

**San Mateo County – Project Development Unit
New South San Francisco Campus Project**

DOCUMENT 01 3300

SUBMITTALS

ARTICLE I - GENERAL

1.01 Summary

- A. This Document includes:
1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - a. 1.03 – Definitions
 - b. 1.04 – Scheduling
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 4. Article IV – Forms (Not Used)

1.02 RELATED DOCUMENTS AND SECTIONS (Not used)

1.03 GENERAL REQUIREMENTS FOR SUBMITTALS

- A. General.
1. Shop Drawings, Product Data, Samples and similar Submittals are not Contract Documents. Their purpose is to demonstrate those portions of the Work for which Submittals are required and the way the Contractor proposes to conform to the information provided and the design concept expressed in the Contract Documents.
 2. All Submittals are instruments of Contractor. By submitting Shop Drawings, Product Data, Samples and similar Submittals, Contractor represents that the Contractor has determined and verified materials, construction methods, field measurements and related field construction criteria, coordinated the Work of the Subcontractors, and has checked and coordinated the information contained within the Submittal with the requirements of the Contract Documents and other Submittals.
 3. Owner's review of Submittals is for general compliance with the requirements of the Contract Documents. Contractor is solely responsible for all quantities, dimensions, weights, gauges, materials, Fabrication processes, construction methods, coordination with the Work of other trades, and construction safety precautions. Owner's review does not relieve the Contractor of responsibility for errors and omissions in the Submittals or from responsibility for proper fitting and construction of the Work, nor from furnishing materials and Work required by Contract Documents that may not be indicated or shown on the Submittal(s).
 4. Owner's review of Contractor's Submittal(s) does not relieve Contractor of any responsibilities for the successful completion of the Work in conformity with the requirements of the Contract Documents. The Owner may reject any defective Work notwithstanding any review or previous acceptance of a Submittal associated with the Work.
 5. The Contractor is not relieved of the responsibility for any deviation from the requirements of the Contract Documents by Owner's review of Submittals unless the Contractor has specifically informed Owner, in writing, of such deviation at the time of Submittal, and Owner has provided specific written consent to each specific deviation. Making notations on the Submittal of proposed deviation is not sufficient to satisfy this requirement. Each proposed

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deviation must be clearly noted on the Submittal and separately itemized and explained in writing in the transmittal accompanying the Submittal. For each Submittal, the Contractor must indicate that the Submittal contains “**No Deviations**” or itemize the proposed deviations on the transmittal accompanying the Submittal. This written list of deviations is in addition to any indications or marks on the Shop Drawings, Product Data, Coordination Drawings, Samples, or other Submittals indicating the proposed deviations.

6. No Work requiring Submittals shall be performed until Owner has accepted the pertinent Submittals. Where a Submittal is required, any related Work performed before the Owner’s review and acceptance of the Submittal will be at Contractor’s sole risk, expense and responsibility.
 7. Except as otherwise specifically stated in the Contract Documents or specifically Approved by Owner’s Project Manager, all required Pre-construction Submittals must be submitted within twenty (20) Days after the start date for the Work as stated in the Notice to Proceed. General acceptance of the Contractor’s Progress Schedule, Submittal Log, or other related submittals by the Owner does not constitute specific Approval by the Owner’s Project Manager for deviation from the 20 Day cut-off date for Pre-construction Submittals. Contractor must make a specific request in writing for each proposed deviation and the Owner’s Project Manager must grant specific written Approval for each proposed deviation to the cut-off date.
 8. When certification of materials, systems or equipment is required by the Contract Documents, Design Professional and Owner are entitled to rely upon the accuracy and completeness of such certifications and the calculations and other professional analysis supporting the certifications.
 9. When descriptive catalog designations, including Manufacturer’s name, product brand name, or model number(s) are referred to in the Contract Documents, such designations shall be considered as being those found in industry publications of current issue at date of Notice to Proceed.
 10. Contractor must allow sufficient time for reviews, revisions and resubmittals to avoid delays in the Work. No extension of the Contract Time will be authorized because of failure to transmit Complete Submittals enough in advance of the Work to permit processing within the timeframes allowed by Contract. Contractor is responsible for all costs of delays caused by Submittals that are tardy or are not Complete Submittals.
 11. Submittals not required by the Contract Documents will not be reviewed and will “Returned Without Action” or may be discarded.
 12. If a returned Submittal is required to be resubmitted more than once due to Contractor’s failure to comply the Submittal requirements, Contractor may be charged all costs associated with re-review of the Submittal. The charges may be deducted from progress payments due or to become due to the Contractor.
 13. Do not highlight pertinent Submittal information with markings that turn opaque when copied. Improperly highlighted Submittals may be returned to Contractor “Returned Without Action.”
- B. Contractor’s Responsibilities.
1. Contractor must, at its own expense, provide for Owner’s review all Submittals required by the Contract Documents.
 2. If a Submittal deadline submission date is not stated in the Contract Documents for a specific Submittal or group of Submittals, make the Submittal or group of Submittals far enough in advance to avoid any Critical Path delay to the CPM Progress Schedule.
 3. Before submission, Contractor must:
 - a. Determine and verify all field dimensions and conditions.
 - b. Verify and correlate all dimensions in the Contract Documents with field dimensions and conditions.
 - c. Verify materials, catalog numbers and similar data.
 - d. Coordinate Contractor’s Work with that of Subcontractors.
 - e. Coordinate the Work of the Subcontractors Work with that of each other.

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- f. Review and coordinate all Subcontractors' Submittals with the requirements of the Contract Documents.
 - g. Review and coordinate all Submittals with Submittals previously accepted by the Owner.
 - h. Coordinate as required with all public agencies involved.
 - i. Secure necessary approvals from public agencies and others and signify by stamp or other means that they have been secured.
 - j. Verify the feasibility of the construction methods.
 - k. Coordinated the Submittal with Construction safety precautions.
 - l. Review and coordinate all Contractor's Submittals with the requirements of the Contract Documents.
4. Submittals must be provided to the Owner in both hardcopies and an electronic format, as identified below in Paragraph C below. Complete Submittal(s) for each Definable Feature of Work and must not be submitted piecemeal. Owner has the right to withhold action on partial Submittals until the missing Submittal items are received, or return the partial Submittal to the Contractor "Returned Without Action." At Owner's sole discretion, the Owner may agree to review a Contractor's partial Submittal. If the Owner agrees to review a Contractor's partial Submittal, and the submittal is marked "No Exceptions Taken," or "Make Corrections Noted" the Owner's acceptance of the partial Submittal subject to its compatibility with future Submissions and additional partial Submissions for portions of the Work not covered in the reviewed partial Submission and does not constitute acceptance of the deletion of specified or required items not shown in the partial Submission.
 5. Coordinate submission of Submittals for related parts of the Work so the Submittals may be reviewed concurrently. Owner has the right to withhold action on a Submittal requiring coordination with other Submittals until related Submittals are received.
 6. Prior to Submission to the Owner, Contractor must certify all Submittals for compliance with the requirements of the Contract Documents. The Owner and Owner's Consultants are entitled to rely upon the Contractor's certification and the accuracy and completeness of the Contractor's efforts supporting such certification.
 7. Contractor must resubmit Submittals as required until Owner's acceptance is obtained.
 8. Contractor must make any required corrections and resubmit corrected Submittals until achieving acceptance.
 9. Unless otherwise specifically stated in the Contract Documents, Contractor must resubmit Submittals requiring resubmission within seven (7) Days of return of Submittal by Owner.
 10. On resubmittals, clearly indicate all revisions, changes, and deviations from the original Submittal. This includes directing specific attention, in writing, to revisions other than those requested by the Owner on previous Submittals.
 11. Contractor must include answers to any questions or clarifications required by Subcontractors and/or Suppliers.
- C. Submittal Copies.
1. If the required number of Submittal copies are not established or summarized in specific sections of the Contract Documents, Contractor must provide the number of copies indicated below. Scanned reproductions must be clearly identified and legible or will be rejected.
 - a. Three (3) hardcopies and an electronic copy of each (provided on Flash Drives) :
 - i. Shop Drawing
 - ii. Coordination Drawing
 - iii. Erection plan
 - iv. Equipment installation plan
 - v. Record Drawings (as-built)
 - b. Three (3) hardcopies and an electronic copy of each (provided on Flash Drives):
 - i. Product Data sheet
 - ii. Manufacturer, Vendor, or Subcontractor Certification
 - iii. Catalog cut
 - iv. Operation and Maintenance Data

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- v. Qualifications
 - vi. Laboratory Test Reports
 - vii. Owner Demonstration and Training Materials including Videotapes
 - viii. Quality Control Plan
 - ix. Solid Waste Management Plan
 - x. Storm Water Pollution Prevention Plan (SWPPP)
 - c. Three (3) hardcopies and an electronic copy of each (provided on Flash Drives):
 - i. Fire Protection Plan
 - d. Three (3) hardcopies and an electronic copy of each (provided on Flash Drives):
 - i. Incident Reports
 - ii. Accident Reports
 - iii. Progress Schedules
 - iv. Project Manual (as-built)
 - v. Hazardous Waste Manifests
 - vi. Permits
 - vii. Cost Breakdown
 - viii. Survey Records
 - ix. Dispute documentation
 - x. Certified Claim (original signature required on each claim certification)
 - e. Three (3) hardcopies and an electronic copy of each (provided on Flash Drives):
 - i. Sample
 - ii. Payment Application
 - iii. Material On Hand Payment Request
- D. Minimum Submittal Review Times.
- 1. Time for review shall commence on Owner's receipt of a Complete Submittal.
 - 2. Time for review shall end on Owner's return of Submittal.
 - 3. Allow at least twenty-one (21) Days for Owner's review and return following Owner receipt of a Complete Submittal.
 - 4. Allow additional time if processing must be delayed to permit coordination with subsequent Submittals. Owner will advise Contractor when a Submittal being processed must be delayed for coordination.
 - 5. Allow at least twenty-one (21) Days for Owner's review and response to resubmittals.
- E. Action & Distribution.
- 1. When "No Exceptions Taken" is indicated, Contractor may proceed with Fabrication, Manufacture, or construction, providing such Work complies with the requirements of the Contract Documents.
 - 2. When "Make Corrections Noted" is indicated, Contractor may proceed with Fabrication, Manufacture, or construction, providing such Work complies with the requirements of the Contract Documents and the corrections noted. The above two categories are considered as accepted Submittals.
 - 3. When other notations are indicated, Contractor is advised that no Work shall be Fabricated, Manufactured, or constructed, and Contractor must make a revised submission.
 - 4. Contractor must promptly distribute copies of the accepted Submittals to its Subcontractors, Suppliers, vendors, Fabricators and/or Manufacturers as applicable.
 - 5. Submittals received from sources other than through Contractor's office will be "Returned Without Action" or may be discarded.
 - 6. Submittals that are not required by the Contract Documents may be returned to the Contractor "Returned Without Action" or may be discarded.
 - 7. Informational Submittals, on which Owner is not required to take action, will not be returned to the Contractor.
- F. Use for Construction.
- 1. Use only final Submittals with mark(s) indicating acceptance by Owner or Designer of Record.

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2. No portion of Work requiring Submittals shall be commenced until Owner or Designer of Record, on the Owner's behalf, has accepted the Submittal.
3. Contractor must Fabricate, construct and furnish all Work in accordance with the accepted Submittals.
4. Contractor must immediately upon receipt from Owner, distribute Owner accepted Submittals to all parties concerned.
5. Contractor must keep at least one (1) copy of each accepted Submittal at the job site.

1.04 General Requirements for Shop Drawings

- A. Contractor must furnish Shop Drawings for temporary work and methods of construction such as formwork, falsework, and for other temporary work and methods of construction Contractor proposes to use.
- B. Contractor must Furnish scaled drawings showing how the Work of all trades (HVAC, plumbing, fire protection, electrical, etc.) will coordinate to form a complete Installation, and where Work affects existing buildings or parts thereof, and/or existing utilities.
- C. Present Shop Drawings in a clear and thorough manner. Identify details by reference to sheet and detail, schedule, and room numbers shown on Drawings.
- D. Please follow the requirements of Document 00 3350 (BIM/Project Coordination) for any BIM submissions or other requirements needed for project coordination.

1.05 General Requirements for Coordination Drawings

- A. The Contract Documents indicate general arrangement and location of the various systems and elements of Work. Final locations, elevations, clearances, etc., are governed by actual equipment and material Provided by Contractor and by actual building conditions.
- B. Before Work is Installed, Contractor must carefully examine the Contract Documents, Submittals, and Shop Drawings relating to the entire Work with each other and the actual building conditions and verify that the Work will be accommodated in spaces provided.
- C. Contractor must prepare Coordination Drawings when:
 1. Limited space is available for installation of different components
 2. Coordination is required for installation of products and materials Fabricated by separate entities.
 3. The relationship of components is shown on separate Shop Drawings.
 4. Coordination Drawings are specifically required by other sections of the Project Manual.
 5. Please follow the requirements of Document 00 3350 (BIM/Project Coordination) for any BIM submissions or other requirements needed for project coordination.

1.06 General Requirements for Samples

- A. Contractor must submit without charge such Samples as may be required by the Contract Documents.
- B. Unless a greater quantity is required elsewhere in the Contract Documents, three (3) of each required Sample must be Submitted
- C. Tags or labels shall be securely affixed to samples and contain as a minimum, the following information: Project Name, Contractor's Name, Contract Title and Number, Date, Transmittal Number, Product Manufacturer's or Fabricator's Name, trade name, lot style, color, model, etc., locations of use, and Contract Document reference.
- D. Owner will retain one of each Sample.
- E. Contractor must not use any materials or equipment for which Samples are required to be submitted until Owner has performed such Submittal review, save only at Contractor's risk and expense.
- F. Owner's review of any Sample is only for the characteristics thereof or for the uses named in such review and no other. Owner's acceptance of any Sample is not a modification or change of any requirements of the Contract Documents. Upon Owner's acceptance of any Sample or material,

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no additional Sample of that material will be considered and no change in brand or make is permitted.

- G. Where variation in color, pattern, texture or other characteristic is inherent in the material or product to be Provided, the Contractor must Submit at least 3 multiple units that show approximate limits of the variations. Installed items or materials exceeding the variation of the accepted samples are considered defective Work.

1.07 General Requirements for Substitutions

- A. Whenever in the Contract Documents any material, product, thing, or service is indicated or specified by grade, patent, brand, trade or proprietary name, or by Manufacturer, such specifications shall be followed exactly.
- B. The Contractor may submit a proposal for Alternative material, product, thing, or service within thirty-five (35) Days after the official start date stated in the Notice to Proceed. At the sole discretion of the Owner's Authorized Representative, Owner may give written consent to the submission of a Product Substitution request after expiration of the thirty-five (35) Day time limit. See Document 01 6300 (Product Substitution Procedures) for requirements.
- C. If the material, product, thing, or service offered by Contractor is not, in the opinion of the Owner's Authorized Representative, substantially equal or better than that specified, then Contractor must furnish that material, product, thing, or service specified or one that in the opinion of the Owner's Authorized Representative is substantially equal or better in every respect.
- D. The burden of proof as to the equality of any material, product, thing, or service Contractor proposes for Product Substitution is the responsibility of the Contractor.
- E. The opinion of the Owner's Authorized Representative of the substantial equality or superiority of any material, product, thing, or service proposed for substitution will be based on but not be limited to consideration of such factors as: physical characteristics of weight, gauge, composition, hardness, toughness, ductility, durability, brittleness, etc., as compared to the specified item, or as delineated in the Contract Documents; dimensional compatibility with the materials it combines with to produce a unified design system; compatibility with products in use by Owner elsewhere; all aspects of finished appearance including form, texture and color, that may affect other design elements; performance, functionality, and ease and economy of maintenance and operation. Owner's Authorized Representative will review and respond in writing to substitution submittals within twenty-one (21) Days after receipt of all information Owner requires to make a final determination.
- F. Owner will consider proposals for substitution of materials, Products, things, or services only when such proposals are accompanied by full and complete technical data, and all other information requested by the Owner is submitted, in order to evaluate the proposed Product Substitution. Owner may require substantiating documents to prove quality, delivery time, and cost. Burden of proof as to comparative quality, suitability, and performance of offered materials, Products, things, or services is the responsibility of the Contractor. Owner's Authorized Representative, after recommendation from Design Professional(s), will be the sole judge as to such matters. In the event Owner's Authorized Representative rejects the use of such Alternative(s) submitted, then one of the particular materials, Named Products, things, or services originally specified in the Contract Documents must be Provided.
- G. Contractor is responsible for all design and engineering costs, Submittal and resubmittal costs, and costs of associated changes, for the review and acceptance of all proposed and accepted Product Substitutions. Costs incurred by Owner for additional Design Professional and/or CM services to process, design, engineer or adapt Product Substitutions may be deducted from payments to Contractor.
- H. Installation of Substitutions
 1. Contractor must replace any substitution(s) installed without Owner's consent with the specified item(s) at Contractor's expense.

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2. Contractor must not proceed with any Product Substitution or change until Owner's Authorized Representative has completed all reviews, made recommendations and granted consent.
3. If Owner's Authorized Representative accepts a Product Substitution, Contractor must make all changes in the Work including changes to Contract and Record Documents at no additional cost to Owner.
4. If an accepted Product Substitution is more expensive than the specified material, process, or article Contractor must bear all additional costs of such material, process, or article so Provided.
5. If mechanical, electrical, structural, or other changes are required for the Installation or fit of Alternative materials, articles, or equipment, or because of deviations from Contract Drawings and Specifications, such changes must not be made without written consent of the Owner's Authorized Representative, and must be made without additional cost to Owner.

ARTICLE II - PRODUCTS (Not used)

ARTICLE III - EXECUTION

3.01. Definitions

- A. Action Submittals. Submittals requiring Owner or Designer of Record's written response.
- B. Informational Submittals. Submittals not requiring Owner or Designer of Record's written response. (Survey notes, CM Daily Report, Laboratory test reports, etc.)
- C. Preconstruction Submittals. Action Submittals and Informational Submittals requiring Owner's acceptance before Contractor may proceed with the installation of Work or the procurement of the materials and/or equipment covered by the Submittal.
- D. Schedule. Schedule preparation and processing of Submittals in accordance with other sections of the Contract Documents and the specific Submittal deadlines and timeframes stated in the Contract Documents. Unless a longer period is specifically stated in the Contract Documents, allow at least fifteen (15) Days for Owner's review and return of all Submittals and resubmittals.

3.02. Deviations

- A. Specifically identify each proposed deviation from the requirements of the Contract Documents.
 1. Only making notations on the Submittal is not sufficient to satisfy this requirement.
 2. Each proposed deviation must be clearly highlighted, encircled, noted, or otherwise clearly identified on the Submittal and individually explained in writing in the transmittal accompanying the Submittal.
 3. Making notations on the Submittal without the attached written explanation will not relieve the Contractor of responsibility for deviation from the requirements of the Contract Documents.
 4. Unless specific deviations have been noted in writing by the Contractor and specifically accepted in writing by the Owner or Designer of Record, no deviations from the requirements of the Contract Documents are permitted.
- B. If a Submittal contains no proposed deviation(s) from the requirements of the Contract Documents, the Contractor must indicate on the transmittal accompanying the Submittal that the Submittal contains "**No Deviations**" from the requirements of the Contract Documents.

