contractor shall be available for the power outage test to test mechanical systems under a power outage. This is in addition to the requirements specified for the mechanical system.
- N. Where system and zones are designed for various modes of operations, test representative systems in all modes of operation. This includes:
 1. Seasonal Modes
 2. Sequencing Modes
 3. Emergency Modes

3.4 TAB VERIFICATION OF MECHANICAL SYSTEMS

- A. CxP shall review TAB reports.
- B. Participants shall include: CxP, Owner’s Representative, and TAB.
- C. The CxP will select up to 10% of the readings from the Balancing Reports and spot-check them. The maximum failure rate for this sample is 10% and the system shall be re-balanced and re-documented if this rate is exceeded. The readings selected by the CxP may include supply air diffuser readings (both minimum and maximum readings for VAV boxes), main and branch supply duct traverse readings, outside/return air flow readings, exhaust air flow readings, water flow readings, amp readings, and water pressure drop readings through coils, heat exchangers, and other hydronic elements. For all readings a deviation of more than 10% between the verification reading and reported data shall be considered as failing the FPT. All readings that fail the FPT shall require re-balancing.

3.5 HVAC SYSTEM PUMPS

- A. Participants shall include: CxP, MC, TAB, and BASC (BASC only where pumps are automatically controlled).
- B. Sample: 100%; max failure limit: 20%
- C. FPT shall include ‘Common Elements for All Systems’ (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation and TAB report.
- E. Contractor shall demonstrate that strainers are clean and no air is trapped in system.

- F. CxP shall spot-check Start-Up Documentation.
- G. Pumps shall be manually started individually. Pressure differential, kW (or slip on the motor), and flow shall be checked at shut-off, wide open, and balanced (or controlled) condition. Typically, the reading from the instrumentation provided with the pump (thermometers and pressure gages and flow meters as applicable) will be acceptable if used to validate an action as opposed to checking balancing. The result of this work should be the identification of pump impeller size, maximum pump flow capabilities and verification of flow rate meeting design requirement.
- H. For pumps designed with automatic starting of back-up pumps upon primary pump failure, test shall include (1) Enable automatic controls; (2) Start primary pump; (3) Open disconnect switch of primary pump; and (4) Validate that standby is energized. This test shall be performed on all pumps.
- I. For variable speed pumps, manipulate control valves to change flow conditions and observe control response. Ensure stable control response to step-change in flow conditions. Check for the applicable acceleration and deceleration of the pumps. Manually ramp the pump speed from minimum to maximum speed to ensure stable operation of pumps and record/defeat any critical frequencies. Record representative part-load output from the drive (using VSD read out). Check calibration of control input. Check drive bypass operation if applicable.
- J. For variable speed pumps that require staging up and down of the lag pump to meet system load, change load valve positions to result in lead pump speed being above the pump stage up setpoint to force lag pump stage up. Repeat load valve changes to force lag pump stage down. Verify pump stage up and down requirements are met and does not result in abrupt system changes during the stage up and down time frame.
- K. Simulate power outage and ensure orderly and automatic restart.

3.6 HYDRONIC DISTRIBUTION SYSTEMS

- A. Participants shall include: CxP, MC
- B. Sample: All systems, 20% (of strainers), Max Failure Limit: 5%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Check system make-up and pressurization. Record optimal settings. Ensure air is removed by bleeding the sample rate of coils or high points. Ensure expansion tanks are properly charged.
- E. CxP shall review Start-Up Documentation, pressure test documentation, and TAB report.
- F. Refer to 'HVAC Systems Pumps' for pump testing. Additionally, establish a trend on the pump control loop. Observe normal control function. Introduce one setpoint step-change and observe response.
- G. Verify sequencing of all pumps. Simulate pump failure and restart, pumps capacity stage up and stage down as applicable, and automatic rotation of lead/priority.
- H. Blow off selected strainers to ensure the system is flushed and clean.
- I. Verify or spot-check TAB results (Refer to 'TAB Verification of Mechanical Systems')

- J. Simulate and observe maximum and minimum loading conditions on the system from a flow and thermal perspective.

3.7 VARIABLE SPEED DRIVES (VSD)

- A. Participants shall include: CxP, MC, BASC and EC. Additional time is generally included with the systems that include the drives.
- B. Pumps and fan walls sample: 100%; max failure limit: 20%. Exhaust fans sample: 25%; max failure rate: 20%. Kitchen exhaust fans and supply fans sample: 100%; max failure rate: 20%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation.
- E. Verify the overload protection.
- F. Test the operation of the controller local and remote start/stop and speed control. Spot-check insulation resistance on the controller bus and control circuits.
- G. Validate VSD setup parameters are coordinated with motor application.
- H. Validate VSD acceleration and deceleration rates on start and stop.
- I. Verify ranging of control input and coordination with that displayed on Operator Interfaces.
- J. Verify 'Bypass' functionality where applicable.
- K. Verify restart after power outage.
- L. Verify any 'Skipped Frequencies' are programmed and recorded.
- M. Verify alarming and shutdown sequences.

3.8 AIR-COOLED HEAT PUMP AND AIR-COOLED CHILLER

- A. Participants shall include: CxP, MC, TAB, and BASC.
- B. Sample: 100%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review the installation against the manufacturer's installation instructions, start-up report and TAB report.
- E. Enable the heat pump and associated equipment and control system and increase the load on the hydronic system by starting the air handlers, radiant manifolds, etc.
- F. Verify that flow is established by the heat pump (evaporator) proof-of-flow switch or device.
- G. Verify the machine start sequence beginning with cooling and heating enable from BAS.

- H. Verify operation of the heat pump/heat recovery chiller and associated components in all heat transfer modes of operation, including defrost as applicable.
- I. Verify functioning of 'soft start' sequences, record motor amperage as a time function.
- J. Record amperage and voltage at full load and part load conditions. Confirm that the control system calculates the heat pump load and provides a trend log of the load imposed.
- K. Mechanical records discharge and suction pressures and water temperatures and verifies all are within expected ranges.
- L. Verify the machine shutdown sequence occurs properly when loads are removed from the hydronic system.
- M. Verify the operation of the chilled water pumps and the air-cooled condensing unit when the loads are restarted on the hydronic system.
- N. Verify proper stage-up and stage-down sequence of multiple heat pumps and heat recovery chillers. Check for excessive equipment cycling at part load for staged capacity control.
- O. Refer to 'HVAC Systems Pumps' for pump testing. Additionally, establish a trend on the pump control loop. Observe normal control function. Introduce one setpoint step-change and observe response.
- P. Check capacity and efficiency of the machines.
- Q. Check calibration of remote current limit or remote setpoint indication.
- R. Verify proper suction, head, and oil pressures.
- S. Verify the rotation and re-prioritization of the machines per the sequence.
- T. Verify proof and enunciation of individual chillers upon failure. Simulate failures that cause both an automatic reset of the heat pump/chiller (typically temporary condenser water flow loss) and manual reset of the heat pump/chillers. Verify that chiller requests are removed appropriately and the next chiller in rotation is energized. Test any chiller safeties not tested during start-up.
- U. Verify remote annunciate status values of all machines in all modes of operation thru hard-wired monitoring and BACnet network status monitoring.
- V. Simulate power outage and ensure automatic and orderly restart.
- W. Ensure the static pressure setting of the make-up water system is coordinated and that the entire system is under positive pressure throughout all modes of operation.
- X. Ensure the closed water loop chemical treatment report has been submitted at start-up and is in compliance with the chiller/heat pump manufacturer requirements.

3.9 BUILDING CHILLED WATER AND HEATING WATER LOOP CONNECTION

- A. Participants shall include: CxP, MC, TAB, and BMSC

- B. Sample: 100%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Open system bypass control valve, measure and record flow and pressure differential to the building.
- E. Command the system bypass valve to close and ensure adequate shutoff.
- F. In both the coupled and decoupled modes, enable automatic control of the building loop and trend performance. Make at least one step-change in the loop setpoint during the trend period.
- G. Check all modes of operation. Load and unload the chilled water system. In concert with chilled water system testing, check the close-off capability of the chilled water valves under light load conditions.
- H. Refer to 'Simultaneous Heating and Cooling Tests' in this section for methods of loading the chilled water system.
- I. Refer to 'HVAC Systems Pumps' for pump testing. Additionally, with a fixed setpoint on the building valve control loop, establish a trend on the pump control loop. Observe normal control function. Introduce one setpoint step-change and observe response.
- J. Change setpoint to cause a change between coupled mode and decoupled mode and back. Observe system performance. Trend all values and print trend for documentation.
- K. Verify terminal valves ability to close-off at peak differential pressures.