3.03. Action Submittals

- A. Prepare and submit Action Submittals required by individual sections of the Project Manual.
- B. Product Data
 1. Collect information into a single Complete Submittal for each Definable Feature of Work and type of product or equipment.
 2. If information must be specially prepared for Submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 3. Mark each copy of each Submittal to show which Products and options are applicable.
 4. Include the following information, as applicable:

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- a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Diagrams showing factory-installed wiring, controls and piping diagrams.
 - g. Printed performance curves, performance characteristics and capacities.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operating and maintenance manuals.
 - k. Compliance with recognized trade association standards.
 - l. Compliance with recognized testing agency standards.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 - o. Show wiring, piping diagrams, controls.
- C. Shop Drawings.
- 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of Products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - m. Floor plans indicating points of attachment for support.
 - n. Identify details by reference to Drawing and detail, schedule, or room numbers shown and specified.
 - 2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 - 3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" (215 by 280 mm) but no larger than 36" x 48" (914 mm x 1219 mm).
 - 4. Contractor must review and coordinate all Subcontractors' Shop Drawings before submission to Owner. If required or needed, Contractor must prepare and submit Coordination Drawings.
 - 5. Submittals must be complete for each item of Work and must not be submitted piecemeal.
 - 6. Present Shop Drawings in a clear and thorough manner. Identify details by reference to sheet and detail, schedule, and room numbers shown on Drawings.
- D. Samples.
- 1. Each Sample must clearly note the manufacturer, trade name, product, lot style, color, model, etc., locations of use, and Contract Document reference.
- E. Coordination Drawings.
- 1. Contractor must prepared and submit drawings to demonstrate the coordination of methods, materials, equipment, plans, or sequence the Contractor proposes to use when:
 - a. Coordination Drawings are specifically required by other sections of the Project Manual.
 - b. Limited space is available for installation of different components.
 - c. Coordination is required for installation of Products and materials Fabricated by separate entities.
 - d. The relationship of components is shown on separate Shop Drawings or Submittals.
 - 2. Coordination Drawings must be submitted in the format required for Shop Drawings.

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3. Please follow the requirements of Document 01 3120 (Building Information Modeling (BIM) and Coordination Drawings) for any BIM submissions or other requirements needed for project coordination.

3.04. Informational Submittals

- A. Prepare and submit Informational Submittals required by other section of the Project Manual.
- B. Material Certificates. Prepare written statements on manufacturer's letterhead certifying that material complies with the requirements of the Contract Documents. An officer or other individual authorized to sign documents on behalf of that entity must sign certificates and certifications.
- C. Material Test Reports. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with the requirements of the Contract Documents.
- D. Pre-construction Test Reports. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- E. Field Test Reports. Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with the requirements of the Contract Documents.
- F. Maintenance Data. Prepare written and graphic instructions and procedures for operation and normal maintenance of Products and equipment.
 1. Comply with the close-out requirements set forth in the Contract Documents.
- G. Manufacturer's Instructions. Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment.
 1. Include name of product and name, address, and telephone number of manufacturer.
 2. Include the following, as applicable:
 - a. Preparation of substrates.
 - b. Required substrate tolerances.
 - c. Sequence of installation or erection.
 - d. Required installation tolerances.
 - e. Required adjustments.
 - f. Recommendations for cleaning and protection.
- H. Manufacturer's Field Reports. Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that Products at Project Site comply with the requirements of the Contract Documents.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, Products, and installation will affect Warranty/Guarantee.
 7. Other required items indicated in individual sections of the Contract Documents.

3.05. Identification

- A. Place a permanent label, or title block on each Submittal for identification.
 1. The label or title block must include:
 - a. Project name and number
 - b. Date
 - c. Name of Contractor

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- d. Unique Submittal identifier, including revision number
 - e. As appropriate:
 - i. Name of Subcontractor
 - ii. Name of Supplier
 - iii. Name of Manufacturer
 - iv. Name of Fabricator
 - f. Number and title of appropriate section of the Project Manual
 - g. Drawing number and detail references, as appropriate
 - h. Name of firm or entity that prepared each Submittal.
- B. Contractor must provide a space approximately 3" x 3" on label or beside title block of each page of each Submittal to record review markings and action taken by Owner or Designer of Record.
- C. Contractor must number all Submittals serially and continue in sequence. Resubmittals must have suffix letter A, B, C, etc. following the original Submittal number.

3.06. Certification

- A. After Contractor's review of each Submittal for compliance with the requirements of the Contract Documents:
- 1. Mark with certification stamp before submitting to Owner or Designer of Record.
 - 2. Include Project name, Specification section, Contractor's signature, and date of certification.
 - 3. The Contractor's Authorized Representative must wet sign and date the certification.

3.07. Packaging, Transmittal And Distribution

- A. Packaging.
- 1. Collect individual Submittals into a Complete Submittal for each Definable Feature of Work
 - 2. Individual Submittals and Complete Submittal must be adequately wrapped or packaged to prevent damage during delivery.
 - 3. All reproducible drawings must be rolled and not folded.
- B. Transmittal.
- 1. Transmit each Complete Submittal via email (for electronic copies) and mail/hand delivery (for hardcopies).
 - a. Owner and Designer of Record may discard Submittals received from sources other than Contractor.
 - b. Owner and Designer of Record will not review Submittals that are not accompanied by Contractor's transmittal and will return them "Returned Without Action."
 - 2. On the transmittal, or a separate sheet attached to the transmittal prepared on Contractor's letterhead, record relevant information, requests for data, revisions, and each deviation from requirements of the Contract Documents, including minor variations and limitations.
 - 3. Transmittal Form. Provide the following information:
 - a. Project name and location.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Subcontractor's, Supplier's and/or manufacturer's name, address, and telephone number.
 - f. Submittal Distribution Group
 - g. Submittal Type
 - h. Reference to applicable sections or parts of the Contract Documents.
 - i. Reference to the appropriate Definable Feature of Work
 - j. Unique Submittal identifier, including revision number. Contractor must number all Submittals serially and continue in sequence. Resubmittals must have suffix letter A, B, C, etc. following the Submittal
 - k. Product identification or Shop Drawing title, number, revision and date as applicable.
 - l. Submittal and transmittal distribution record.

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- m. Itemize each proposed deviation from the requirements of the Contract Documents. If a Submittal contains no proposed deviation(s), indicate that the Submittal contains “No Deviations.” Owner and Designer of Record may return Submittals “Returned Without Action” that do not list proposed deviations or state that Submittal contains “No Deviations” from the Contract Documents.
 - n. Remarks.
 - o. Signature of transmitter.
 - C. **Parallel Distribution of Submittals**
 - 1. Contractor is required to make parallel distribution of Submittals to multiple Submittal reviewers.
 - 2. Contractor must, at its own expense, make parallel distribution of all Submittals.
 - 3. Submittals must be concurrently transmitted to all parallel reviewers.
- 3.08. Owner or Designer of Record’s Action**
- A. General.
 - 1. Owner will not review Submittals that do not bear the Contractor’s certification stamp and will return them “Returned Without Action.”
 - B. Action Submittals. Owner or Designer of Record will review each submittal, make marks to indicate corrections or modifications required, and return it.
 - 1. Owner or Designer of Record will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - a. Final Unrestricted Release: When “No Exceptions Taken” is indicated, Contractor may proceed with Fabrication, Manufacture, or construction, providing such Work complies with the requirements of the Contract Documents. Final acceptance will depend on that compliance.
 - b. Final-but-Restricted-Release: When “Make Corrections Noted” is indicated, Contractor may proceed with Fabrication, Manufacture, or construction, providing such Work complies with the requirements of the Contract Documents and the corrections noted. Final acceptance will depend on that compliance.
 - c. When stamped “No Exceptions Taken” or “Make Corrections Noted” the Submittal is considered “acceptable.”
 - d. Returned for Resubmittal: Where the Submittal is marked “Revise and Resubmit,” do not proceed with the Work covered by the Submittal, including purchasing, Fabrication, delivery, or other activity for the product Submitted. Revise or prepare a new submittal according to the Owner’s or Designer of Record’s notations and corrections.
 - e. Rejected: Where the submittal is marked “Rejected,” do not proceed with the Work covered by the submittal, including purchasing, Fabrication, delivery, or other activity for the product Submitted. Prepare a new Submittal for a product that complies with the requirements of the Contract Documents.
 - f. Incomplete: Where the submittal is marked “Submit Additional Information,” do not proceed with the Work covered by the Submittal. Prepare additional information requested, or required by the Contract Documents, that indicates compliance.
 - g. Returned Without Action: Where the submittal is marked “Returned Without Action,” it was not reviewed and Contractor must not proceed with the Work covered by the Submittal. Prepare a new Submittal that complies with the requirements of the Contract Documents.
 - A. Resubmittals. Contractor must make all required corrections and submit corrected resubmittals until achieving final acceptance.
 - B. Information Submittals. Information Submittals, on which Owner is not required to take action, will not be returned to the Contractor.
 - C. Submittals received from sources other than the Contractor will be “returned without action” or may be discarded.

ARTICLE IV - FORMS (Not Used)

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END OF DOCUMENT 01 3300

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DOCUMENT 01 3400

SAFETY SUBMITTALS

ARTICLE I - GENERAL

1.01. Scope

- A. Contractor shall prepare and submit written Safety Plans and Programs as specified herein prior to start of the Work. All written Safety Plans and Programs required to be submitted herein must be favorably reviewed by Owner prior to the Contractor starting Work.

1.02. Owner's Review of Submittals

- A. Neither Owner review of, nor comments on, any of the submittals shall constitute a representation of warranty as to compliance with any legal requirements. Owner reserves the right to reject all or portions of a submittal as inadequate to protect health, or safety. If conditions change, Contractor shall promptly update the Plans and Programs, as appropriate, and submit the revised Plans and Programs to Owner at no additional charge to Owner.

1.03. Plans and Programs

- A. Submit the following site-specifics, within the time period established in Document 00 5105 (Notice of Award) and, in any event, prior to starting Work:
1. Health and Safety Plan:
 - a. For Non-Hazardous Waste Operations:
Describe the health and safety hazards anticipated in performing the work, measures to be taken to reduce those hazards and to protect employees and the public. Include procedures for identifying and reporting unforeseen hazards.
 - b. For Potential Hazardous Waste Operations:
Describe the health and safety hazards anticipated in performing the work, measures to be taken to reduce those hazards and to protect employees and the public. Include procedures for identifying and reporting unforeseen hazards.
Identify an individual(s), either an employee or subcontractor, who is trained in accordance with CCR Title 8, Section 5192 (Cal/OSHA), Hazardous Waste Operations and Emergency Response (HAZWOPER), and who is qualified to identify potentially hazardous wastes or contaminated soils which might be encountered on the jobsite. Describe methods of identifying these materials and communicating the findings to Owner. The Plan does not need to comply with CCR Title 8, Section 5192 (Cal/OSHA).
 - c. For Identified Hazardous Waste Operations:
All aspects of the Health and Safety Plan shall comply with CCR, Title 8, Section 5192 (Cal/OSHA), Hazardous Waste Operations and Emergency Response. The Plan shall be signed by an individual Certified in the Comprehensive Practice of Industrial Hygiene (CIH) by the American Board of Industrial Hygiene and trained in hazardous waste site operations as required by Section 5192. If hazard conditions change, promptly update the Plan and resubmit to Owner, at no additional charge to Owner.
Include the following items:
 - 1) Training, medical, and respirator approval documentation for all employees who will work at the site.
 - 2) The names and addresses of the waste hauler and the landfill for hazardous waste.
 2. Asbestos Abatement Program in accordance with CCR Title 8, Section 1529 (Cal/OSHA):
Include the following items:

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- a. Registration with Cal/OSHA as an Asbestos Abatement Contractor, (required for removing more than 100 square feet of materials containing greater than 0.1 percent asbestos).
 - b. Notifications for asbestos work, including Cal/OSHA, the [Bay Area Air Quality Management] District, and, where appropriate, EPA Region IX.
 - c. Training, medical, and respirator approval documentation for all employees who will work at the site.
 - d. The identity of the Competent Person, as defined by Cal/OSHA.
A work plan to prevent asbestos fibers and debris being dispersed from the work area into the building or the environment, including diagrams showing:
 - 1) Staging of the project.
 - 2) Placement and number of negative air machines and exhausts.
 - 3) Staging of waste containers.
 - e. Weekly progress reports as the project progresses.
 - f. At project completion, documentation, including daily reports or logs, air monitoring results, waste manifests, and other similar pertinent information.
 - g. Material Safety Data Sheets for hazardous materials brought onto the site.
 - h. Procedures for identifying and reporting unforeseen hazards.
 - i. The names and addresses of the waste hauler and the landfill for asbestos waste.
3. The following items are required for the Lead Compliance Program in accordance with CCR Title 8, Section 1532.1 (Cal/OSHA):
- a. Training, medical, and respirator approval documentation for all employees who will work at the site.
 - b. The identity of the Competent Person, as defined by Cal/OSHA.
 - c. Material Safety Data Sheets for hazardous materials brought onto the site.
 - d. The Contractor's procedures for identifying and reporting unforeseen hazards.
 - e. The names and addresses of the waste hauler and the landfill for hazardous and non-hazardous wastes.
4. Storm Water Pollution Prevention Plan (SWPPP) including:
- a. A site map identifying storm drain inlets.
 - b. Identification of potential sources of pollution.
 - c. A plan to eliminate non-storm water discharges such as wastewater, spills, and others.
 - d. Best Management Practices (BMP) to minimize discharges of pollutants in storm water runoff.
 - e. How agencies and Owner will be notified in case of spills.
5. Compliance with State General Construction Activity Storm Water NPDES Permit, including:
- a. Development of a Storm Water Pollution Prevention Plan that complies with all requirements of the General Construction Activity Storm Water Permit.
 - b. Development of a color-coded site map showing:
 - 1) Areas of soil disturbance that have been stabilized.
 - 2) Areas to be graded, in addition to a time schedule.
 - 3) Areas of potential soil erosion where control practices will be implemented (Indicate the control practices and time schedule for implementation).
 - 4) Locations of post-construction projects (i.e., ponds, grassy swales, detention basins).
 - c. Development of a Site Inspection Checklist.
 - d. Submittal of the Site Inspection Checklist on a weekly basis.
6. Disposal of Fluorescent Lights and/or Ballasts Plan, as applicable.
7. Soil and Groundwater Management Plan:

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Describe how any disturbed soil or collected water will be handled, including temporary storage, testing and/or treatment, and disposal. Identify all activity where potential exists for waste to be generated, including materials associated with the destruction of monitoring wells. Where feasible, excavated soil from utility trenching may be placed back within the utility corridor near the original excavation.

Soil that cannot be placed back in the utility trench, and waste generated from other activities shall be tested by the Contractor as per General Conditions, Article 14.1, Alterations, Modifications and Force Account Work. The Contractor shall provide the name of an analytical laboratory and contact name for coordinating environmental testing.

8. Debris Containment Program:

Describe the control of debris generated by the performance of the work and how the work area will be maintained unencumbered by the debris confined inside the work area.

9. Soil and Air Pollution Management Plan:

Describe measures to be taken to control dust and prevent pollution of soil, and air resulting from the performance of the work. Describe in detail how dust, air emissions, and/or soil pollutants generated during the performance of the work will be minimized, controlled, contained, treated, and/or disposed. The Plan shall include development of a Site Inspection Checklist to be completed and submitted on a weekly basis. The Plan must also incorporate air pollution controls described in these specifications.

B. The following Plans and Programs must be made available within ten (10) calendar days only after being requested by Owner. Do not submit unless and until requested:

1. Injury and Illness Prevention Program, in accordance with CCR Title 8, Section 3203 (Cal/OSHA).
2. Hazard Communication Program, in accordance with CCR Title 8, Section 5194 (Cal/OSHA)
3. Respiratory Protection Program, in accordance with CCR Title 8, Section 5144 (Cal/OSHA).
4. Confined Space Entry Program, in accordance with CCR Title 8, Article 108. (Cal/OSHA).
5. Lockout/Tagout Program, in accordance with CCR Title 8, Sections 3314 and 2320 (Cal/OSHA).
6. Name of individual(s) having current Red Cross-equivalent first aid and CPR training.
7. Trenching and Shoring Plan, in accordance with CCR Title 8, Article 6 (Cal/OSHA).

ARTICLE II - PRODUCTS – NOT USED

ARTICLE III - EXECUTION – NOT USED

END OF DOCUMENT 01 3400

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DOCUMENT 01 4100

REGULATORY REQUIREMENTS

ARTICLE I – GENERAL

1.01. Summary

- A. Document includes: regulatory requirements applicable to the Project.
- B. Specific reference in the Specifications to codes and regulations or requirements of regulatory agencies shall mean the latest edition of each adopted by the regulatory agency in effect at the time of the opening of bids, except as may be otherwise specifically stated in the Contract Documents.
- C. Should any conditions develop not covered by the Contract Documents wherein the finished Work will not comply with current codes, a Change Order detailing and specifying the required Work shall be submitted to and approved by Owner before proceeding with the Work.

1.02. References to Regulatory Requirements

- A. Codes, laws, ordinances, rules, regulations and ordinances referred to shall have full force and effect as though printed in full in these Specifications. Code, laws, ordinances, rules, regulations and ordinances are not furnished to Contractor, because Contractor is assumed to be familiar with these requirements. The listing of applicable codes, laws, regulations and ordinances for hazardous waste abatement Work in the Contract Documents is supplied to Contractor as a courtesy and shall not limit Contractor's responsibility for complying with all applicable laws, regulations or ordinances having application to the Work. Where conflict among the requirements or with these Specifications occurs, the most stringent requirements shall be used.
- B. Conform to all applicable codes, laws, ordinances, rules and regulations.
- C. Precedence:
 - 1. Where specified requirements differ from the requirements of applicable codes, ordinances and standards, the more stringent requirements shall take precedence.
 - 2. Where Drawings or Specifications require or describe products or execution of better quality or higher standard than required by applicable codes, ordinances and standards, Drawings and Specifications shall take precedence so long as such increase is legal.
 - 3. Where no requirements are identified on Drawings or in Specifications, comply with all requirements of applicable codes, ordinances and standards of governing Authorities Having Jurisdiction.

1.03. Not Used

1.04. Codes, Laws, Statutes, Ordinances, Rules and Regulations

- A. During prosecution of Work to be done under Contract Documents, Contractor shall comply with applicable codes, laws, ordinances, rules and regulations, including, but not limited to, the following:
 - 1. Federal.
 - a. Americans With Disabilities Act of 1990
 - b. 29 CFR, Section 1910.1001, Asbestos
 - c. 40 CFR, Subpart M, National Emission Standards for Asbestos
 - d. Executive Order 11246
 - e. Federal Endangered Species Act
 - f. Clean Water Act
 - 2. State of California.
 - a. California Code of Regulations, Titles 5, 8, 17, 19, 21, 22, 24 and 25
 - b. California Public Contract Code
 - c. California Health and Safety Code
 - d. California Government Code
 - e. California Labor Code
 - f. California Civil Code

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- g. California Code of Civil Procedure
- h. California Environmental Quality Act (CEQA)
- i. CPUC General Order 95, Rules for Overhead Electric Line Construction
- j. CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
- k. Cal/OSHA
- l. OSHA: Hazard Communications Standards
- m. California Endangered Species Act
- n. Water Code
- o. Fish and Game Code
- p. Construction General Permit, Order 2009-009-DWQ (as amended) (if applicable)
- 3. State of California Agencies.
 - a. State and Consumer Services Agency
 - b. Office of the State Fire Marshal
 - c. Department of Fish and Game
 - d. Bay Area Air Quality Management Owner
 - e. San Francisco Bay Regional Water Quality Control Board
- 4. Local Agencies.
 - a. County of San Mateo
- 5. Other Requirements.
 - a. National Fire Protection Association (NFPA): Pamphlet 101, Life Safety.
 - b. References on Drawings or in Specifications to “code” or “building code” not otherwise identified shall include but not be limited to the codes specified in this Document 01 4100, together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction.
- B. Contractor shall have access to all of the foregoing at all times.
- C. Other Applicable Codes, Laws, Ordinances and Regulations.
 - 1. Work shall be accomplished in conformance with all applicable codes, laws, ordinances, rules and regulations of federal, state, and local governmental agencies and jurisdictions having authority over the Project.
 - 2. Work shall be accomplished in conformance with all rules and regulations of public utilities and utility Owners.
 - 3. Where such codes, laws, ordinances rules, and regulations require more care or greater time to accomplish Work, or require better quality or higher standards, Work shall be accomplished in conformance to such requirements with no change to the Contract Time and Contract Sum, except where changes in laws, ordinances, rules and regulations occur subsequent to the time of opening of the bids.
- D. Change Orders and Claims:
 - 1. The California Public Contract Code, including but not limited to Section 7105(d)(2), and the California Government Code section 930.2 et seq., apply to all contract procedures for changes, time extensions, change orders (time or compensation) and claims. Federal law (U.S. v. Holpuch 326 U.S. 234) shall supplement but not supersede California law on these requirements.
 - 2. Any change, waiver, or omission to implement contract change order and claim procedures shall have no legal effect unless expressly permitted in a fully executed change order approved by Contractor, Owner and approved as to form by their respective legal counsel.

1.05. Conflicts

- A. If conflict is between referenced regulatory requirements, Contractor shall comply with the one establishing the more stringent requirement.
- B. If conflict is between referenced regulatory requirements and Contract Documents, Contractor shall comply with the one establishing the more stringent requirement.

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1.06. Required Provisions on Contract Claim Resolution

- A. The California Public Contract Code specifies required provisions on resolving contract claims less than \$375,000, which are set forth below, and constitute a part of this Contract.
1. For the purposes of this section, "Claim" means a separate demand by Contractor of \$375,000 or less for (1) a time extension, (2) payment or money or damages arising from Work done by or on behalf of Contractor arising under the Contract Documents and payment of which is not otherwise expressly provided for or the Claimant is not otherwise entitled to, or (3) an amount the payment of which is disputed by Owner. In order to qualify as a Claim, the written demand must state that it is a Claim submitted under Article XII of Document 00 7200 (General Conditions) and be submitted in compliance with all requirements of Document 00 7200 (General Conditions), Article XII. Separate Claims which total more than \$375,000 do not qualify as a "separate demand of \$375,000 or less," as referenced above, and are not subject to this section.
 2. A voucher, invoice, payment application, or other routine or authorized form of request for payment is not a Claim for purposes of this section. If such request is disputed as to liability or amount, then the disputed portion of the submission may be converted to a Claim under this section by submitting a separate claim in compliance with Contract Documents claim submission requirements.
 3. Caution. This section does not apply to tort claims and nothing in this section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 and Chapter 2 of Part 3 of Division 3.6 of Title 1 of the California Government Code.
- B. Procedure.
1. The Claim must be in writing, submitted in compliance with all requirements of Document 00 7200 (General Conditions), Article XII, including, but not limited to, the time prescribed by and including the documents necessary to substantiate the Claim, pursuant to Document 00 7200 (General Conditions), paragraph 12.03. Claims must be filed on or before the day of final payment. Nothing in this section is intended to extend the time limit or supersede notice requirements for the filing of claims as set forth in Document 00 7200 (General Conditions), Article XII or elsewhere in the Contract Documents.
 2. For Claims of fifty thousand dollars (\$50,000) or less
 - a. Owner shall respond in writing within forty-five (45) days of receipt of the Claim, or
 - b. Owner may request in writing within thirty (30) days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims Owner may have against Claimant.
 - (i) If additional information is thereafter required, it shall be requested and provided in accordance with this section upon mutual agreement of Owner and Claimant.
 - (ii) Owner's written response to the Claim, as further documented, shall be submitted to Claimant within fifteen (15) days after receipt of further documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.
 3. For Claims over Fifty Thousand Dollars (\$50,000) and less than or equal to \$375,000:
 - a. Owner shall respond in writing within sixty (60) days of receipt of the Claim, or
 - b. Owner may request in writing within thirty (30) days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims Owner may have against Claimant.
 - (i) If additional information is thereafter required, it shall be requested and provided in accordance with this section, upon mutual agreement of Owner and Claimant;
 - (ii) Owner's written response to the Claim, as further documented, shall be submitted to Claimant within thirty (30) days after receipt of further documentation.
 4. Meet and Confer.
 - a. If Claimant disputes Owner's written response, or Owner fails to respond within the time prescribed above, Claimant shall notify Owner, in writing, either within fifteen (15) days of receipt of Owner's response or within fifteen (15) days of Owner's failure to timely respond, and demand an informal conference to meet and confer for settlement of the issues in

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dispute. Upon demand Owner will schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

- b. Following the meet and confer conference, if the Claim or any portion remains in dispute, Claimant 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 California Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time Claimant submits its written claim as set forth herein, 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.

1.07. Compliance with Laws and Regulations

- A. Contractor must keep informed of governmental regulations that may affect the Work. Contractor must observe and comply with, and must cause all agents, employees, Subcontractors and Suppliers to observe and comply with said regulations. Contractor shall hold harmless and indemnify Owner and all its officers, employees and consultants against any liability or claim arising from or based upon the violation of any such regulations by Contractor, its agents, employees, representatives or Subcontractors and Suppliers.
- B. Contractor 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 Contractor, must be accessible to the disabled public. Contractor shall provide the services specified in the Contract Documents in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Contractor agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under the Contract Documents and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns shall constitute a material breach of the Contract Documents.
- C. The Contractor must comply with all of the following:
 - 1. Contractor must, during the term of this Contract, comply with all applicable federal, state and local rules, regulations, and laws.
 - 2. Contractors must maintain financial records adequate to show that County funds paid pursuant to the Contract were used for purposes consistent with the terms of the Contract. These records must be maintained during the term of this Contract and for a period of three (3) years from the termination of this Contract or until all Claims, if any, have been resolved, whichever period is longer, or longer if otherwise required pursuant to other provisions of this Contract.
- D. The failure of the Contractor to comply with Document 01 4100 - Sub-Part 1.07(C) or any portion thereof may be considered a material breach of this Contract and may, at the option of the Owner, constitute a basis for the termination of the Contract. The Contractor will be furnished reasonable notice as stated in Document 00 7200 (General Conditions) of any intended termination based on noncompliance with Document 01 4100 - Sub-Part 1.07(C), and the opportunity to respond and discuss the County's intended action.

END OF DOCUMENT 01 4100

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DOCUMENT 01 4200

REFERENCES AND DEFINITIONS

ARTICLE I - GENERAL

1.01 Summary

A. Document Includes.

1. Reference standards, abbreviations, symbols, and definitions used in Contract Documents.
2. Full titles are given in this Document for standards cited in other Sections of Specifications.

1.02 Reference to Standards and Specifications of Technical Societies; Reporting and Resolving Discrepancies

A. References.

1. Reference 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 Bids, except as may be otherwise specifically stated in the Contract Documents.
2. If during the performance of the Work, Contractor 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, Contractor shall report it in writing at once to Owner's Representative and Architect/Engineer, and Contractor shall not proceed with the Work affected thereby until consent to do so is given by Owner.

B. Precedence.

1. Except as otherwise specifically stated in the Contract Documents or as may be provided by Change Order, 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:
 - a. The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. 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).
2. No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of Owner, Owner's Representative, Architect/Engineer or Contractor, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to Owner, Architect/Engineer, or any of their 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.

C. Referenced Grades, Classes, and Types.

1. 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.

D. Edition Date of References.

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 proposal submission.
2. All amendments, changes, errata and supplements as of the effective date shall be included.

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E. ASTM and ANSI References.

1. 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 Contractor is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.03 Abbreviations

In addition to abbreviations indicated on the Drawings, references in the Project Manual to technical terms, codes, regulations, trade associations, technical societies, recognized authorities, and other institutions may include the following organizations, which are sometimes referred to only by corresponding abbreviation. Not all abbreviations are listed and not all listed abbreviations are used. Unless otherwise specifically defined in the Contract Documents, when the following abbreviations are used, the intent and meaning will be interpreted as follows:

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AAN	American Association of Nurserymen
AATC	American Association of Textile Chemists
ACD	Amended Contract Document
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
ADA	Americans with Disabilities Act
ADC	Air Diffusion Council
AFBMA	Anti-Friction Bearing Manufacturers Association
AFPA	American Forest and Paper Association
ATIS	Alliance For Telecommunication Industry Solutions
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association
AHJ	Authorities Having Jurisdiction
AHMA	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects
A.I.A.	American Insurance Association
AIHA	American Industrial Hygiene Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America
ALI	Associated Laboratories, Inc.
ALSC	American Lumber Standards Committee
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
AOAC	Association of Official Analytical Chemists
AOSA	Association of Official Seed Analysts
APA	American Plywood Association
API	American Petroleum Institute
APRI	Air Conditioning and Refrigeration Institute

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APWA	American Public Works Association
ARMA	Asphalt Roofing Manufacturers Association
ASA	Acoustical Society of America
ASC	Adhesive and Sealant Council
ASCE	American Society of Civil Engineers
ASI	Architectural Supplemental Instruction
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPA	American Sod Producers Association
ASPE	American Society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASSHTO	American Association of State Highway and Transportation Officials
ASTM	American Society for Testing and Materials
AWCMA	American Window Covering Manufacturers Association
AWG	American Wire Gage
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWPI	American Wood-Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BAAQMD	Bay Area Air Quality Management District
BHMA	Builders' Hardware Manufacturers Association
BIA	Brick Industry Association
BIFMA	Business and Institutional Furniture
CAGI	Compressed Air and Gas Institute
CalTrans	State of California, Department of Transportation
CAUS	Color Association of the United States
CBC	California Building Code
CBM	Certified Ballast Manufacturers Association
CCC	Carpet Cushion Council
CCIP	Contractor Controlled Insurance Program
CCR	California Code of Regulations
CDA	Copper Development Association
CFFA	Chemical Fabrics & Film Association, Inc.
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CISCA	Ceiling and Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CM/GC	Construction Manager/General Contractor. CM/GC also means CMR, Contractor, and General Contractor.
CMR	Construction Manager at-Risk. CMR also means Contractor, General Contractor, CM/GC, and Construction Manager/General Contractor and these terms shall be interchangeable and refer to the same entity.
CPA	Composite Panel Association
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CRA	California Redwood Association
CSI	Construction Specifications Institute

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CSS	State of California Standard Specifications
CTI	Ceramic Tile Institute of America
DIPRA	Ductile Iron Pipe Research Association
DFEH	California Department of Fair Employment and Housing
DHI	Door and Hardware Institute
DLPA	Decorative Laminate Products Association
EIA	Electronic Industries Alliance
EIMA	Exterior Insulation Manufacturers Association
EJMA	Expansion Joint Manufacturers Association
EPA	Environmental Protection Agency
ETL	ETL Testing Laboratories, Inc.
FCI	Fluid Controls Institute
FM	Factory Mutual
FS	Federal Specification of General Services Administration
FTI	Facing Tile Institute
GANA	Glass Association of North America
GA	Gypsum Association
HEI	Heat Exchange Institute
HI	Hydronics Institute
H.I.	Hydraulic Institute
HMA	Hardwood Manufacturers Association
HPMA	Hardwood Plywood Manufacturers Association
IAMPO	International Association of Mechanical and Plumbing Officials
IBD	Institute of Business Designers
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
IESNA	Illuminating Engineering Society of North America
IGCC	Insulating Glass Certification Council
IMSA	International Municipal Signal Association
IRI	Industrial Risk Insurers
ISA	Instrument Society of America
ISA	International Society of Arboriculture (when associated with tree care)
LIA	Lead Industries Association, Inc.
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturer's Association
MCAA	Mechanical Contractors Association of America
MIA	Marble Institute of America
MIL	Military Specification of U.S. Department of Defense
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
NAAMM	National Association of Architectural Metal Manufacturers
NAIMA	North American Insulation Manufacturers Association
NAPA	National Asphalt Pavement Association
NAPF	National Association of Plastic Fabricators
NBGQA	National Building Granite Quarries Association
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCRPM	National Council on Radiation Protection
NCSPA	National Corrugated Steel Pipe Association

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NEC	National Electrical Code
NECA	National Electrical Contractors Association
NEII	National Elevator Industry, Inc.
NEMA	National Electrical Manufacturers Association
NETA	International Electrical Testing Association
NFPA	National Fire Protection Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NPCA	National Paint and Coatings Association
NRCA	National Roofing Contractors Association
NWWDA	National Wood Window and Door Association
NSF	National Sanitation Foundation
NTMA	National Terrazzo and Mosaic Association
NUSIG	National Uniform Seismic Installation Guidelines
OSHA	Occupational Safety and Health Administration
OSHPD	Office of Statewide Health Planning Department
PCA	Portland Cement Association
PCI	Precast Concrete Institute
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service [Grading Rules]
RMA	Rubber Manufacturers Association
SDI	Steel Deck Institute
S.D.I.	Steel Door Institute
SGCC	Safety Glazing Certification Council
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association, Inc.
SAE	Society of Automotive Engineers
SPRI	Single Ply Roofing Institute
SSMA	Steel Stud Manufacturers Association
SSPC	Steel Structures Painting Council
SSPMA	Sump and Sewage Pump Manufacturers Association
STI	Steel Tank Institute
SWI	Steel Window Institute
SWPA	Submersible Wastewater Pump Association
TCA	Tile Council of America
TCIA	Tree Care Industry Association
TPI	Truss Plate Institute
UBC	Uniform Building Code
UFAC	Upholstered Furniture Action Council
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
UL	Underwriters' Laboratories, Inc.
UNI	Uni-Bel PVC Pipe Association
USA	Underground Service Alert
USC	United States Code
USP	U.S. Pharmacopoeial Convention

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USEPA	United States Environmental Protection Agency
WA	Wallcovering Association
WCLIB	West Coast Lumber Inspection Bureau
WDMA	Window and Door Manufacturers Association
WIC	Woodwork Institute of California
WLPDIA	Western Lath, Plaster, Drywall Industries Association
WRI	Wire Reinforcement Institute
WSC	Water Systems Council
WSFI	Wood and Synthetic Flooring Institute
WWPA	Western Wood Products Association

1.04 Definitions

A. Meaning of Words and Phrases

1. Wherever any of the words or phrases defined below, or a pronoun used in place thereof, is used in any part of the Contract Documents, it shall have the meaning here set forth. Where abbreviations and symbols are used, such abbreviations and symbols shall be given their common meaning in the construction industry. In the Contract Documents, the neuter gender includes the feminine and masculine, and the singular number includes the plural.
2. While Owner has made an effort to identify all defined terms with initial caps, the following definitions shall apply regardless of case unless the context otherwise requires:
3. Acceptance: The formal acceptance by the Board of Supervisors of the Completion of the entire Work of the Contract, which to Owner's knowledge has been performed in accordance with the requirements of the Contract Documents and all Approved modifications thereof.
4. Addendum: A written change to the Bid Documents issued before the time fixed for the opening of Bids.
5. Additional Detailed Instructions: Detailed written and/or graphic instructions issued by the Owner to the Contractor to explain the Work more fully. Such instructions become part of the requirements of the Contract Documents without changing the requirements of the Contract Documents.
6. Agreement: The written and signed document known as Document 00 5201, (Agreement). (Sometimes also referred to as Contract Agreement or Contract.)
7. Alternative: Refer to Approved Equal and Substitution
8. Approve: Wherever in the Specifications or Drawings the words "directed", "approved", "designated", or words of like import are used, it shall be understood that the direction, approval, or designation of the Architect/Engineer is intended, unless otherwise expressly stated. Similarly, the words "approved", "acceptable", "satisfactory", or words of like import, shall mean approved by, acceptable to, or satisfactory to the Architect/Engineer, unless expressly stated otherwise. When used in conjunction with the Architect/Engineer's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the term "approved" will be held to limitations of the Architect/Engineer's responsibilities and duties as specified in the General and Supplementary Conditions. In no case will the Architect/Engineer's approval be interpreted as a release of the Contractor from responsibilities to fulfill requirements of Contract Documents or acceptance of the Work.
9. Approved Equal: Material, equipment, or method accepted by the Owner's Authorized Representative for use in the Work, as being acceptable as an equivalent in essential attributes to the material, equipment, or method specified in the Contract Documents.
10. Architect(s)/Engineer(s): The entity or entities identified as such in the Contract Documents, and licensed to practice in the state.
11. Architect/Designer of Record: See Design Professional of Record
12. Award Date: Date of action taken by the Board of Supervisors accepting Contractor's Bid and authorizing its Chairperson to execute the Agreement. (Sometimes also referred to as Award.)

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13. Proposal: The offer of a Proposer to perform the Work pursuant to a completed prescribed Proposal Form, properly executed and guaranteed, and timely submitted.
14. Proposal Form: The approved form upon which Owner requires a formal Proposal be prepared and submitted for the Work.
15. Bidder's Security: The cash, cashier's check, certified check, or Proposer's bond accompanying the Proposal submitted by the Proposer as a guaranty that the Proposer will enter into a Contract with Owner for the performance of the Work of the Contract is Awarded to the Proposer.
16. Board of Supervisors: The Board of Supervisors of the County of San Mateo.
17. Chairperson: The Chairperson of the Board of Supervisors.
18. Change Order: A written amendment to the Contract, changing the Work or Contract terms, the Contract Sum and/or the Contract Time, approved and executed by the Board of Supervisors or the Owner's Authorized Representative within the limits authorized by the Board of Supervisors.
19. Claim: As defined in Document 00 7200 (Dispute Resolution, 12.03) provides mandatory administrative settlement procedures for claims and disputes.
20. Complete Submittal: A group of individual Submittals, each meeting the requirements of the Contract Documents, encompassing all the Work included in a Definable Feature of Work (DFOW), and submitted to the Owner as a single Submittal package.
21. Completion: Acceptance of the Work by Owner.
22. Concealed: Work not exposed to view in the finished Work, including within or behind various construction elements.
23. Construction Manager at-Risk (CMR): A construction/consultant firm or such other individual or entity as Owner may designate in writing, retained by Owner to perform project management services during design and construction. The term "Construction Manager", "Construction Manager at-Risk", "CM/GC", "CMR" and "Contractor" are interchangeable and shall mean the same entity.
24. Consultants: Architects, Engineers, Construction Project Managers and other professionals engaged to provide the Owner with professional services for the Project.
25. Contract: The written Agreement on the Owner's form encompassing the performance of the Work and the furnishing of labor, materials, tools, and equipment in the construction of the Work. Synonymous with "Agreement", and "Contract Agreement".
26. Contract Bonds: The Performance Bond and the Payment Bond for Public Works.
27. Contract Documents: The Bid Documents and all Additional Detailed Instructions, Field Modifications, and Approved Change Orders.
28. Contract Sum: The path(s) of activities on the current updated version of the Official Progress Schedule that show zero days of Float, and if negative Float is shown, then the path of activities with the greatest number of days of negative Float.
29. Contract Time(s): Unless otherwise provided, the Contract Time is the period of time, including authorized adjustments, identified in the Contract Documents for Completion of the Work or a designated portion of the Work.
30. Contractor: The person or persons, firm, partnership, corporation, or combination thereof, private or municipal, or the legal representatives thereof, that entered into the Contract with Owner. (Sometimes also referred to as "Prime Contractor" or "Original Contractor".) Wherever in these specifications reference is made to Mechanical Contractor, Electrical Contractor, or other specific contractor, such reference shall be construed to mean the Prime Contractor for this Project as defined in the Agreement. The term "Construction Manager", "Construction Manager at-Risk" "CM/GC", "CMR" and "Contractor" are interchangeable and shall mean the same entity.
31. Contractor's Authorized Representative: The Contractor's authorized representative who has the authority to represent and act for Contractor.