3.10 DOMESTIC ELECTRIC HOT WATER HEATER AND SYSTEM

- A. Participants shall include: CxP, MCP and BASC.
- B. Sample: 100% of water heaters and 50% of outlets; Max Failure Limit: 20%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation and TAB report.
- E. CxP shall review the installation against the manufacturer's installation instructions.
- F. Verify that the piping system has been pressure-tested.
- G. Verify that domestic piping has been disinfected. For all potable systems, MC shall take a new water sample and have it analyzed.
- H. Contractor shall start the electric water heater and circulating pump.
- I. Refer to 'HVAC Systems Pumps' for pump testing.
- J. Verify that flow is established by the circulating pump.

- K. Change the water heater setpoint to force stages of the electric heating element to be energized and de-energized. Record amperage draw in each leg each element and compare to overload setting and manufacturer expectations.
- L. Check capacity and recovery capabilities of the water heater with temperature measurements while applying load on the system by turning on water supplies.
- M. Check calibration of remote setpoint indication.
- N. For thermostatic mixing valve, verify the installation meets the design and manufacturer's requirements specifically in terms of piping configuration. Verify valve maintains adjusted leaving water temperature setpoint at minimum and maximum load conditions.

3.11 AIR HANDLING UNIT (AHU)

- A. Participants shall include: CxP, MC, TAB, and BASC.
- B. Sample: 100%, Max Failure Limit: 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation and TAB reports.
- E. CxP to verify installation matches manufacturer's and project requirements.
- F. Verify access into all compartments and componets necessary to be reached for service, operation or maintainence is available. Verify filter banks are accessible, filters can be removed, fans and fan motors are accesible and can be replaced.
- G. Verify automatic start/stop of fan and open/close of all air damper(s).
- H. Start heating and cooling system, manipulate control device to obtain maximum cooling and heating and airflow. Measure temperatures and pressures to determine capacity. If necessary for increasing cooling and heating loads, manipulate controls to provide simultaneous heating and cooling within the air handlers to support the testing of the air-cooled chiller and heat pump.
- I. Weather permitting, cause all applicable modes of operation using false loading where practical. Check proper sequence for switching modes and proper operation within a mode.
- J. Check calibration of control devices and for stable control response and component performance including chilled water coils, hot water coils, steam coils, humidifiers, economizer cycles, and others. Ensure proper coordination of control loops and that no fighting or energy wastes result.
- K. Check for free and adequate flow of cooling coil condensate. Condensate should fall into pan and not be sucked into airflow path or other areas of AHU. AHU condensate pan should be sloped to allow for gravity condensate drainage. Verify condensate trap is installed for draw thru or blow thru fan as applicable.
- L. For variable speed fans, manipulate air terminal units to change flow conditions and observe control response. Ensure stable control response to step-change in flow conditions. Manually ramp fan speed from minimum to maximum to ensure stable operation of fans. Record

representative part load output from the drive. Check calibration of control input. Check drive bypass operation if applicable.

- M. For supply fan wall, operate terminal units to allow for design flow operation. Compare operational condition with manufacturer design condition with all fans operational and with a fan(s) offline.
- N. For supply and exhaust fan wall, disable one fan cube with overload relay and confirm vertical backdraft damper closes fully on the fan cube with the simulated fan failure. Verify all other fan cube vertical backdraft dampers are installed stroking them through their full range of motion with fans on and off.
- O. For supply fan wall with airflow ring and pressure transducers built in for airflow monitoring, verify all individual airflow monitoring stations are installed and functional. During TAB work, verify flow measurements are reasonably close to total system flow measurements by TAB contractor, within +/- 10%.
- P. Ensure minimum required ventilation rates are maintained across the full range of control (where applicable).
- Q. Verify interlocks with exhaust fan wall where applicable. For exhaust fan wall, verify fan control strategy for fan wall speed control.
- R. Test proof alarming where applicable.
- S. Test operation of applicable safeties including high and low static devices, smoke detection, duct humidity, and others. Check AHU component status in each event.
- T. Check system status and operation in the Off, Unoccupied, and Occupied modes of operation. Validate proper start up and shut down sequences.
- U. Simulate power outage and ensure automatic and orderly restart.