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32. Construction Change Directive: A change in the Contract Documents directed by Owner either on a lump sum; time and materials, no to exceed; unit price; or no-cost and/or no-time basis.
33. Coordination Drawings: Contractor prepared drawings submitted by Contractor to Owner to demonstrate the coordination of methods, materials, equipment, plans, or sequence the Contractor proposes to use when limited space is available for installation of different components, coordination is required for installation of Products and materials Fabricated by separate entities, or the relationship of components is shown on separate Shop Drawings or Submittals. Coordination Drawings are not considered Contract Documents.
34. Cost Breakdown: A document submitted by the Contractor to the Owner reflecting the portions of the Contract Sum allotted for the various parts of the Work. (Sometimes also referred to as “Schedule of Values”.)
35. County: The County of San Mateo, a political subdivision of the State of California.
36. Critical Path: All references in the Contract Documents to the Critical Path mean the longest path of dependent activities within the current updated version of the Official Progress Schedule that determine when the Work of a Milestone or the entire Work of the Project will be complete.
37. Date of Acceptance: The date of Acceptance by the Board of Supervisors of Contract Completion.
38. Day(s): Calendar days unless otherwise designated.
39. Deficiency List: A written list of deficiencies in the completed Work. Also sometimes referred to as “Punch List.”
40. Definable Feature of Work (DFOW): A Work task that is separate and distinct from other Work tasks and has common control requirements and work crews.
41. Design Professional: The term “Design Professional” means a person licensed in California; as an architect pursuant to Chapter 3 (commencing with §5500) of Division 3 of the Business and Professions Code, registered as a professional engineer pursuant to Chapter 7 (commencing with §6700) of Division 3 of the Business and Professions Code, or licensed as a land surveyor pursuant to Chapter 15 (commencing with §8700) of Division 3 of the Business and Professions Code (Also sometimes referred to as “Architect/Engineer”, “A/E”, “Professional Engineer”, “PE”, “Design Consultant”, and/or “Consultant”).
42. Design Professional of Record: The term “Design Professional of Record” means the Design Professional in responsible charge of the design services or portions of the design services in connection with the Project.
43. Direct Cost of Construction: The aggregate total cost of the work of subtrades bid open book and novated to CMR plus total cost of authorized self-performed subtrade work, including the General Requirements as defined in Document 01 1000 Summary of Work - Appendix C.
44. Directed, Requested, etc.: Terms such as “directed”, “requested”, “authorized”, “selected”, “approved”, “required”, “accepted”, and “permitted” mean “directed by the Architect/Engineer”, “requested by the Architect/Engineer”, and similar phrases. However, no such implied meaning will be interpreted to extend the Architect/Engineer’s responsibility into the Contractor’s area of construction supervision.
45. Dispute: As defined in Document 00 7200 (Dispute Resolution, 12.02)
46. Dispute Resolution: Procedures set forth in Document 00 7200 (Dispute Resolution, 12.02) for resolving Disputes as a condition precedent to the filing of a Claim.
47. Drawings: The graphic and pictorial portions of the Contract Documents, illustrating the design, character, location, and dimensions of the Work to be performed, generally including but not limited to, elevations, sections, details, schedules, General Notes, specific notes, and diagrams. Synonymous with “Drawings”, “Contract Drawings”, and “Plans”.
48. Emergency: A sudden, unexpected occurrence that poses a clear and imminent danger, requiring immediate action to prevent or mitigate the loss or impairment of life, health, property, or essential public services.

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49. Equal, Approved Equal: Accepted or approved in writing as being of equivalent quality, utility, and appearance, in the opinion of the Architect/Engineer. The burden of proof of equality is the responsibility of the Contractor.
50. Fabricated: Specifically assembled or made out of selected materials to meet Project specific design requirements.
51. Department of Public Works (DPW): The DPW of County of San Mateo.
52. Field Modification: A written instruction, clarification or additional information issued by the Owner's Project Manager to Contractor that does not change the Contract Time or Contract Sum but becomes part of the requirements of the Contract Documents.
53. Final Acceptance: Owner's acceptance of the Work as satisfactorily completed in accordance with Contract Documents. Requirements for Final Acceptance/Final Completion include, but are not limited to:
 - a. Final cleaning is completed.
 - b. All systems having been tested and accepted as having met requirements of Contract Documents.
 - c. All required instructions and training sessions having been given by Contractor.
 - d. All Project Record Documents having been submitted by Contractor, reviewed by Owner, and accepted by Owner.
 - e. All punch list Work, as directed by Owner, having been completed by Contractor.
 - f. Generally all Work, except Contractor maintenance after Final Acceptance/Final Completion, having been completed to satisfaction of Owner.
54. Final Inspection: The inspection performed by the Owner and its Consultants after the Contractor has certified that the entire Work of the Project is complete. See Document 01 7700 Closeout Procedures.
55. Force Account: The method of performing Work by or on behalf of Contractor on a time, materials and equipment basis.
56. Furnish, Supply: Contractor to purchase and deliver to the Project site, including proper storage only, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance. No installation is included.
57. General Notes: The written instructions, provisions, conditions or other requirements appearing on the Drawings, and so identified thereon, which pertain to the performance of the Work.
58. Governing Body: The Board of Supervisors of the County of San Mateo.
59. Governmental Agencies: Whenever, in the Contract Documents, reference is made to any governmental agency or officer, such reference will be deemed made to any agency or officer acting in accordance with law to the power, duties, jurisdiction, and authority of the agency or officer mentioned.
60. Guarantee: A promise or assurance given by one party to a second party that a third party's obligations will be fulfilled (i.e., Contractor agrees to guaranty the Work performed by one of its Subcontractors to the Owner). (Also sometimes referred to as Warranty/Guaranty.)
61. Indicated: Shown or noted on the Drawings. The term "indicated" is a cross-reference to graphic representations, notes or schedules on the Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used instead of "indicated", it is for the purpose of helping the reader locate the cross-reference, and no limitation of location is intended except as specifically noted.
62. Inspector: The person assigned by Owner to inspect the Work. (Also sometimes referred to as Project Inspector or Owner's Inspector or Inspector of Record.)
63. Install: Contractor to construct, erect, or set in place for the intended use, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations as applicable in each

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- instance. Furnishing or supplying is not included. Synonymous with “Provide” for the purposes of this Contract.
64. **Installer:** The entity (person or firm) engaged by the Contractor, subcontractor, or sub-subcontractor for performance of a particular unit of Work at the Project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in the operations they are engaged to perform.
 65. **Invitation to Bid:** Includes any and all documents issued to Bidders that contain descriptions of the Work to be Bid or the content, form, or manner of submission of Bids. (See Public Contract Code § 4104.5.)
 66. **Laboratory:** Any laboratory authorized or accepted by Owner to test materials and Work involved in the Contract.
 67. **Liquidated Damages:** The amount prescribed in the Contract Documents to be paid to Owner or to be deducted from any payments due or to become due Contractor for each Day’s delay in completing the whole or any specified portion of the Work, beyond the time(s) allowed in the Contract Documents plus Approved time extensions.
 68. **Manufactured:** Standard units usually mass-produced.
 69. **Not Used**
 70. **Milestone:** A specific stage of completion of the Work, or specific portion of the Work, identified in the Contract Documents as a milestone, Substantial Completion and Final Completion are stages of completion.
 71. **Milestone Completion:** The date determined by the Owner when the Work of a Milestone is complete. Milestone Completion does not constitute Acceptance but does establish the completion date of the Milestone for the purpose of assessment of Liquidated Damages, if any, associated with the Milestone.
 72. **Milestone Duration:** The time allowed in the Contract Documents, plus Approved time extensions, for completion of the Work of a Milestone.
 73. **Mobilization:** Includes preparatory work and operations, including, but not limited to, those necessary for preparation of Submittals, movement of personnel, equipment, supplies and incidentals to the Project Site, for establishment of all temporary offices, buildings and other facilities necessary for Work on the Project, and for all other work and operations which must be performed, or costs incurred including obtaining Contract Bonds and insurance, before beginning Work on the public improvement at the Project Site.
 74. **Named Products:** Products identified in the Contract Documents by Manufacturer’s product name. Named Products may include Manufacturer’s make or model number or other designation.
 75. **Not In Contract (NIC):** Items noted NIC will be furnished and installed by the Owner, or under separate contract.
 76. **Notice of Award:** The letter from the Clerk of the Board of Supervisors notifying Contractor that the Board of Supervisors accepted Contractor’s Bid and authorized the Chairperson to execute the Agreement.
 77. **Notice of Completion:** A document executed by the Clerk of the Board of Supervisors, as authorized by the Board of Supervisors, and filed with the County Recorder, signifying that the Contract has been Completed and Accepted.
 78. **Notice to Proceed:** The written notice issued by Owner’s Authorized Representative to Contractor whereby the Contractor is notified of the official construction Contract start date and is authorized to proceed with the Work. Unless otherwise specified in the Contract Documents or Directed by written Order of Owner, the Contractor must begin Work within ten (10) Days following the start date for the Work as stated in the Notice to Proceed.
 79. **Official Progress Schedule:** The Contractor’s Progress Schedule and all revisions and updates thereto, accepted by the Owner, in accordance with the requirements of Document 01 3200, (Construction Progress Documentation).
 80. **Or Equal:** Refer to Approved Equal.

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81. Owner: The County of San Mateo.
82. Order: Refer to Approved, Directed, Ordered, or Required.
83. Owner's Authorized Representative: The person named in Document 00 5201 (Agreement) whose authority, to the extent authorized by law, includes but is not limited to the authority to approve Addenda, Change Orders, Payment Requests, and Milestone Completion(s).
84. Plans: See Drawings.
85. Pre-construction Submittals: Submittals requiring Owner's acceptance before Contractor may proceed with the installation of Work or the procurement of the materials and/or equipment covered by the Submittal.
86. Price Request: A written request prepared by the Design Professional of Record requesting the Contractor submit to the Owner and the Design Professional of Record an estimate of the effect of a proposed change in the Work on the GMP and the Contract Time.
87. Project: The entire public improvement proposed by Owner to be constructed in whole or in part pursuant to the requirements of the Contract Documents, including any phasing or Milestone requirements.
88. Project Component: The individual components of the Project as shown and described in Document 00 1001 (Notice Inviting Proposals).
89. Project Site: The space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other construction as part of the Project. The extent of the Project site is shown on the Drawings, and may or may not be identical with the description of the land upon which the Project is to be built.
90. Product Data: Illustrations, Manufacturer's literature, standard schedules, performance charts, instructions, brochures, diagrams and other information submitted by the Contractor to illustrate materials or equipment for some portion of the Work. Product Data are not considered Contract Documents.
91. Project Development Unit (PDU): A division of the San Mateo County Manager's Office responsible for the management of the County's new ground-up construction projects. The term "Project Development Unit", "PDU", "County", and "Owner" are interchangeable and shall mean the same entity.
92. Project Manager: The person identified in Document 00 5201 (Agreement) as the Project Manager or subsequently designated by Owner's Authorized Representative to manage the Contract and/or the Project. (Also sometimes referred to as Owner's Project Manager.)
93. Project Manual: The written volume(s) assembled for the Work, including the Introductory Information, Bidding Requirements, Contracting Requirements, General Requirements, Technical Specifications, and other written or graphic material as may be listed in the Project Manual Table of Contents, including any Addenda and Approved revisions by Owner.
94. Project Site: Space available to Contractor for performance of the Work, either exclusively or in conjunction with others performing other work as part of the Project.
95. Proposal Documents (also referred to as Bid Documents): The documents approved by the Board of Supervisors to advertise for construction of the Project, including but not limited to the contents of this Project Manual as listed in Document 00 0111 (Table of Contents) or otherwise included in the Manual.
96. Provide: Synonymous with "Install" for the purposes of this Contract: All labor, materials, equipment, supervision and whatever else is necessary to supply and incorporate a specified item into the Work in compliance with the requirements of the Contract Documents.
97. Punch List: A written list of deficiencies in the completed Work. (Also sometimes referred to as "Deficiency List.")
98. Record Documents: A set of the Contract Documents including Drawings and Project Manual updated on a continuous basis to indicate conditions encountered and the final configuration of a Project as it was constructed. Record Documents include any change or clarification to the Contract Documents and dimensional information showing the actual

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- locations of Installed components of the Work. (Also known as “As-Builts” or “As-Built Documents”).
99. Relocate: To reinstall existing item(s) in new location complete and ready for intended use.
 100. Remain: To retain item(s) in existing condition.
 101. Remove: To remove item(s) completely from Project Site and dispose of in accordance with requirement of authorities having jurisdiction.
 102. Request for Information (RFI): A written request by the Contractor for information or clarification regarding the requirements of the Contract Documents. Requests For Information must be numbered sequentially and presented in a format furnished or accepted by the Owner’s Project Manager. The Owner’s response to an RFI is considered an Additional Detailed Instruction and does not change the requirements of the Contract Documents, Contract Time, or Contract Sum.
 103. Retention: A defined percentage of the Contract Sum held by the Owner pending Completion of the Work, or any portion of the Work.
 104. Samples: Physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be evaluated.
 105. Shop Drawings: Drawings, diagrams, schedules, and other data specially issued for the Work by the Contractor or a Subcontractor, Sub-Subcontractor, and Suppliers to demonstrate and/or illustrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for some specific portion of the Work. Shop Drawings are not considered Contract Documents.
 106. Shown: Same as “Indicated”.
 107. Shut Down: Shut down of any building system will require a shut down request and approval prior to the work being performed. In most cases a meeting will be held between Owner, Contractor, Subcontractor, and any other pertinent parties to review the shut down request and finalize a plan for execution. In cases involving building critical systems, Contractor will be required to submit a workplan for review and approval prior to performing this work.
 108. Specifications: The provisions within Divisions 1 through 33 of the Project Manual.
 109. Specifications Language: In the interests of clarity and reducing verbiage, these specifications are written in the imperative mood wherever possible. This language is directed at the Contractor, unless specifically noted otherwise. Incomplete sentences shall be completed by inserting “shall”, “the Contractor shall”, and “shall be”, and similar mandatory phrases by inference. Except as worded otherwise, perform all indicated requirements whether stated imperatively or otherwise.
 110. Specified: As written in the Contract Documents.
 111. State: The State of California.
 112. Subcontractor: A contractor, within the meaning of the provisions of Chapter 9 (commencing with § 7000) of Division 3 of the Business and Professions Code, who contracts directly with the Contractor to perform any Work of the Project. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or its authorized representative.
 113. Sub-subcontractor: A contractor, within the meaning of the provisions of Chapter 9 (commencing with § 7000) of Division 3 of the Business and Professions Code, that has a direct or indirect contract with a Subcontractor to perform any Work of the Project. The term Sub subcontractor is referred to throughout the Contract Documents as if singular in number and means a Sub subcontractor or an authorized representative thereof.
 114. Submittal: Data or items required by the Contract Documents to be submitted by the Contractor to the Owner. Submittals demonstrate the method, materials, plan, or sequence the Contractor proposes to use to conform to the design concept expressed in the requirements of the Contract Documents. Submittals include but are not limited to Shop Drawings, Coordination Drawings, layouts, Progress Schedules, Substitution requests, Samples, mockups, catalogs, Product Data and literature, equipment data sheets,

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- maintenance and operating data. Unless otherwise stated in the Contract Documents, Submittals are not considered Contract Documents.
115. Substitution: A material and/or process offered by the Contractor in lieu of the specified material and/or process, and accepted by the Owner's Authorized Representative in writing as being equivalent (equal) to the specified material and/or process. (Also sometimes referred to as Product Substitution.)
 116. Supplier: A person or organization contracting with Contractor, a Subcontractor or a Sub-subcontractor to supply materials and/or equipment for the Work.
 117. Surety: A company that provides Contractor's bonds for bidding, performance and payment and is admitted as a surety insurer as defined in §995.120(a) of the California Code of Civil Procedure.
 118. Total Float Time: The time difference between the earliest start date and the latest start date, or between the earliest finish date and the latest finish date, of Project activities. (Also sometimes referred to as "slack time" or "Total Float" or "Float".)
 119. Warranty: A Contractor's, Subcontractor's, Manufacturer's or material Supplier's promise or assurance, written or otherwise, that it's Products and services provided meet industry (implied) or contractual (the requirements of the Contract Documents) standards of performance. (Also sometimes referred to as Warranty/Guarantee.)
 120. Work: The preconstruction, demolition, renovation and construction required by the Contract Documents, whether fully or partially completed, provided, and performed by the Contractor to fulfill his/her obligations under the Contract in accordance with the Contract Documents. The Work may constitute the whole or a part of the Project.
- B. Other Defined Terms. The following terms are not necessarily identified with initial caps; however they shall have the meaning set forth below:
1. Wherever words "as directed," "as required," "as permitted," or words of like effect are used, it shall be understood that direction, requirements, or permission of Owner is intended. Words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary, or proper in judgment of Owner. Words "approved," "acceptable," "satisfactory," "favorably reviewed," or words of like import, shall mean approved by, or acceptable to, or satisfactory to, or favorably reviewed by Owner.
 2. Wherever the word "may" or "ought" is used, the action to which it refers is discretionary. Wherever the word "shall" or "will" is used, the action to which it refers is mandatory.

ARTICLE II - PRODUCTS – NOT USED

ARTICLE III - EXECUTION – NOT USED

END OF DOCUMENT 01 4200

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DOCUMENT 01 4600

TESTING LABORATORY SERVICES

ARTICLE I – GENERAL

1.01. Contractor’s Responsibilities

- A. Required Tests and Inspections. Coordinate and pay for all tests and inspections required by laws, ordinances, rules, regulations, orders, etc. of Governing Authorities that are not specified to be performed by the Owner’s Independent Testing Laboratory, including, but not necessarily limited to, those required by the Uniform Building Code, Section 108 - “Inspections”.
- B. General. Cooperate with Governing Authorities and Laboratory personnel, provide access to Work and manufacturing operations.
 - 1. Coordination: Ensure that parts of the work required to remain visible for tests and inspections remain uncovered, and that construction operations that would interfere with testing and inspection are delayed, until testing and inspection are complete.
 - 2. Covered Work: Uncover as required.
- C. Samples. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- D. Design Mixes. Furnish to the laboratory the preliminary design mix proposed to be used for concrete and other materials which require control by the Laboratory.
- E. Manufacturer’s Test Reports and Certifications. Furnish copies to laboratory when required.
- F. Furnish incidental labor and facilities:
 - 1. To provide access to Work to be tested.
 - 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
 - 3. To facilitate inspections and tests.
 - 4. For storage and curing of test samples done at the project site.
- G. Schedule. Provide schedule of construction to laboratory; update as required. Allow within the construction schedule the time required for the laboratory to perform tests and issue findings. Coordinate revisions to the construction schedule with the laboratory.
- H. Advance Notification. Notify the Inspector of Record sufficiently in advance of operations, 48 hours minimum, to allow for assignment of personnel and scheduling of tests.
 - 1. Compensation: When tests or inspections cannot be performed after such notice, Contractor will reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor’s negligence.
- I. Contractor’s Testing. Employ and pay for the services of a separate, equally qualified, independent testing laboratory to perform additional inspections, sampling and testing that may be required for the Contractor’s convenience.
- J. Change of Source. Pay for costs of additional inspections and tests when sources of supply are changed by Contractor.
 - 1. Submittals: Resubmit required mix designs, certifications, etc.

1.02 Additional Testing and Inspection

- A. Failure of Initial Tests. If initial inspection or testing reveals a failure of the Work to comply with the Contract Documents, the Contractor shall bear all costs for any required retesting or reinspection, including reimbursement to Owner for all additional services made necessary by such failure
- B. Other Additional Testing. If the Architect/Engineer determines that any Work requires additional inspection, testing or approval, he will, upon written authorization from the Owner, direct the Contractor to order such inspection, testing or approval.
 - 1. Failure: If additional inspection, testing or approval reveals a failure of the Work to comply with the Contract Documents, the Contractor shall bear all costs, including reimbursement to the Owner for all additional services made necessary by such failure.

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2. Compliance: If additional inspection, testing or approval indicates that the Work complies with the Contract Documents, the Owner shall bear all costs, and an appropriate Change Order shall be issued.

ARTICLE II – (Not Used)

ARTICLE III – (Not Used)

END OF DOCUMENT 01 4600

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DOCUMENT 01 5000

TEMPORARY FACILITIES AND CONTROLS

ARTICLE I - GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents, Codes, and Standards (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 – Temporary Facilities and Controls
 - e. 1.05 – Utilities
 - f. 1.06 – Temporary Construction Facilities
 - g. 1.07 – Fire Protection
 - h. 1.08 – Submittals
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents, Codes and Standards (Not Used)

1.03. Definitions

- A. Hot Work. Hot work includes any operations capable of initiating fires or explosions, including cutting, welding, brazing, soldering, grinding, thermal spraying, thawing pipe, torch applied roofing, or any other similar activity.
- B. Fire Marshal. Office of State Fire Marshal, County and City of South San Francisco Fire Marshals
- C. Temporary Fencing. Temporary fencing provided and Installed by Contractor as needed by Contractor to protect equipment, field office, stored items, Project Site, and Work until final demobilization.

1.04. Temporary Facilities and Controls

- A. Provide and pay for all temporary utilities, utility usage and service charges, utility meters, controls, and support facilities required for the Project until the Owner assumes responsibility of the aforementioned.

1.05. Utilities

- A. Electricity.
 - 1. Electrical service including metering devices needed by the Contractor to perform the Work must be Provided and paid for by Contractor.
 - 2. Arrange with utility company to provide service required for power and lighting, and pay all costs for service and for power used.
 - 3. Install circuit and branch wiring with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction-type power cords.
 - 4. Provide adequate artificial lighting for all areas of Work in accordance with industry safety standards including OSHA requirements when natural light is not adequate for Work and for areas accessible to the public.
 - 5. If additional temporary utility poles or electric extensions are deemed necessary by the Contractor to perform Contract Work, Contractor must submit three (3) copies of a plan showing the proposed temporary utility poles or electric extensions prior to installation. Contractor must pay for all additional temporary utility poles or electric extensions installed.
- B. Telephone and Internet Service.
 - 1. Arrange with local telephone company to provide direct line telephone and internet service at the construction site.

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2. Minimum service required:
 - a. One direct line instrument in Field Office.
 - b. Internet for office use
 3. Pay all costs for installation, maintenance, use, and removal.
 4. Prior to mobilization, Contractor must submit to Owner four copies of a list containing all relevant personnel contact telephone numbers, including emergency contact numbers for nights, weekends, and holidays.
- C. Water Service.
1. Contractor must make arrangements and pay for all water and water metering devices required for construction purposes including landscape irrigation.
 2. Contractor must not assume that water required for construction purposes will be available at the Project Site at the times and in the quantities required to support Contractors construction activities.
- D. Sanitary Facilities.
1. Contractor must Provide and pay for an appropriate number of sanitary facilities, in compliance with all laws and regulations, for use by Contractor and Owner's personnel.
 2. Regular service of the sanitary facilities must be maintained by the Contractor to keep a clean, healthy, and hygienically acceptable work environment.
 3. Contractor must not use Owner's Sanitary Facilities without prior written Approval of Owner's Project Manager.
- E. Waste Disposal.
1. Unless otherwise specifically stated in the Contract Documents, Contractor must provide and pay for all Waste Disposal.
 2. Wastes must be properly handled, and stored in covered containers, and removed from the Project Site at least once each week.
 3. Cardboard, packing material, and similar combustible debris shall not be accumulated within buildings. Such debris, rubbish and waste material must be removed from buildings on a daily basis.
 4. Temporary Construction Facilities
- F. Field Office.
1. The Contractor must maintain an active Field Office on site.
 2. Contractor may bring a portable field office on site to support the Contractor's Work.
 3. All project meetings will be held in the Contractor's Field Office unless otherwise Directed by Owner's Project Manager.
 4. Contractor to provide and maintain office for County Project Manager and Project Inspector.
- G. Advertising.
1. Advertising is not permitted, except that Contractor's name may be placed on Contractor's field office.
- H. Temporary Fencing.
1. The Contractor must install Temporary Fencing to protect equipment, field office, and stored items.
 2. Contractor must provide and pay for Temporary Fencing to protect Project Site(s) and Work areas as needed until final demobilization.
- I. Storage Areas and Sheds.
1. Prior to mobilizing to the Project Site, Contractor must submit the intended location of the Contractor's storage sheds and storage areas for Owner review and acceptance.
 2. Contractor must confine its apparatus, storage of materials, and construction operations to areas approved by Owner's Project Manager.
 3. Contractor must not unreasonably encumber the premises and roads with its materials and equipment.
 4. The Contractor must not store any quantities of fuel, oils, solvents or any other hazardous materials in storage tanks on-site.

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- J. Equipment Maintenance and Repair.
1. The Contractor must perform equipment maintenance activities off site.
 2. Equipment service trucks must provide fuels and lubricants for construction equipment. Contractor must not store any quantities of fuel or oil in on-site storage tanks.
- K. Vehicular Access.
1. All vehicles must be operated in a safe manner.
 2. Contractor's equipment must enter and leave the Project area via access routes designated by Owner, and move in the direction of public traffic at all times. All movements on or across public traveled ways must not endanger public traffic.
- L. Parking.
1. Parking for personal vehicles of Contractor's personnel must be limited to designated areas specified or Approved by Owner's Project Manager.
 2. Personal vehicles must not be parked in the Work area.
 3. Parking of construction equipment must be limited to designated areas specified or as approved by Owner.
 4. All vehicles must be parked a minimum of 20 feet from new buildings under construction except construction vehicles may be temporarily parked for loading/unloading or other construction related operations as long as such vehicles are not left unattended at any time.
- M. Progress Cleaning.
1. Contractor must maintain the Project Site in a clean and orderly condition at all times.
 2. The Contractor must maintain all Project areas free of waste materials, debris, dust, mud and rubbish caused by Contractor's operations.
 3. Work and storage areas must be kept clean and free of rubbish on a daily basis.
 4. Contractor must immediately remove any spillage or debris resulting from hauling operations along or across any public traveled way.
 5. Contractor must perform daily inspection of Project Site, Work areas, and public traveled ways to enforce the above requirements.
- N. Concrete Washout Areas.
1. Concrete washout must be limited to designated areas specified or Approved by Owner.
- O. Temporary Living Facilities
1. Contractor's employees, or others subject to the Contractor's control, are not permitted to reside on the Project Site in temporary living facilities.
- P. On-site Fabrication Areas.
1. On-site Fabrication must be limited to designated areas specified or Approved by Owner.
- Q. Hoists, Temporary Elevators and Man-lifts.
1. Provide facilities for hoisting materials and employees.
 2. Do not permit employees to ride hoists that comply only with requirements for hoisting materials.
 3. Selection of type, size and number of facilities is the Contractor's option.
 4. Provide properly trained operating personnel for equipment.
 5. Truck cranes and similar devices used for hoisting are considered equipment and not Temporary Construction Facilities.
 6. Permanent Elevators
 - a. Use permanent elevators only with the express written permission of the Owner's Project Manager.
 - b. Contractor must not assume Owner will grant permission to use Permanent Elevators.
 - c. If Owner grants permission to use Permanent Elevators, Contractor must comply with all conditions and restrictions associated with Owner's permission for Contractor's use of Permanent Elevators.
- R. Scaffolding.
1. Furnish, erect and maintain all required scaffolding for the Work of this Project.
 2. Scaffolding and accessories must conform to all regulations governing such equipment.
 3. Maintain scaffolding in conformance with all applicable safety requirements.
 4. Immediately upon completion of use, remove all scaffolding and accessories from the Job Site.

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5. At the Contractor's option, individual Subcontractors may provide scaffolding for their Work; however, all scaffolding remains the responsibility of the Contractor.

S. Temporary Enclosures.

1. Provide temporary weather-tight enclosure of exterior walls for successive areas of building as work progresses, as necessary to provide acceptable working conditions, to provide weather protection for materials, allow for effective temporary heating, and to prevent entry of unauthorized persons.
2. Provide temporary exterior doors with self-closing hardware and padlocks.
3. Temporary Enclosures must be removable as necessary for Work and for handling of materials.

1.06. Temporary Controls

A. Temporary Barriers.

1. Contractor must provide and maintain temporary barriers as needed to prevent unauthorized entry to Work areas.
2. Contractor must provide and maintain temporary barriers as needed to protect existing facilities and adjacent properties from damage.
3. Contractor must provide adequate measures to protect third party vehicular traffic from damage.
4. Contractor must Provide adequate measures to protect third party foot traffic from injury.
5. Install Temporary Barriers in a neat and reasonable uniform appearance, structurally adequate for required purposes.
6. Maintain Temporary Barriers during entire Construction Time.
7. Relocate Temporary Barriers as required by progress of Construction.
8. Contractor must remove Temporary Barriers when no longer needed, or at completion.

B. Protection of Work.

1. Contractor must protect installed Work and Provide special protection where needed or required by the Contract Documents.
2. Contractor must provide suitable drainage to protect the Project Site and the Work.
3. Contractor must erect such temporary structures as are necessary to protect the Work, materials, and equipment from damage.
4. Contractor must maintain staking, flagging, Temporary Fencing, and barrier fencing throughout the Contract Time as required for protecting the Work.

C. Protection of Existing Property.

1. Contractor must protect all existing utilities, facilities, landscape, fencing, equipment, furniture and all other existing structures and improvements within the Project area not specifically scheduled for demolition.
2. To the extent permitted by law, any damage caused by the Contractor to existing utilities, facilities, equipment, furniture, fencing, and all other existing structures and improvements must be fully and immediately restored at the Contractor's expense.

D. Protection of Pedestrians.

1. Contractor must pave pedestrian openings through falsework or Provide full width continuous wood walks, and keep all walkways clear.
2. Contractor must protect pedestrians from falling objects and water runoff.
3. Overhead protection for pedestrians must extend not less than four (4) feet beyond the edge of a structure.

E. Security.

1. The security of the Project Site, Work area, and stored materials is the Contractor's responsibility during the entire Contract Time.
2. Owner is not responsible for damage to or loss of Contractor's materials and equipment left at the Project Site.
3. Contractor must repair, replace, or restore all existing facilities, equipment, furniture, and new Work damaged, destroyed, lost, stolen, or defaced due to vandalism or theft.

F. Traffic Control.

1. The Contractor must not stage vehicles or equipment on railroad tracks, private property, or on

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- any public street unless expressly authorized in advance by the local jurisdiction or private property owners.
2. The Contractor must keep all surface areas (i.e., site roads, off-site streets, and parking areas) clear of dirt, mud, and debris and must clean such surfaces as needed, or as Directed by the Owner's Project Manager.
 3. Locate temporary roads, drives, walks and parking facilities to provide uninterrupted access to construction offices, Work and storage areas, and other areas as required for efficient execution of the Work.
 4. Keep fire hydrants and water control valves free from obstruction and accessible for use.
 5. Provide flagmen for traffic control as needed or required.
 6. At completion of the Work, permanent roads and entranceways must be left in at least equal condition to that existing at the start of the Work, except as may be otherwise required by the Contract Documents.
- G. Noise Control.
1. Unless the Owner's Authorized Representative grants a waiver in writing, Contractor must comply with all local noise ordinances, and must limit the Normal Hours of Work accordingly.
- H. (Not Used)
- I. Dust and Odor Control.
1. Contractor must minimize dust nuisances resulting from performance of the Work, both inside and outside the Project limits, by applying either water or dust palliative, or both.
 2. Contractor shall make every effort to minimize the levels of odors and fumes and similar items to the extent possible and in accordance with local ordinances or other requirements.
- J. Surface Water Control.
1. Contractor must:
 - a. Construct whatever temporary facilities are necessary to provide prevention, control and abatement of water pollution.
 - b. Control surface drainage water to prevent damage to the Work, Project Site or adjoining properties.
 - c. Provide whatever temporary measures are needed or required including but not limited to berms, dikes, ditches, and drains to direct surface drainage away from excavations, trenches, pits, tunnels and other Work areas.
 - d. Provide, operate and maintain equipment of adequate capacity to control surface water.
 - e. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the Work, Project Site or to adjoining areas.
 - f. Plan and execute earthwork operations by methods which control surface drainage.
 - g. Expose minimum amount of bare soil at any given time.
 - h. Inspect earthwork daily for evidence of erosion and apply erosion control measures as needed or required.
 2. Contractor must obtain and pay for any discharge permits required.
- K. Trenching, Drilling, Pinning and Excavation.
1. Before any excavation, Contractor must, pursuant to California Government Code § 4216 and Cal/OSHA 8 C.C.R. 1540, outline the excavation in white paint (preferably chalk or water base), provide two workdays notice to Underground Service Alert (1-800-227-2600), obtain a locator number, and follow all necessary procedures to avoid underground facility damage.
 2. Contractor must meet all regulatory requirements and Provide adequate temporary protection before, during, and after all Trenching, Drilling, Pinning and Excavation activities.
- L. Pesticide Use.
1. Contractor must comply with the California Department of Pesticide Regulation relating to integrated pest management and pesticide use.
- M. Compliance with Owner's Policies, Ordinances, and Regulations.
1. Contractor must comply with all applicable County of San Mateo and City of South San Francisco Policies, Ordinances, and Regulations regarding signs, advertising, barricades, danger signals, pesticide use, fires, smoking, security, noise, dust, vibration, odor, or other policies or regulations, and must require all persons employed on the Work to comply with all

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building or institutional regulations, and vehicle, street and highway codes while on the premises and roads relating to the Project Site.

N. (Not Used)

O. Confined Spaces.

1. Contractor must comply with all State and Federal OSHA requirements, and all of Owner's requirements regarding entry into confined spaces including but not limited to the following:
 - a. Before starting any Work, submit for Owners review and acceptance a confined space entry program applying to all existing permit-required confined spaces identified by Owner in the Contract Documents (see Table 015000-001, "Permit-required Confined Spaces"), or defined by regulations, and any confined spaces identified or created by Contractor or Owner during the Contract Time. Owner has the right to identify additional spaces to be treated as confined spaces by Contractor at any time during the Contract Time, without changing the Contract Sum or Contract Time if such additional spaces were created by Contractor.
 - b. Maintain written records of all entries into confined spaces and all activities conducted in confined spaces.
 - c. Coordinate all entry operations with Owner when both Contractor's personnel and Owner's personnel will be working in or near a confined space in the Project area. Owner will endeavor to give Contractor at least twenty-four (24) hours advance notice of such entry except in unforeseen situations and emergencies.
 - d. Inform Owner in writing at the conclusion of entry operations regarding the permit space program followed and any hazards confronted or created in permit spaces during entry operations.

1.07. Fire Protection

A. Prior to performing any Work at the Project Site, Contractor must establish at the Project Site, methods, procedures, and equipment for emergency notification to the fire department via telephone. The street address of the construction site must be posted adjacent to the telephone, along with the public safety emergency telephone number(s).

B. Fire Department Access Roadways.

1. The Project Site must be accessible by fire department apparatus by means of roadways having an all-weather driving surface of not less than 20 feet of unobstructed width.
2. The Fire Department Access Roadway must have the ability to withstand the live loads of fire apparatus, and have a minimum 15 feet of vertical clearance.
3. Dead-end Fire Department Access Roadway in excess of 150 feet in length must be Provided with turnarounds approved by the Fire Marshal.
4. If permanent Fire Department Access Roadways are not available during any part of the Contract Time, Contractor must Provide temporary Fire Department Access Roadways complying with the following requirements:
 - a. The roadway must be approved by the Fire Marshal. As a minimum, the roadway must consist of a six-inch (6") road base material (Class II aggregate base rock), both compacted to a minimum of ninety-five (95%).
 - b. The perimeter edges of the roadway must be contained and delineated by curb and gutter or other method approved by the Fire Marshal.
 - c. Surface drainage must be Provided.
 - d. The integrity of the roadway must be maintained at all times.
 - e. The Contractor must include activities in Contractor's Progress Schedules for Fire Marshal approval and construction of the temporary Fire Department Access Roadway.

C. (Not Used)

D. (Not Used)

E. Fire Extinguishers.

1. Portable fire extinguishers must be Provided and must be mounted on a wall or post at each usable stairway such that the travel distance to any extinguisher does not exceed 75 feet.
2. Mounting height to the top of the extinguisher must not exceed five feet (5').

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3. Extinguishers must be suitable for use on class A, B, and C (multi-purpose) or as otherwise directed by the Fire Marshal.
 4. The Contractor must ensure an adequate number of individuals are trained in the proper use of portable fire extinguishers.
- F. (Not Used)
- G. Fire Hydrants.
1. If underground water mains and fire hydrants are required as part of the Work, they must be installed, completed, and in service prior to 2nd Level first concrete slab pour.
 2. Contractor's Progress Schedule must include specific activities showing the installation of water mains and fire hydrants as directed by the Owner or County Fire Marshal.
- H. (Not Used)
- I. Exiting Requirements.
1. All exiting requirements must comply with approved Permit Drawings.
 2. For new multi-story buildings, each level above the first story must be Provided with at least two usable exit stairs after the floor decking is installed. The stairways must be continuous and discharge to grade level.
 3. Stairways serving more than two floor levels must be enclosed (with openings adequately protected) after exterior walls/windows are in place.
 4. Exit stairs in new and existing, occupied buildings, must be lighted and maintained clear of debris and construction materials at all times. (Exception: For new multi-story buildings, one of the required exit stairs may be obstructed on not more than two (2) contiguous floor levels for the purposes of stairway construction; i.e., installation of gypsum board, painting, flooring, etc.)
 5. Designated exterior assembly points must be established for all construction personnel to relocate to upon evacuation.
 6. Contractor's Progress Schedule must include specific activities showing the installation of exit stairs including all sequencing restrictions identified in the requirements of the Contract Documents.
- J. Oily Rags.
1. Oily rags and similar material must be removed daily or after use.
- K. Smoking.
1. Smoking is prohibited anywhere on campus or on Owner's premises.
 2. A suitable number of "NO SMOKING" signs must be posted to ensure smoking is controlled.
- L. Asphalt and Tar Kettles.
1. Asphalt kettles must not be located within 20 feet of any combustible material, combustible building surface or building opening.
 2. With the exception of thermostatically controlled kettles, an attendant must be within 100 feet of a kettle when the heat source is operating.
 3. Ladders or similar obstacles must not form a part of the route between the attendance and the kettle.
 4. Kettles must be equipped with tight-fitting covers.
 5. Class A, B, and C (multi-purpose) rated portable fire extinguisher must be located within 30 feet of each asphalt kettle when the heat source is operating.
 6. Class A, B, and C (multi-purpose) rated portable fire extinguishers also must be located on roofs during asphalt coating operations.
- M. Compressed Gases.
1. Gas cylinders must be marked with the name of the contents.
 2. Gas cylinders must be stored upright and secured to prevent falling.
 3. When not in use, gas cylinder valve protective caps must be in place.
 4. Gas cylinders must be protected against physical damage.
 5. When stored, gas cylinders must be separated from each other based on their hazard classes, outside of buildings and in an Owner-designated area.
 6. Combustible materials must be kept off site.
 7. Gas cylinders must not be placed near elevators, unprotected platform edges or other areas where they would drop more than two feet (2').