3.12 IDF/ELEVATOR MACHINE ROOM FAN COIL UNIT (AIR-COOLED DX)

- A. Participants shall include: CxP, MC, TAB, and BASC.
- B. Sample: 50%, Max Failure Limit: 10%
- C. CxP shall review Start-Up Documentation and TAB reports.
- D. Cx shall review installation to confirm it meets all requirements.
- E. Verify automatic start/stop of fan.
- F. Start cooling system (as applicable), and manipulate control device to obtain maximum cooling capacity. Measure temperatures and flow rates to determine capacity.
- G. Verify automatic space temperature control is functional and space temperature setpoint is maintained at all times.
- H. Check proper operation and charge of refrigerant circuit.

- I. Confirm compressor cycling is within allowable frequency.
- J. Confirm refrigerant piping is installed for adequate oil return and insulated where necessary.
- K. Check calibration of control devices and for stable control response and component performance including electric reheat coils, humidifiers, and others. Ensure proper coordination of control loops and that no fighting or energy wastes result.
- L. Check for free and adequate flow of cooling coil condensate. If gravity drain, verify proper piping slope and sizing. If condensate pump application, pour water into pump and verify proper operation of pump and drain system.
- M. Ensure minimum required ventilation rates are maintained to the room.
- N. Check for adequate air distribution to outlets. Ensure outlets are placed properly per shop drawings.
- O. Test proof alarming. Where applicable, verify interface between unit's packaged controls and BMS.
- P. Test operation of applicable safeties including refrigerant pressure safeties, condenser flow interlocks, smoke detection, humidity cutouts, secondary pan float switch or water sensor, temperature cutouts and others. Check component status in each event. Verify proper alarming is indicated.
- Q. Check system status and operation in the Off, Unoccupied, and Occupied modes of operation. Validate proper start-up and shutdown sequences.
- R. Simulate power outage and ensure automatic and orderly restart.
- S. In winter, verify operation of low ambient heat rejection control of DX circuit.

3.13 VAV AIR TERMINAL (HVAC)

- A. Participants shall include: CxP, MC, TAB, and BASC.
- B. Sample: 25%; Max Failure Limit: 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation and TAB reports.
- E. Check the calibration of zone temperature sensors.
- F. Set boxes for both minimum and maximum flow (typically by setting the space temperature setpoint up and down) and check the calibration of the flow settings and boxes ability to measure and maintain flow setpoint.
- G. Check the stability of the zone temperature control loop for the damper and any associated heating devices by changing the space setpoints and observing the response.

- H. Cause all applicable modes of operation using false loading where practical. Check proper sequence for switching modes and proper operation within a mode.
- I. Determine the optimal settings for the control parameters.
- J. Simulate and test the unoccupied and any other applicable mode response of the VAV box.
- K. Check the capacity of the heating device where applicable.

3.14 RADIANT MANIFOLD AND SLAB

- A. Participants shall include: CxP, MC, TAB, and BMSC.
- B. Sample: 25%, Max Failure Limit: 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation and TAB reports.
- E. Verify TAB reported data including circuit setter model/size and setting. Modulate valve(s) open and record circuit setter DP. Compare to TAB report.
- F. Verify automatic control of isolation CHW and HW valve connection to radiant manifold.
- G. Start heating and cooling systems, manipulate control device to obtain maximum cooling and heating.
- H. Weather permitting, cause all applicable modes of operation using false loading where practical. Check proper sequence for switching modes and proper operation within a mode.
- I. Check calibration of control devices and for stable control response.
- J. Simulate power outage and ensure automatic and orderly restart.
- K. Verify changeover for four-pipe systems as applicable.

3.15 FAN/AIR SYSTEM

- A. Participants shall include: CxP, MC, TAB, and BMSC.
- B. Sample: 25%, Max Failure Limit: 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. CxP shall review Start-Up Documentation and TAB reports.
- E. Verify start/stop control sequences.
- F. Check the capacity of the fan at maximum conditions.

- G. Cause all applicable modes of operation using false loading where practical. Check proper sequence for switching modes and proper operation within a mode.
- H. For variable speed fans, manipulate system or controls and ensure stable control response to step-change in flow conditions. Manually ramp fan speed from minimum to maximum to ensure stable fan operation. Record representative part-load output from the drive. Check calibration of control input. Check drive bypass operation if applicable.
- I. Verify interlocks with exhaust fans where applicable.
- J. Test proof alarming where applicable.
- K. Simulate failures of fans and ensure proper start-up of backup fans.
- L. Test operation of applicable safeties including high and low static devices, smoke detection, duct humidity, and others.
- M. Simulate power outage and ensure automatic and orderly restart.

3.16 BUILDING MANAGEMENT SYSTEM (BMS)

- A. Participants shall include: CxP and BMSC
- B. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- C. CxP shall review Start-Up Documentation and I/O checkout page entries.
- D. Controls system sampling will typically correspond to the sampling rate of a system or piece of equipment. These sampling rates are indicated above for the respective item.
- E. Operate the equipment and subsystems through all specified modes of control and sequences of operation including full and part load conditions, and emergency conditions.
- F. Verify that equipment operates in accordance with design intent and approved control diagrams. This shall include checking the operation of dampers, valves, smoke detectors, high and low limit controls, of a sample of 25% of components with a maximum failure limit of 10%.
- G. Analog Input (AI) Sensors: (at a sample of 50% of the inputs on the sampled devices (see above for device samples) with a maximum failure rate of 10%). Spot-check AI sensors (space temperature sensors, outside, return, and mixed air temperature sensors, discharge air temperature sensors, chilled water and hot water temperature sensors, and humidity sensors, air and water differential pressure sensors, airflow monitoring stations, etc.) for acceptable accuracy (which is generally as specified for the device).
- H. Analog Outputs - Valves, Dampers and Actuators: (at a sample of 50% of the inputs on the sampled devices (see above for device samples) with a maximum failure rate of 10%) Ensure that valves and dampers and their actuators close-off or seal against the maximum pressure differential. Ensure that the actuators stroke throughout the correct range (correlated with the programmed range) under operations pressures anticipated and that the positioners are set correctly where applicable.

- I. Trends: Establish trends of control system points for a minimum of a two-week period prior to and throughout the Acceptance period. Trends shall be analyzed to identify any control problems, lack of capacity, control loops fighting or unstable, or other operational anomalies. Historian shall be enabled for all trends such that they are stored in the temporary server until the project is complete. Sampling rates shall be coordinated with CxP.
- J. Automatic Switches: Spot-check (at a sample of 50% of the inputs on the sampled devices (see above for device samples) with a maximum failure rate of 10%) the operation of all automatic switches (pressure switches, current switches, flow switches, and others) to ensure that they are adjusted to proper make and break settings.
- K. Verify the standalone functionality of the controllers. Typically, this will involve disconnecting LAN communication wiring and ensure that the controller functions properly and that the loss of communication is acknowledged by the interface. Restore communications and ensure an orderly restoration to normal control.
- L. Verify that the BMS interface, BMS software, graphics and functions are in accordance with design intent and approved control diagrams.
- M. Check dial-in communications and internet access where applicable to ensure functionality.

3.17 15KV PRIMARY SWITCH

- A. Participants shall include: CxP and EC.
- B. Sample: 50%, Failure Limit 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. Inspect the labeling and ensure it is in conformance with the contract documents.
- F. Review short circuit coordination study and the Electrical Testing Agency Report.

3.18 NETWORK TRANSFORMERS (LIQUID FILLED)

- A. Participants shall include: CxP and EC
- B. Sample: 100%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. Review the Independent Electrical Testing Agency report (as applicable).
- F. Review thermographic images (as applicable).
- G. Measure current, voltage and harmonics under peak load conditions.

3.19 NETWORK PROTECTORS

- A. Participants shall include CxP and EC.
- B. Sample: All
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. As applicable, review the Independent Electrical Testing Agency report.
- F. Refer to Building Power Outage Test.

3.20 BUS DUCTS

- A. Participants shall include CxP and EC.
- B. Sample: 100%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. As applicable, review the Independent Electrical Testing Agency report

3.21 SWITCHGEAR

- A. Participants shall include CxP and EC.
- B. Sample: 100%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. Inspect the labeling and ensure it is in conformance with the contract documents.
- F. Review short circuit coordination study and the Electrical Testing Agency Report.
- G. Test the manual operation of the protective relaying and ensure reliable reset.
- H. Test the mechanical (key) interlocks for generator and service switchgear as applicable.

3.22 DISTRIBUTION TRANSFORMERS-DRY TYPE

- A. Participants shall include: CxP and EC.
- B. Sample: 10%; Failure Limit 10%

- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. Review the Independent Electrical Testing Agency report (as applicable).
- F. Review thermographic images (as applicable).