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8. Gas cylinders must not be placed in areas where they may be damaged by falling objects.
 9. Ropes, chains or slings must not be used to suspend gas cylinders unless the cylinder was manufactured with appropriate lifting attachments.
- N. Liquid Petroleum Gas Storage and Use.
1. Liquid petroleum gas (LP-Gas) storage and use must comply with the following:
 - a. If not prohibited by other sections of the Contract Documents, propane containers may be used in buildings under construction or undergoing major renovation as a fuel source for temporary heating for curing concrete, drying plaster and similar applications in accordance with the following:
 - (1) Heating elements (other than integral heater-container units) must be located at least 6 feet from any LP-Gas container.
 - (2) Integral heater container units specifically designed for the attachment of the heater to the container, or to a supporting standard attached to the container, may be used provided they are designed and installed so as to prevent direct or radiant heat application to the LP-Gas container.
 - (3) Blower and radiant type units must not be directed toward any LP-Gas container within 20 feet.
 - (4) Heat producing equipment must be installed with clearance to the combustibles in accordance with the manufacturer's installation instructions.
 - (5) Cylinders must comply with DOT cylinder specifications and must be secured in an upright position.
 - (6) Regulators must be approved for use with LP-Gas. Fittings must be designed for at least 250-psig service pressure.
 - (7) Hoses must be designed for a working pressure of at least 350 psig (unless limited to 5 psig) and shall be a maximum of 6 feet in length.
 - (8) Portable heaters must be equipped with an approved automatic device to shut off the flow of gas to the main burner and to the pilot in the event of flame extinguishment or combustion failure.
 - (9) Portable heaters with an input of more than 50,000 Btu/hr must be equipped with either a pilot that must be "proved" before the main burner can be turned on, or provided with an approved electronic ignition system.
 - b. In addition to the above, for LP-Gas use in buildings undergoing alteration and that are fully or partially occupied, the following shall also apply:
 - (1) Specific approval must be obtained from the Fire Marshal and Owner's Safety Officer prior to bringing LP-Gas containers onto the Project Site.
 - (2) The maximum water capacity of individual containers shall be 5-gallon water capacity and the number of containers in the building shall not exceed the number of workers assigned to using the LP-Gas.
 - (3) Containers having a water capacity greater than 2 1/2 lb. [1 quart] must not be left unattended.
 - (4) LP-Gas containers may not be stored on-site.
- O. Hot Work.
1. The use of Hot Work equipment must be in accordance with the Owner's hot work policy, San Mateo County permitting requirements, and the following guidelines, including a pre-site inspection and post inspection procedures.
 - a. Pre-site Inspection: An inspection of the Hot Work site must be conducted by the Contractor or his/her designee prior to Hot Work operations to ensure:
 - (1) the Hot Work site is clear of combustibles or that combustibles are protected;
 - (2) exposed construction is of noncombustible materials or that combustible materials are protected;
 - (3) openings are protected;
 - (4) there are no exposed combustibles on the opposite side of partitions, walls, ceilings, floors, etc.; and
 - (5) fire extinguishers are available, fully charged and operable

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- b. Post Inspection: An inspection of the Hot Work site must be conducted by the Contractor or his/her designee a minimum of 30 minutes after the conclusion of the Work to look out for leftover sparks, slag or smoldering combustibles.
- P. Combustion Powered Equipment.
 - 1. Combustion powered equipment must be used in accordance with the following:
 - a. Equipment must be located so that exhausts do not discharge against combustible materials.
 - b. When possible, exhausts must be piped to the outside of the building.
 - c. Equipment must not be refueled while in operation.
 - d. Fuel for equipment must be stored in an approved area outside of the building.
- Q. Temporary Heating (LP-Gas) fueled, shall be listed and must be installed, used, and maintained Equipment
- R. Temporary heaters, such as those that are liquid petroleum gas in accordance with the manufacturer's instructions.
 - 1. Temporary heating devices must be secured properly and kept clear from combustible materials.
 - 2. Refueling operations must be conducted in an approved manner.
- S. Combustible Material Storage.
 - 1. Combustible construction materials must be stored off site.
- T. Flammable and Combustible Liquids.
 - 1. Storage areas for flammable and combustible liquids must be kept free of weeds and extraneous combustible material. Open flames and smoking are prohibited in flammable or combustible liquid storage areas.
 - 2. Tanks and containers must be marked with the name of the product and "FLAMMABLE KEEP FIRE AND FLAME AWAY." Tanks (containers in excess of 60 gallons) shall also be labeled, "KEEP 50 FEET FROM BUILDINGS."
 - 3. Metal containers for Class I or II liquids must be in accordance with DOT requirements or must be of an approved design. Discharge devices must not cause an internal pressure on the container. Individual containers must not be interconnected and must be kept closed when not in use.
 - 4. Secondary containment or a means of spill control, drainage control, and dike control is required for large containers (such as 55 gallon drums) and tanks as approved by the Fire Marshal.
 - 5. Plans for the installation/use of any aboveground storage tank (containers greater than 60 gallons) must be submitted to the Owner and Fire Marshal for review and permit prior to procuring proposed tank.
- U. (Not Used)
- V. Burning on the Project Site is prohibited.

1.08. Submittals

- A. Contractor must submit the following items to the Owner for review and acceptance prior to mobilization:
 - 1. Three (3) paper copies and an electronic copy submitted to the Owner of a site map identifying the locations of:
 - a. Contractor's and County's field offices
 - b. Storage sheds and storage areas
 - c. Project Site access and egress points
 - d. Fabrication areas
 - e. Equipment maintenance area
 - f. Parking area for personal vehicles
 - g. Parking and maintenance area(s) for construction equipment
 - h. Temporary utility poles or electric extensions
 - i. Concrete washout area(s)
 - j. Temporary and/or Construction Fencing location(s)

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2. Three (3) paper copies and an electronic copy submitted to the Owner of a written description of what types of materials will be used as temporary barriers and protection and how they will be utilized. (See Document 01 5000.1.06, “Temporary Controls.”)
 3. Three (3) paper copies and an electronic copy submitted to the Owner of a letter designating an authorized representative for the Contractor who will have the authority to represent and act for Contractor at the Project Site. Include the telephone and/or pager numbers at which the Contractor’s Authorized Representative can be reached at all times.
 4. Three (3) paper copies and an electronic copy submitted to the Owner of all Cal-OSHA safety programs applying to all existing confined spaces identified by Owner in the Contract Documents, or defined by regulations, and any confined spaces identified or created by Contractor or Owner during the Contract Time.
- B. Contractor must submit four (4) paper copies and an electronic copy to the Owner of the following items for Owner and Fire Marshal review and acceptance:
1. Plans for the installation/use of any aboveground storage tank (containers greater than 60 gallons).
 2. Plans for temporary Fire Department Access Roadways, if needed.

ARTICLE II – PRODUCTS (NOT USED)

ARTICLE III – EXECUTION (NOT USED)

ARTICLE IV – FORMS (NOT USED)

END OF DOCUMENT 01 5000

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DOCUMENT 01 5150

SOLID WASTE MANAGEMENT AND RECYCLING PLAN

ARTICLE I - GENERAL

1.01. Summary

- A. This Document includes:
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1.02. Related Sections

- A. Division 0 Document 00 7301 ‘Supplemental Conditions’
- B. Division 1 Document 01 3300, “Submittals”
- C. Division 1 Document 01 5000, “Temporary Facilities and Controls”
- D. Division 1 Document 01 7400, “Cleaning”

1.03. Definitions

- A. Inert Fill. A permitted facility that accepts inert waste such as asphalt and concrete exclusively.
 - 1. Inert Solids/Inert Waste: Non-liquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board and does not contain significant quantities of decomposable solid waste.
- 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. Construction and Demolition Waste. Includes solid wastes, such as building materials, packaging, rubbish, debris and rubble resulting from construction, remodeling, repair and demolition operations.
 - 1. Rubbish: Includes both combustible and noncombustible wastes, such as paper, boxes, glass, crockery, metal and lumber scrap, tin cans, and bones.
 - 2. Debris: Includes both combustible and noncombustible wastes, such as leaves and tree trimmings that result from construction or maintenance and repair work.
- D. Chemical Waste. Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals and inorganic wastes.
- E. Sanitary Wastes. Includes:
 - 1. Garbage: Refuse and scraps resulting from preparation, cooking, distribution or consumption of food.
 - 2. Sewage: Domestic sanitary sewage.

1.04. Intent

- A. Owner is committed to promoting efforts to have the Work performed in an environmentally sensitive manner.
- B. To promote this effort the Contractor is required to:
 - 1. Make reasonable efforts to affect optimum control of solid wastes.
 - 2. Prepare and comply with a Project specific Solid Waste Management Plan.

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1.05. Submittals

- A. Submit the following according to the requirements of the Contract Documents:
 - 1. Solid Waste Management Plan
 - a. No later than twenty-eight (28) Days after the start date for the Work stated in the Notice to Proceed, Contractor must schedule and conduct a meeting with Owner to discuss Contractor's proposed Solid Waste Management Plan.
 - b. No later than forty-five (45) Days after the start date for the Work stated in the Notice to Proceed, prepare and submit three (3) paper copies and an electronic copy of a written and/or graphic Solid Waste Management Plan including, but not limited to, the following:
 - (1) Permit or license and the location of the solid waste disposal area(s).
 - (2) Procedures for Recycling/Re-Use Program.
 - c. Revise and resubmit Solid Waste Management Plan as required by Owner.
 - 2. Review of the Contractor's Solid Waste Management Plan will not relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.
- B. No later than fifteen (15) Days after Contractor's request for Final Inspection, Contractor must submit three (3) hardcopies and an electronic copy of a summary of solid waste generated by the Contractor's operations.
 - 1. Submit on Form referenced in Document 00 7301 (Supplemental Conditions) as required per County's Waste Management Plan.
 - 2. Include manifests, weight tickets, receipts, and invoices specifically identifying the Project and waste material from:
 - a. Recycling Centers.
 - b. Class III Landfills.
 - c. Inert Fills.

1.06. Recycling Requirements

- A. Recycling: Implement a recycling program that includes separate collection of waste materials of the following types:
 - 1. Concrete.
 - 2. Metal:
 - a. Ferrous.
 - b. Non-ferrous.
 - 3. Wood.
 - 4. Debris.
 - 5. Glass.
 - 6. Fluorescent light tubes
 - 7. Paper:
 - a. Bond.
 - b. Newsprint.
 - c. Cardboard and paper packaging materials.
 - 8. Others as appropriate.

ARTICLE II - PRODUCTS (Not Used)

ARTICLE III - EXECUTION (Not Used)

ARTICLE IV – FORMS (Not Used)

END OF DOCUMENT 01 5150

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DOCUMENT 01 5250

FIRE PROTECTION PLAN

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - 1.01 – Summary
 - 1.02 – Related Documents And Standards
 - 1.03 – Definitions
 - 1.04 – Fire Protection Plan Requirements
 - 1.05 – Implementation
 - 1.06 – Submission
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents And Standards

- A. Division 1 Document 01 5000, “Temporary Facilities and Controls”
- B. California Fire Code - Article 87
- C. National Fire Protection Association - Standard #1

1.03. Definitions

- A. Hot Work. Hot work includes any operations capable of initiating fires or explosions, including cutting, welding, brazing, soldering, grinding, thermal spraying, thawing pipe, torch applied roofing, sparking tools, or any other similar activity.
- B. Fire Marshal. State Fire Marshal, County of San Mateo Fire Marshal and City of South San Francisco Fire Marshal.

1.04. Fire Protection Plan Requirements

- A. Contractor must prepare and submit a written Fire Protection Plan.
- B. The written Fire Protection Plan must meet the requirements of the Contract Documents and be consistent with the fire safety precautions.
- C. At a minimum, the fire protection plan must include:
 - 1. The name and contact phone number of the person(s) responsible for compliance with the Fire Protection Plan.
 - 2. Procedures for:
 - a. Reporting emergencies to the fire department.
 - b. Emergency notification, evacuation and/or relocation of all persons in the building under construction and on the Project Site.
 - c. Hot Work operations.
 - d. Management of hazardous materials.
 - e. Removal of combustible debris.
 - f. Maintenance of emergency access roads.
 - 3. Floor plans identifying the locations of:
 - a. Exits.
 - b. Exit stairs.
 - c. Exit routes.
 - d. Portable fire extinguishers.
 - 4. Site plans identifying:
 - a. Designated exterior assembly areas for each evacuation route.
 - b. Fire apparatus access roadways.

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- c. On-site fire hydrants.

1.05. Implementation

- A. Contractor is responsible for implementation of the requirements and provisions of the approved Fire Protection Plan.
- B. Contractor is responsible for communicating the requirements of the Fire Protection Plan to all Subcontractors and other personnel working at the Project Site.
- C. Contractor to supply and post all signage required by Owner and any other requirement required by the local AHJ.

1.06. Submission

- A. Submit to the Owner three (3) paper copies and an electronic copy on a Flash Drive of a Fire Protection Plan.
- B. Fire Marshals must approve the Fire Protection Plan prior to Contractor performing Work at the Project Site.

ARTICLE II – PRODUCTS (Not Used)

ARTICLE III – EXECUTION (Not Used)

ARTICLE IV – FORMS (Not Used)

END OF DOCUMENT 01 5250

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DOCUMENT 01 5350

CONSTRUCTION FENCING

ARTICLE I – GENERAL

1.01 Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents
 - c. 1.03 – Definitions
 - d. 1.04 – Construction Fencing
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution (Not Used)
 - a. 3.01 Construction
 - 4. Article IV – Forms (Not Used)

1.02 Related Documents

- A. Document 01 5000.1.09.A.1.J, Site Map Submittal
- B. Document 01 5000.1.06.C, “Temporary Fencing”

1.03 Definitions

- A. Temporary Fencing. Temporary fencing Provided and Installed by Contractor as required by other Sections of the Contract Documents.
- B. Construction Fencing. Temporary fencing to be Provided and Installed by Contractor for the duration of construction as required by this Document.

1.04 Construction Fencing

- A. Prior to start of Work at the Project Site, install site enclosure fence with suitable locked entrance gates. Locks to be keyed to Owner specifications by Contractor.
- B. Locate as shown on Drawings and as Approved by Owner’s Project Manager.
- C. Locate vehicular entrance gates in suitable relation to construction facilities and to avoid interference with traffic on public thoroughfares.
- D. Locate pedestrian entrance gates as required to provide controlled personnel entry, in suitable relation to construction parking facilities.
- E. Fencing Materials.
 - 1. No. 11 gauge, 2-inch mesh, 72-inch high galvanized chain link fabric with extension arms and 3b strands of galvanized wire.
 - 2. Galvanized steel posts; 1-1/2 inch O.D. line posts and 2 inch O.D. corner posts.
 - 3. Black-out screen to be supplied in all fences except at corner panels facing traffic intersections. Material used to be approved by Owner.

ARTICLE II – PRODUCTS (Not Used)

ARTICLE III – EXECUTION

3.01 Construction

- A. Construct open-mesh fence in accordance with industry standards.

ARTICLE IV – FORMS (Not Used)

END OF DOCUMENT 01 5350

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**SECTION 01 5400
SITE SECURITY AND SAFETY**

ARTICLE I - GENERAL

1.01. Submittals

- A. See Document 01 3300 (Submittals)
- B. Site Security
- C. See Document 01 3400 (Safety Submittals)
- D. See Document 01 5250 (Fire Protection Plan)

1.02. Protection

- A. Contractor shall:
 - 1. Continuously maintain protection as necessary to protect the Work, as a whole and in part, and adjacent property and improvements from accidents, injuries or damage.
 - 2. Properly protect the Work:
 - a. With lights, guard rails, temporary covers and barricades.
 - b. Enclose excavations with proper barricades.
 - c. Brace and secure all parts of the Work against storm and accident.
 - d. Provide such additional forms of protection that may be necessary under existing circumstances.
 - 3. Provide and maintain in good condition all protective measures required to adequately protect the public from hazards resulting from the Work and to exclude unauthorized persons from the Work. When regulated by Building Codes, Cal OSHA, or other Authorities Having Jurisdiction, such legal requirements for protection shall be considered as minimum requirements. Be responsible for the protection in excess of such minimum requirements as required.

1.03. Control of Site

- A. Contractor shall ensure that no alcohol, firearms, weapons, or controlled substance enters or is used at the Site. Immediately remove from the Site and terminate the employment of any employee found in violation of this provision.

1.04. Site Security

- A. As part of the Work included within the Contract Price, Contractor 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 without limitation preventing theft, loss, vandalism and improper concealment of personal property of Owner and all persons lawfully present on the Site, and including times where workers are not present on the Site. Contractor's measures shall include, at a minimum, maintaining a log of all persons entering and leaving the Site and who they represent, what they are delivering and to whom.
- B. No claim shall be made against Owner by reason of any act of an employee or trespasser, and Contractor shall repair all damage to Owner property resulting from Contractor's failure to provide adequate security measures.
- C. Contractor shall maintain a lock on the Construction access gate at all times. Contractor shall appoint one (1) person to let people through the gate and maintain the sign-in/out list, with person's name, company, reason for entering, what they are delivering, time and date. Alternatively, Contractor shall provide a full-time guard at the gate at all times to control access and maintain the sign-in/out list. The sign in/out list shall be available to Owner at any time upon request. If Owner determines that the gate has been left unlocked, Contractor shall, if requested by Owner, provide a full time guard at no additional expense to Owner.
- D. Contractor shall supply additional security fencing, barricades, lighting, and other security measures as required to protect and control the Site.

1.05. Safety Program

- A. See also Document 01 3400 (Safety Submittals)
- B. Within fifteen (15) days after Notice to Proceed, Contractor shall submit three (3) paper copies and an

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electronic copy on a Flash Drive of the Safety Program and Site-Specific Safety Plan that has been reviewed by Owner. Contractor shall comply with the Safety Program and all applicable federal, state, and local regulation codes, rules, law and ordinances.

- C. Receipt and/or review of the Safety Program by Owner, Project Manager or Owner representative shall not relieve Contractor of any responsibility for complying with all applicable safety regulations.
- D. It is essential that Contractor and each Subcontractor implement an effective and vigorous Safety and Health Program to cover their respective portions of the Work. Subject to Contractor's overall responsibility for Project safety, it shall be understood that the full responsibility for providing a safe place to work with respect to their respective portions of the Work rests with each individual Contractor and Subcontractor.
- E. Safety Program 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): Describing 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. Confined Space Program: The Site contains permit- and non-permit-confined spaces, including shored trenches. Owner will provide Contractor with any available information regarding existing permit space hazards, entry operations, and safety information relating to Work in the existing permit spaces as set forth in the General Industrial Safety Orders (CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 5157). Permit space entry is allowed only through compliance with a permit 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 Owner of the permit space program followed and of any hazards confronted or created in permit spaces during entry operations.
- F. The wearing of hard hats, safety vests, safety shoes, and eye protection shall be mandatory at all times for all personnel and visitors on Site. Contractor shall provide hard hats, safety vests, safety shoes and eye protection to properly equip all employees and have a sufficient supply (excluding shoes) to loan to visitors.
- G. Whenever an exposure exists, appropriate personal protective equipment (PPE) shall be used by all affected personnel. Contractor shall supply PPE to all personnel under Contractor's direction.

1.06. Safety Requirements

- A. Standards: Contractor shall maintain the Project in accordance with state and local safety and insurance standards.
- B. Hazards Control. Contractor shall:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation and immediately remove all wastes that create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Contractor shall conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws, and:
 - 1. Not burn or bury rubbish or waste material on the Site.
 - 2. Not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Not dispose of wastes into streams or waterways.
- D. Contractor shall provide accident information on the forms provided by Contractor. This information shall be provided on the same day as the occurrence of said incident.

1.07. Site Safety Officer

- A. Contractor shall designate one of Contractor's staff as "Site Safety Officer" whose duties shall include the responsibility for enforcing the environmental protection provisions of the Contract Documents including safety and health, the requirements of the Occupational Safety and Health Act, and other applicable federal, state and local standards. Contractor shall submit for review by Owner, Contractor's intended traffic flow plan, security plan, program for temporary structures, housecleaning plan, demolition program, and environmental safety and health plan. After review by Owner, the

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implementation and enforcement of these plans shall become the responsibility of the Site Safety Officer. Any changes in the plans shall be requested by Contractor through the Site Safety Officer for written concurrence by Owner.

- B. Owner risk management representative(s) shall be allowed access to accident/injury and illness reports, inspection reports, scheduling and construction meetings, and safety meetings.

1.08. Fire Protection Plan

- A. See also Document 01 5250 Fire Protection Plan
- B. Within fifteen (15) days after Notice to Proceed submit to the Owner three (3) paper copies and an electronic copy on a Flash Drive of a fire protection plan that has been reviewed and approved by all fire departments or agencies with territorial jurisdiction over the Site. It is recommended that the plan include, but not be limited to, a discussion of the following items:
 - 1. Equipment spark arresters
 - 2. Fire-extinguishing equipment on hand
 - 3. Method of operation in case of fire
 - 4. Notification to authorities of any fire
 - 5. Access available during performance of Work
 - 6. Educating workers of fire protection plan
 - 7. Storage protection for flammable materials
 - 8. Ventilation and illumination equipment

ARTICLE II – PRODUCTS - NOT USED

ARTICLE III – EXECUTION - NOT USED

END OF SECTION 01 5400

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DOCUMENT 01 5700

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

ARTICLE I - GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 – SWPPP Requirements
 - e. 1.05 – Submittals
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections (Not Used)

1.03. Definitions

- A. **NOI** – Notice of Intent
- B. **SWPPP** – Storm Water Pollution Prevention Plan
- C. **NOT** – Notice of Termination
- D. **NPDES** – National Pollutant Discharge Elimination System

1.04. SWPPP Requirements

- A. The project will comply with the NPDES General Construction Activity Storm Water Permit administered by the Regional Water Quality Control Board.
- B. Prior to construction grading for the proposed land uses, the Owner will file a “Notice of Intent” (NOI) to comply with the General Permit.
- C. The Contractor must prepare and maintain for the entire construction period a Storm Water Pollution Prevention Plan (SWPPP) which addresses measures Contractor will implement to minimize and control construction and post-construction storm water runoff.
- D. At a minimum, the following measures must be included in the SWPPP:
 - 1. Burlap bags filled with drain rock will be installed around storm drains to route sediment and other debris away from the drains.
 - 2. Earthmoving or other dust-producing activities will be suspended during periods of high winds.
 - 3. All exposed or disturbed soil surfaces will be watered at least twice daily to control dust.
 - 4. Stockpiles of soil or other materials that can be blown by the wind will be watered or covered.
 - 5. All trucks hauling soil, sand, and other loose materials will be covered and maintain at least two feet of freeboard.
 - 6. Debris and recycling containers must remain covered when not in use.
 - 7. All paved access roads, parking areas, staging areas and residential streets adjacent to the construction sites will be swept daily (with water sweepers).
- E. Contractor must submit the SWPPP for approval as required for permitting prior to construction.
- F. The certified SWPPP must be available at the Project Site and must be updated to reflect current site conditions.
- G. When the construction phase is complete, Contractor must file a Notice of Termination (NOT) for the General Permit for Construction with the Regional Water Quality Control Board and applicable Governmental Agency. The NOT must document that all elements of the SWPPP have been executed, construction materials and waste have been properly disposed of, and a post-construction storm water management plan is in place as described in the SWPPP for the site. Submit the NOT to the Owner.

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1.05. Submittals

- A. Submit the Storm Water Pollution Prevention Plan (SWPPP) in accordance with Section 01 3300, (Submittals).
- B. Submit required copies of the Notice of Termination (NOT) to the Owner.

ARTICLE II - PRODUCTS (NOT USED)

ARTICLE III - EXECUTION (NOT USED)

ARTICLE IV - FORMS (NOT USED)

END OF DOCUMENT 01 5700

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**DOCUMENT 01 5800
PROJECT IDENTIFICATION AND SIGNS**

ARTICLE I – GENERAL

1.01. Summary

- A. Document Includes:
 - 1. Project identification signs.
 - 2. Project informational signs.
 - 3. Maintenance.
 - 4. Removal.
- B. Related Documents:
 - 1. Document 01 1000 (Summary of Work)

1.02. Quality Assurance

- A. Design sign and structure to withstand fifty (50) miles/hour wind.
- B. Sign Painter: Experienced as a professional sign painter for a minimum of five (5) years.
- C. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.03. Submittals

- A. Document 01 3300 Submittals, shop drawings and product data.
- B. Show content, layout, lettering, color, structure, sizes, and proposed locations for signs.

ARTICLE II – PRODUCTS

2.01. Sign Materials

- A. Structure and Framing: New, structurally adequate. No wood signage permitted indoors.
- B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum ¾ - inch thick, standard large sizes to minimize joints.
- C. Rough Hardware: Galvanized.
- D. Paint and Primers: Exterior quality, two coats; sign background of color as selected.
- E. Lettering: Exterior quality paint, contrasting colors as selected.

ARTICLE III – EXECUTION

3.01. Installation

- A. Install project identification sign within sixty (60) days after date of Notice to Proceed.
- B. Erect the Project sign at a location to be reviewed and approved by the Owner prior to installation .
- C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
- D. Paint exposed surfaces of sign supports and framing.

3.02. Maintenance

- A. Maintain sign and supports, keep clean repair deterioration and damage.

3.03. Removal

- A. Remove sign, framing, supports and foundations at completion of Project and restore area.

END OF DOCUMENT 01 5800

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DOCUMENT 01 6000

PRODUCT REQUIREMENTS

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 – Product Delivery, Storage, and Handling
 - e. 1.05 – Packaging
 - 2. Article II – Products
 - a. 2.01 – Unauthorized Products
 - b. 2.02 – Product Availability
 - c. 2.03 – Product Requirements
 - d. 2.04 – Certification by Contractor of Recycled Content
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections (Not Used)

1.03. Definitions

- A. Products. Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock.
 - 1. The term “Product” includes the terms “material,” “equipment,” “system,” and terms of similar intent.
 - 2. Product means New Products including material, machinery, components, equipment, fixtures, and systems forming the Work.
 - a. Product does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work.
 - b. Products may also include existing materials or components required for reuse.
- B. Named Products. Products identified in the Contract Documents by Manufacturer’s product name. Named Products may include Manufacturer’s make or model number or other designation.
- C. New Products. Items that have not previously been incorporated into another project or facility.
- D. Manufacturer’s Warranty. Warranty published by individual Manufacturer for a particular Product and specifically endorsed by Manufacturer to Owner.

1.04. Product Delivery, Storage, And Handling

- A. Delivery.
 - 1. Deliver Products using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 2. Schedule delivery to minimize long-term storage at Project Site and to prevent overcrowding of Project or Work areas.
 - 3. 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.
 - 4. 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.
 - 5. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that Products are undamaged and properly protected.
 - 6. Material Safety Data Sheets (MSDSs) shall be provided prior to delivery.
- B. Storage.
 - 1. Store Products using means and methods that will prevent damage, deterioration, and loss, including theft.

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2. Comply with Manufacturer's written instructions for storage.
 3. Store Products to allow for inspection and measurement of quantity or counting of units.
 4. Store materials in a manner that will not endanger Project premises or personnel.
 5. 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.
 6. Comply with product Manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 7. Protect stored products from damage.
 8. For exterior storage of fabricated products, place on sloped supports above ground.
 - a. Cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.
 - b. Store loose granular materials on solid surfaces in well-drained area; prevent mixing with foreign matter.
- C. Handling.
1. Handle Products using means and methods that will prevent damage, deterioration, and loss, including theft.
 2. Comply with Manufacturer's written instructions for handling.
 3. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

1.05. Packaging

- A. Provide reusable or recyclable packaging for items delivered to the Project Site such as construction materials, operations and maintenance materials, furniture, equipment and other large objects.
- B. For items over 75 pounds or larger than 120 cubic feet, polystyrene "peanuts" shall not be used with packaging.
- C. Use products with natural or recycled content.
 1. Plastic sheets or films will be allowed only if labeled with recycling symbol-indicating type of plastic.
 2. Reusable Packaging: Items such as blankets, skids and crates must be returned to the manufacturer or transportation company for future reuse as packaging materials.
 3. Recyclable Packaging: Items such as boxes, cardboard and paper that will be delivered to a recycling center after use.
 4. All packaging, including skids and crates, cannot be constructed of wood.
- D. Properly dispose of packaging materials and clean surrounding areas of packaging debris immediately after unpacking of Products. Contractor is responsible for and must provide the means for disposal of all packaging material.

ARTICLE II – PRODUCTS

2.01. Unauthorized Products

- A. Products required for Work must not contain asbestos or polychlorinated biphenyls (PCB) or other environmental toxins.
- B. If the Contract Documents name a Product, Provide the Named Product unless the Owner's Authorized Representative, through the Substitution process, accepts an equal Product. (See Section 016300, (Product Substitution Procedures).

2.02. Product Availability

- A. Prior to Bid, Contractor must verify that Named Products, including sole source Products can be obtained, delivered, and installed within the Time Period(s) stated in the Bid Documents.
- B. Owner does not warrant that Named Products including sole source Products are available within the Time Period(s) required by the Bid Documents. Contractor must verify availability of Named Products before submitting a Bid.
- C. By submitting a Bid, Contractor represents to the Owner that Contractor has verified the availability of Named Products, the Named Products including sole source Products are currently available, and the Work or designated portion of the Work can be completed within the Contract Time(s).

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2.03. Product Requirements

- A. Provide Products that:
 - 1. Comply with the requirements of the Contract Documents.
 - 2. Have been accepted by the Owner for incorporation into the Work.
 - 3. Are undamaged.
 - 4. Are new at time of installation, unless otherwise indicated in the Contract Documents.
- B. Provide products complete with:
 - 1. Accessories.
 - 2. Trim.
 - 3. Finish.
 - 4. Fasteners.
 - 5. Gauges.
 - 6. All other items needed for a complete installation.
- C. Standard Products.
 - 1. 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.
- D. Owner has the right to reject Products with Manufacturer's Warranties that are in conflict with requirements of the Contract Documents.
- E. Products required to be supplied in quantity must be interchangeable.

ARTICLE III – EXECUTION (Not Used)

ARTICLE IV – FORMS (Not Used)

END OF DOCUMENT 01 6000

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DOCUMENT 01 6300

PRODUCT SUBSTITUTION PROCEDURES

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents (Not Used)
 - c. 1.03 – Definitions (Not Used)
 - d. 1.04 – General
 - e. 1.05 – Submission Requirements
 - f. 1.06 – Owner’s Action
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms
 - a. Form 01 6300-F1 (Substitution Request Form)

1.02. Related Documents (Not Used)

1.03. Definitions (Not Used)

1.04. General

- A. Owner’s Authorized Representative will consider proposals for Substitution of a service, product, material, process or article at his or her discretion, only when such proposals are:
 - 1. Submitted within the time periods stated in the Contract Documents.
 - 2. Accompanied by full and complete technical data.
 - 3. All supporting information requested by Owner’s Authorized Representative to substantiate or prove quality, delivery time, and cost are submitted
 - 4. Substitution request is accompanied by Substitution Request Form (Form 01 6300-F1) at the end of this Document 01 6300 (Product Substitution Procedures), properly completed by Contractor, and properly certified by the Contractor’s Authorized Representative. If the Substitution request is a pass through request from a Subcontractor, both Contractor’s Authorized Representative and an officer of the Subcontractor must certify the Substitution requests.
- B. The burden of proof as to the equality of any service, product, material, process or article Contractor proposes for Substitution rests with Contractor.
- C. The Contractor must not order substitute services, products, materials, or articles without prior written acceptance of the Substitution by Owner’s Authorized Representative.
- D. The Owner has the right to reject proposals due to insufficient information.
- E. Contractor must certify that proposed Substitution meets or exceed all the requirements of the Contract Documents.
- F. Contractor must assume responsibility for Owner’s additional costs related to the redesign and/or modifications to any parts of the Work and/or Contract Documents caused by the Substitutions.
- G. Contractor’s Substitution requests that do not comply with the requirements of the Contract Documents may be returned to Contractor without review.
- H. If Contractor’s Substitution request is returned without review or returned rejected, Contractor must furnish the originally specified items

1.05. Submission Requirements

- A. Submit three (3) paper copies and an electronic copy via flash drive of each request for Substitution including completed and signed Substitution Request Form 01 6300-F1, furnished at the end of this Document 01 6300 (Product Substitution Procedures).

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- B. Identify product or fabrication or installation method to be replaced including specification Section number and title and Drawing numbers and titles.
- C. Submit the following documentation:
 - 1. Statement indicating why specified material or product cannot be provided.
 - 2. Coordination information including:
 - a. A list of changes or modifications needed to other parts of the Work that are necessary to accommodate proposed Substitution.
 - b. A list of changes or modifications to work performed by Owner and/or separate contractors that are necessary to accommodate proposed Substitution.
 - 3. Detailed comparison including:
 - a. Comparison of significant qualities of proposed Substitution with those of the Work specified. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 4. Drawings to same (or larger) scale and specifications as pertinent portions of Contract Documents, marked to show:
 - a. How differences will be accommodated.
 - b. Complete system/assembly as revised.
 - c. Difference(s) in size, configuration, connections, service, accessibility, or any other significant characteristics.
 - 5. Contractor must show complete layout of system unless it is identical to the layout shown in the Contract Documents. Show unchanged portion to indicate clearances, etc. relative to changed portion.
 - 6. Wherever applicable, include complete detail drawings of supports for all Substitute equipment and complete load calculations for adequacy of support prepared and signed by a California Registered Engineer.
 - 7. Product Data, including drawings, descriptions of Products, specifications and fabrication and installation procedures.
 - 8. Samples, where applicable or requested.
 - 9. List of similar installations for completed projects with project names and addresses and names and addresses of Architects and Owners.
 - 10. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 11. Research/evaluation reports evidencing compliance with building codes in effect for Project from a model code organization acceptable to authorities having jurisdiction.
 - 12. Evidence that proposed product provides specified Warranty.
 - 13. Cost information, including a proposal of change, if any, in the Contract Sum.
- D. Submit a detailed comparison of Contractor's Progress Schedule with and without using proposed Substitution showing effect on the Contract Time(s).
- E. If specified product cannot be provided within the Contract Time(s), include letter from Manufacturer, on Manufacturer's letterhead, stating the reason(s) for the lack of availability or delays in delivery.
- F. Provide Contractor's certification that proposed Substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
- G. Provide Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed Substitution to produce indicated results.

1.06. Owner's Action

- A. If necessary, Owner will request additional information or documentation within fourteen (14) Days of receipt of a request for Substitution.
- B. Owner will notify Contractor of acceptance or rejection of proposed substitution within twenty-one (21) Days of receipt of request, or seven (7) Days of receipt of additional information or documentation, whichever is later.

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ARTICLE II – PRODUCTS (NOT USED)

ARTICLE III – EXECUTION (NOT USED)

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ARTICLE IV – FORMS

**FORM 01 6300-F1
SUBSTITUTION REQUEST FORM**

All Substitution requests must be accompanied by the following form, completed by the Contractor, and properly certified.

PROJECT: _____
OWNER'S PROJECT NUMBER: _____
TO: _____
FROM: _____ DATE: _____
RE: _____

SPECIFICATION TITLE: _____
DESCRIPTION: _____
SECTION: _____ PAGE: _____ DOCUMENT/PARAGRAPH: _____

PROPOSED SUBSTITUTION: _____
MANUFACTURER: _____
ADDRESS: _____
PHONE: _____
TRADE NAME: _____ MODEL NUMBER: _____
INSTALLER: _____
ADDRESS: _____
PHONE: _____

HISTORY: New Product 2-5 Years Old 5-10 Years Old More Than 10 Years Old

SIMILAR INSTALLATION:
Project: _____ Architect: _____
Address: _____ Owner: _____
Date Installed: _____
Differences between proposed substitution and specified product: _____

Required point-by-point comparative data attached. Yes No

The supporting data attached consists of Drawings Product Data Samples Tests Reports Other

Proposed substitution affects other parts of Work: No If Yes, please explain: _____

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Reason for not providing specified item: _____

Savings Cost to Owner for accepting substitution: \$ _____

Proposed Substitution changes Contract Time. No Yes _____ Days

THE UNDERSIGNED CERTIFIES:

1. Proposed Substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
2. Same Warranty will be provided for proposed Substitution as for specified product.
3. Same maintenance service and source of replacement parts, as applicable, is available.
4. Proposed Substitution will have no adverse effect on other trades and will not affect or delay progress as indicated on the current version of the Official Progress Schedule.
5. Cost and time data as stated above is complete and accurate
6. Contractor and, if applicable, Subcontractor waives right to Claim for additional costs and time related to accepted Substitution, which may subsequently become apparent.
7. Proposed Substitution does not affect dimensions and functional clearances.
8. Coordination, installation, and changes in the Work as necessary for accepted Substitution have been or will be performed in all respects.

Contractor's Certification:

Submitted by: _____ Signed by: _____

Firm: _____ Phone: _____

Address: _____

Subcontractor's Certification:

Submitted by: _____ Signed by: _____

Firm: _____ Phone: _____

Address: _____

List Attachments:

- 1.
- 2.

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DESIGNER OF RECORD REVIEW AND ACTION

Substitution Recommended - Make Submittals in accordance with Section 01 3300, "Submittals".

Substitution Recommended as Noted - Make submittals in accordance with Section 01 3300, (Submittals).

Substitution Rejected - Use specified Products.

Substitution Request Received too late - Use specified Products.

Signed by: _____ Date: _____

Additional Comments: Contractor Subcontractor Supplier Manufacturer Architect _____

OWNER ACCEPTANCE

Substitution Accepted - Make submittals in accordance with Section 01 3300, "Submittals".

Substitution Accepted as Noted - Make submittals in accordance with Section 01 3300, "Submittals".

Substitution Rejected - Use specified Products.

Substitution Request Received too late - Use specified Products.

Signed by: _____ Date: _____

Owner's Authorized Representative

END OF FORM 01 6300-F1

END OF DOCUMENT 01 6300

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DOCUMENT 01 6400

OWNER FURNISHED OWNER INSTALLED/CONTRACTOR INSTALLED (OFOI/OFCI) ITEMS

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 – OFOI/OFCI Manager
 - e. 1.05 – Purchase Orders
 - f. 1.06 – OFOI/OFCI Delivery Schedule
 - g. 1.07 – Shipment Delivery
 - h. 1.08 – Shipment Receiving Log
 - i. 1.09 – Storage
 - j. 1.10 – Inspection of Records
 - k. 1.11 – Damaged Merchandise
 - 2. Article II – Products
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms
 - a. SAMPLE FORM 01 6400-F1, “OFCI DELIVERY SCHEDULE”

1.02. Related Documents and Sections (Not Used)

1.03. Definitions

- A. **OFOI** – Owner Furnished Owner Installed
- B. **OFCI** – Owner Furnished Contractor Installed
- C. **OFOI/OFCI Coordination** – Contractor is responsible to assign staff to support coordination with the Owner for managing all OFOI/OFCI items.
- D. **OFOI/OFCI Delivery Schedule** – The OFOI/OFCI Delivery Schedule prepared by the Contractor and submitted to the Owner in the format indicated in SAMPLE FORM 01 6400-F1 at the end of Section 01 6400.