3.23 DISTRIBUTION PANELBOARDS AND ASSOCIATED LOADS

- A. Participants shall include: CxP and EC.
- B. Sample: 10%; Failure Limit 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review Start-Up Documentation.
- E. Review the Independent Electrical Testing Agency report (as applicable).
- F. Spot-check phase balance. Ensure proper, thorough, and accurate identification of load. Trip breakers and validate load identified. Test GFI breakers.
- G. Circuit Labeling Test – Connected Equipment (excluding Lighting): Check labeling of circuits with connected equipment by opening circuit breaker and inspecting equipment shutdown or by measuring loss of power at the equipment. Check labeling for consistency with existing facilities and/or record drawings.
- H. Circuit Labeling Test – Receptacles and Lighting: Panelboard circuit labeling and grounding continuity shall be verified (up to 10% of circuits in each panel).
- I. Receptacle Polarity Test: Spot-check receptacles installed or reconnected under this contract with a receptacle circuit tester. Tester shall test for open ground, reverse polarity, open hot, open neutral, hot and ground reversed, hot or neutral and hot open.
- J. As applicable, review the Independent Electrical Testing Agency report.

3.24 GROUND-FAULT RECEPTACLE CIRCUIT INTERRUPTER TESTS

- A. Participants shall include: CxP and EC.
- B. Sample: 100%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Test each receptacle or branch circuit breaker having ground-fault circuit protection to assure that the ground-fault circuit interrupter will not operate when subjected to a ground-fault current of less than 4 mA and will operate when subjected to a ground-fault current exceeding 6 mA. Perform testing using an instrument specifically designed and manufactured for testing ground-fault circuit interrupters. 'TEST' button operation shall not be acceptable as a substitute for this test. Replace

receptacles that do not shutoff power with 5/1000 of an ampere within 1/40th of a second and retest. Submit test report signed by the Test Engineer who performed this test.

3.25 TIE BREAKERS

- A. Participants shall include: CxP and EC.
- B. Sample: 50%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Test operation by opening normal breakers. Record timing parameters of breaker closure and coordination with other breakers.
- E. Test manual tie operation and key lock out.

3.26 LIGHTING AND LIGHTING CONTROL SYSTEM

- A. Participants shall include: CxP and EC.
- B. Sample: 100%, Failure Limit 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Witness specified Factory-Certified Start-Up Tests and demonstrations.
- E. Spot-check the lighting systems Start-Up Documentation and ensure that the all luminaires and lamps are operational and fixtures are clean.
- F. Spot-check occupancy sensor placement and test reliability of activation/deactivation.
- G. Test photocells for functionality and accuracy.
- H. Spot-check switches to ensure proper operation and circuiting.
- I. Spot-check lighting schedules to ensure they are programmed per the Design Engineer's direction.
- J. Spot-check lighting levels to ensure compliance with IES and/or the design requirements for the respective occupancy.
- K. Test operation of circuits by changing system Date and Time to cause various circuits to switch modes. For rooms with occupancy sensors, validate the circuit energizes with occupancy in the space after the lights have been swept off. Test warning flicker prior to off sweep. Test cleaning and shed features.
- L. Test operation of daylight dimming control system if applicable. Ensure lights are banked parallel to the daylight source.

- M. For exterior fixtures, simulate 'Night Mode' to validate function. Measure and record light level to ensure they meet the requirements and are generally provide adequate security. Check for excessive light level fluctuations or dark spots.

3.27 ELECTRIC DIGITAL POWER METERS

- A. Participants shall include CxP and EC (Time required will be dictated by certifying agencies).
- B. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- C. Witness specified testing, demonstrations and other commissioning activities.
- D. Review start up documentation.
- E. Test all functions as outlined in specification 26 27 13.
- F. Verify interfaces with all other inter-related systems or equipment.

3.28 TRANSIENT VOLTAGE SURGE SUPPRESSOR

- A. Participants shall include: CxP and EC.
- B. Sample: 10%, Failure Limit 10%
- C. FPT shall include 'Common Elements for All Systems' (above) to the extent applicable.
- D. Review the installation documentation from the Electrical Testing Agency.
- E. Spot-check installation and device placement for conformance with the design documents.

END OF SECTION 01 91 10