1.04. OFOI/OFCI Coordination

- A. Prior to starting Work, OFOI/OFCI Coordination responsibility includes the following:
 - 1. Furnishing information to the Owner’s Project Manager on desired delivery dates.
 - 2. Proper receipt and reporting of all shipments received.
 - 3. Proper storage and handling of OFOI/OFCI items at all times.

1.05. Purchase Orders

- A. The Owner will furnish copies of purchase orders covering OFOI/OFCI items.
 - 1. The nature of the procurement actions involved prevents the furnishing of a complete set of purchase orders immediately after the start of construction.
 - 2. Purchase Orders will be forwarded to Contractor at the time of issuance to the suppliers.
 - 3. Contractor must retain copies of Owner’s Purchase Order(s) for the Contractor’s control records.
 - 4. Purchase Orders for items subject to “phased” delivery will be accompanied by appropriate delivery lists.

1.06. OFOI/OFCI Delivery Schedule

- A. Contractor shall develop an OFOI/ OFCI Delivery Schedule including description and required delivery dates (see sample Schedule at the end of this Section) for OFOI/OFCI items and reference all related Activity Numbers from the Contractor’s CPM Progress Schedule, and

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submit to Owner no later than thirty (30) Days after the start date for the Work identified in the FF&E Notice To Proceed (NTP). Submit three (3) paper copies and corresponding electronic data files to the owner.

- B. This OFOI/OFCl Delivery Schedule must include each piece of OFOI/OFCl item.
 - 1. For each item, complete the two dates required from the Contractor:
 - a. "Delivery No Earlier Than" date
 - b. "Delivery No Later Than" date.
- C. Contractor must add PO #, date ordered information, and Activity Numbers from the CPM Progress Schedule as the information is provided or becomes available.
- D. This OFOI/OFCl Delivery Schedule must be coordinated with the Owner accepted Official Progress Schedule
- E. Each month, coordinate the OFOI/OFCl Delivery Schedule with the Updated CPM Progress Schedule.
 - 1. Review the OFOI/OFCl delivery schedule not less than once each month to determine whether the construction progress dictates any revisions.
 - a. Notify Owner in writing of any changes found necessary.
 - b. If, at any time, a delivery date for and OFOI/OFCl item is missed, notify Owner immediately.

1.07. Shipment Delivery

- A. Upon receipt of a shipment of OFOI/OFCl item(s), the Contractor shall coordinate the following:
 - 1. Count the number of cartons to verify the quantity received corresponds with the freight bill.
 - a. Clearly note any discrepancies on the original freight bill or delivery ticket.
 - 2. Prior to signing for anything, carefully examine the merchandise for obvious damage
 - a. If such damage is observed, refuse the shipment.
 - b. Upon refusal, notify the Owner, and give complete details.
 - 3. Open cartons or uncrate item(2) to permit examination prior to departure of the carrier.
 - a. If the size of the shipment makes this impossible, release the driver and inspect the shipment for concealed damage not later than 24 hours after receipt.
 - b. If it is determined concealed damage does exist, contact Owner immediately.

1.08. Shipment Receiving Log

- A. Keep a "Shipment Receiving Log," updated at all times, at the Job Site.
- B. The "Shipment Receiving Log" must be in a format furnished or Approved by the Owner.

1.09. Storage

- A. Store all OFOI/OFCl items in a secure area either on-site or off-site.
 - 1. The area must be lockable and secure from vandalism or theft.
 - 2. It must be weatherproof and waterproof with adequate ventilation.
 - 3. Provide protection and security of OFOI/OFCl items.
- B. Provide Certificates of Insurance for all off-site storage areas in accordance with the requirements of the Contract Documents.

1.10. Inspection Of Records

- A. The Owner may inspect the Owner-furnished item records on a periodic basis during construction to assure that the data is maintained in an accurate and current condition.

1.11. Damaged Merchandise

- A. Exterior or Visible Damage.
 - 1. If Damage:
 - a. If container received shows no evidence of damage, but upon examination of the contents thereof "concealed damage" is discovered, notify the Owner immediately and request an inspection.

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- B. F.O.B. (Freight on Board) Shipping Point.
1. If the merchandise is damaged Contractor must:
 - a. Request an inspection by the delivery carrier's inspector. Do not destroy the original carton, box, etc.
 - b. Notify the Owner of damaged merchandise and request replacement shipment.
 - c. Submit the following to Owner, Attention: Owner's Project Manager:
 - i. Inspection Report
 - ii. Bill of Lading
 - iii. Invoice
 - iv. Freight Bill or Delivery Ticket
 - d. Hold the damaged merchandise until instructions for its disposition are received from the Owner.
- C. F.O.B. (Freight on Board) Destination.
1. If the merchandise is damaged and the F.O.B. is "Destination," then the complete and total liability is assumed by the Vendor from the point it is placed in the hands of the common carrier to the point of delivery. It is the Vendor's responsibility to file a claim with the carrier to recover the loss of merchandise damaged.
 2. The Contractor must:
 - a. Request an inspection by the delivery carrier's inspector. Do not destroy the original carton, box, etc.
 - b. Notify the Vendor of damaged merchandise and obtain authorization from Owner and replace shipment.
 - c. Hold damaged merchandise until instructions for disposition are received from the Vendor.
 - d. Send the following original documents to the Vendor to assist in filing claim with carrier, retaining a copy for Contractor's records:
 - i. Inspection Report
 - ii. Bill of Lading
 - iii. Freight Bill or Delivery Ticket

ARTICLE II – PRODUCTS (NOT USED)

ARTICLE III – EXECUTION (NOT USED)

ARTICLE IV – FORMS

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DOCUMENT 01 7250

SURVEYING AND FIELD ENGINEERING

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 – Field Layout
 - e. 1.05 – Locations and Elevations in the Contract Drawings
 - f. 1.06 – Survey and Site Work
 - g. 1.07 – Underground Infrastructure, Utilities & Other Facilities
 - h. 1.08 – Penetrations
 - i. 1.09 – Quality Assurance
 - j. 1.10 – Submittals
 - 2. Article II – Products
 - a. 2.01 - Equipment
 - 3. Article III – Execution
 - a. 3.01 - Survey
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections (Not Used)

1.03. Definitions

- A. As used in this Section 01 7250, “Surveying and Field Engineering”, the following definitions apply:
 - 1. Approximate Location of Subsurface Installations – A strip of land not more than 24 inches on either side of the exterior surface of an Existing Subsurface Installation.
 - 2. Existing Subsurface Installation - Any existing underground pipeline, conduit, duct, wire, or other structure.
 - 3. Rearranged - Rearrangement includes relocation, removal, alteration or installation.

1.04. Field Layout

- A. Contractor is responsible for all investigations, coordination, techniques and determinations as may be necessary to properly fit, Install and complete the Work.
- B. Data and information shown and indicated in the Contract Documents are as accurate as could be obtained but are not guaranteed.
- C. Contractor must, before beginning any Work, compare actual Project Site conditions with the requirements of the Contract Documents, and verify all existing conditions and dimensions.
- D. Verifications.
 - 1. As a minimum, Contractor must perform the following verifications:
 - a. Field & Site Conditions
 - i. Contractor must carefully examine and compare all the Contract Documents relating to the Work with actual field conditions, so that all Work will be accommodated in the spaces provided. The general arrangement and location of the elements of the various systems are shown on the Drawings or specified. Final locations, levels, etc., are governed by actual material sizes used, by conditions encountered, and by the sequence in which the Work is performed.
 - ii. Space conflicts and interferences must be resolved before any Work is installed.
 - 2. Dimensions.
 - a. Contractor, prior to performing any Work and as a part of the construction layout procedures, must check and verify all dimensions for accuracy, closing and clarity, and must immediately report any discrepancies to Owner for resolution before proceeding.

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- b. No measurements shall be scaled from Drawings. Only dimensions appearing on Drawings will be used.
 - c. Where manufacturer's diagrams, Shop Drawings, etc. give specific measurements of rough-in dimensions for materials or equipment and these dimensions are in conflict with dimensions indicated on Drawings, Contractor must immediately request clarifications from Owner.
 - d. In case of apparent error, discrepancy, omission, conflict, or obscurity in the Contract Documents, or discrepant conditions encountered at the Project Site or between Submittals, Contractor must immediately refer the matter to Owner for interpretation and/or clarification.
- E. Contractor must Provide necessary lines, levels, locations, measurements and markers for all on the Work and be responsible for their accuracy.
- F. On building structures, Contractor must lay out on forms, walls, floors, and columns, the exact location of partitions as a guide to all trades.

1.05. Locations and Elevations in the Contract Drawings

- A. Property lines, location lines, and elevations of components of the Work are shown on the Contract Drawings.
- B. Grade elevations shown for various parts of the Work are taken from a bench mark shown on the Contract Drawings, or if not shown, will be designated by the Owner in writing before starting Work.

1.06. Survey and Site Work

- A. Contractor must perform all survey and site Work necessary to locate and layout the construction in plan and elevation.
- B. Contractor must set all stakes and marks necessary to establish the lines and grades required for the Project, and perform all survey work to layout all Work including batter boards, roads, parking lots, site utilities, and control lines.
- C. Contractor must protect and maintain marks, lines, benchmarks, monuments, etc. which have previously been installed and/or are required for construction and inspection purposes. Monuments or stakes that are disturbed or destroyed due to Contractor's negligence or failure to pursue the Work diligently must be re-established at Contractor's expense.

1.07. Underground Infrastructure, Utilities & Other Facilities

- A. Attention is directed to California Government Code § 4215 and § 4216 concerning protection of underground infrastructure in public contracts.
- B. Contractor must ascertain the exact location of all underground and concealed facilities in the Project area prior to doing any work that may damage such facilities or interfere with their service. As a minimum, at least forty-eight (48) hours before any such work is planned, Contractor must have a locating service survey the area. When shown on the Drawings, the locations of Existing Subsurface Installations are the Approximate Location of Subsurface Installations, and the accuracy or completeness of this information is not guaranteed. There may be Existing Subsurface Installations not known to Owner or located differently than indicated in the Contract Documents.
- C. Contractor shall perform any pot-holing, scanning or other investigational equipment necessary to confirm the exact location of known utility runs.
- D. Contractor must protect from damage, utilities and any other Existing Subsurface Installations that are to remain in place, be relocated, or otherwise Rearranged. As used herein, rearrangement includes relocation, removal, alteration or installation.
- E. If Contractor discovers underground facilities not indicated in the Contract Documents, Contractor must immediately notify Owner in writing. Contractor must not disturb, disconnect or damage any existing facilities, unless specifically indicated in the Contract Documents to be relocated, removed, or otherwise revised. Should Contractor disturb, disconnect, or damage any existing facilities or utilities, Contractor will bear all expenses of whatever nature arising from such disturbance or the replacement or repair thereof.

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- F. The right is reserved to the owners of facilities or their authorized agents, to enter the Project with Owner's approval to make such changes as are necessary to rearrange their facilities or to make necessary corrections or repairs to their properties. Contractor must cooperate with forces engaged in such work and must conduct operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by such other forces.
- G. Contractor must obtain authorization from the utility involved and notify Owner at least 72 hours in advance, when it is necessary to interrupt any existing utility service to make connections. Interruption in utility service must be of the shortest possible duration for the Work at hand and must be Approved in advance by Owner.
- H. Where rearrangement of facilities is necessary, Contractor must coordinate its Work with such rearrangement, and Contractor must make all arrangements with the owner of such facilities for such coordination.
- I. When ordered by Owner in writing, Contractor will rearrange any facility necessary to accomplish the Project and such work will be paid for as extra Work if it is not indicated in, or cannot reasonably be inferred from, the Contract Documents.
- J. If Contractor desires to rearrange any utility or facility for its convenience in order to facilitate its construction operations, and if such rearrangement is in addition to, or different from any rearrangements indicated in the Contract Documents, Contractor must make all necessary arrangements with Owner and the owners of such utility or facility for such rearrangement and bear all expenses in connection therewith.
- K. Where Owner determines that rearrangement of a utility or facility, the existence of which is not shown in the Contract Documents, is essential to accommodate the Project, Owner may rearrange such utility or facility by other forces.
- L. Per Government Code § 4215, Contractor will not be assessed Liquidated Damages for any delay in completing the Project when such delay is caused by the failure of a utility owner or the County to remove or relocate existing utilities that were the responsibility of the utility owner or County to remove or relocate.

1.08. Penetrations

- A. Contractor is responsible for all penetrations through walls, floors, beams, joists and other structural and non-structural elements of the Work for passage of pipes, conduits, ducts or other devices.
- B. Contractor is responsible for coordinating all penetrations and securing Owner's approval for locations of all penetrations through structural floors, walls and supporting members.
- C. Owner will provide results of special inspection to locate reinforcing bars or imbedded items within concrete or masonry walls, floors, columns or beams.

1.09. Quality Assurance

- A. Surveys must be performed under the direction and with the review of a land surveyor licensed in the State of California.
- B. All survey documentation must be signed and stamped by the licensed Land Surveyor in responsible charge of the work.
- C. The Contractor must review all information to ensure it is technically accurate and complies with the requirements of this Document 01 7250 (Surveying and Field Engineering), before providing to the Owner.

1.10. Submittals

- A. Prior to performing any survey Work, submit three (3) paper copies and an electronic copy to the Owner of the qualifications of the California Licensed land surveyor.
- B. Contractor must submit three (3) paper copies and an electronic copy to the Owner of Contractor's survey records to the Owner as part of the Record Set at the Substantial Completion of each Project Component.

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ARTICLE II – PRODUCTS

2.01. Equipment

- A. The Contractor must provide necessary survey equipment and materials to obtain the required locations and elevations to the precision specified.

ARTICLE III – EXECUTION

3.01. Survey

- A. Elevation surveys must be referenced to the County of San Mateo datum, and must be performed to within one one-hundredth (0.01) of a foot (ft.), unless otherwise specified.
- B. Location surveys must be referenced to the baseline and survey control points shown on the Contract Drawings. Locations must be provided to within one one-hundredth (0.01) of a foot (ft.), unless otherwise specified.
- C. The Contractor's survey records must be made available and/or submitted to the Owner when requested by Owner.

ARTICLE IV – FORMS (NOT USED)

END OF DOCUMENT 01 7250

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DOCUMENT 01 7310

CUTTING AND PATCHING

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 – General
 - e. 1.05 – Interface with Work of Others
 - f. 1.06 – Submittals
 - g. 1.07 – Quality Control
 - 2. Article II – Products
 - a. 2.01 – Materials
 - 3. Article III – Execution
 - a. 3.01 – Examination
 - b. 3.02 – Preparation
 - c. 3.03 – Cutting
 - d. 3.04 – Patching
 - e. 3.05 – Performance
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections (Not Used)

1.03. Definitions

- A. Cutting-and-patching. Includes, but is not necessarily limited to, demolition and repair of nominally completed and previously existing work in order to accommodate coordination of Work, installation of Work, uncovering Work for access or inspection, and to obtain samples for testing or similar purposes. It also includes integral cutting and patching during manufacturing, fabricating, erecting, and installing processes for individual items of the Work.
- B. Hot Work. Hot work includes any operations capable of initiating fires or explosions, including cutting, welding, brazing, soldering, grinding, thermal spraying, thawing pipe, torch applied roofing, sparking tools, or any other similar activity.

1.04. General

- A. Contractor is responsible for all cutting, fitting, or patching required to complete the Work and to make its parts fit together properly.
- B. Contractor must rework and patch to match existing surfaces at removed or demolished items.
- C. Patching must achieve security, strength, and weather protection, and must preserve continuity of existing fire ratings.
- D. Patching must successfully duplicate undisturbed adjacent finishes, colors, textures, and profiles. Where there is disagreement as to whether duplication is successful or has been achieved to a reasonable degree, the Owner's judgment shall be final.

1.05. Interface with Work of Others

- A. The Contractor is responsible for any and all cutting, fitting and patching required to join its Work with the work of others, except as otherwise specifically stated for in the Contract Documents.
- B. Contractor must not cut or otherwise alter the work of Owner or any separate contractor except with the written consent of Owner and such separate contractor.

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- C. Contractor must include interface flags in their Progress Schedule indicating points of interface of its Work with the work of others.

1.06. Submittals

- A. Comply with requirements of Document 01 3300 (Submittals).
- B. Submit written request to Owner in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
 - 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.
 - d. Description of proposed Work and Products to be used.
 - e. Method for keeping existing utilities in service.
 - f. Alternatives to cutting and patching.
 - g. Date and time the Work will be executed.
 - h. Anticipated results in terms of variations from originally completed Work.
 - i. Where applicable include a description of circumstances which led to need for cutting and patching.
- A. Review by Owner or Design Professional prior to proceeding with proposed cutting-and-patching does not negate Owner's right to later require complete removal and replacement of Work found to be cut and patched in an unsatisfactory manner.
- B. Where cutting and patching involves addition of reinforcement to structural elements, obtain details and engineering calculations prepared by California Registered Structural Engineer indicating how reinforcement is to be integrated with the original structure.
- C. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out of service. Indicate how long utility service will be disrupted.

1.07. Quality Control

- A. Requirements for Structural Work.
 - 1. Do not cut and patch structural Work in manner resulting in reduction of load-carrying capacity or load/deflection ratio.
 - 2. Obtain Owner's written acceptance of Submittal before proceeding with cutting and patching of structural steel, structural concrete, foundation construction, basement or retaining walls, curtain walls, pressurized piping, vessels, and equipment.
- B. Operational and Safety Limitations.
 - 1. Do not cut and patch operational elements or safety-related components in manner resulting in reduction of capacities to perform as intended or resulting in decreased operational life, increased maintenance, or decreased safety.
 - 2. Obtain Owner's acceptance of Submittal before proceeding with cutting and patching primary operational systems and equipment; water, moisture, vapor, air, or smoke barriers; membranes and flashings; noise and vibration control elements and systems; control, communication, conveying, and electrical wiring systems; and similar categories.

ARTICLE II – PRODUCTS

2.01. Materials

- A. For replacement of Work removed, use only materials that comply with the pertinent requirements of the Contract Documents. (Those required and accepted for original installation.)
- B. For any proposed change in materials, Submit request for Substitution as described in Section 01 6300 (Product Substitution Procedures).

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ARTICLE III – EXECUTION

3.01. Examination

- A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during fitting, cutting and patching.
- B. After uncovering existing Work, assess conditions affecting performance of work.

3.02. Preparation

- A. Provide temporary supports to ensure structural integrity of the Work.
- B. If Hot Work is involved, comply with the requirements of Document 01 5000.1.07.O, (Hot Work).
- C. Provide devices and methods to protect other portions of Project from damage.
- D. Provide protection from elements for areas that may be exposed by uncovering work.
- E. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- F. Except as otherwise indicated, proceed with cutting and patching at earliest feasible time in each instance, and perform work promptly.
- G. Post required permits.

3.03. Cutting

- A. Cut by methods least likely to damage retained and adjoining Work.
- B. Review proposed procedure with original installer where possible, and comply with installer's recommendations.
- C. Uncover work to install improperly sequenced work.
- D. Remove and replace defective or non-conforming work.
- E. Remove samples of installed work for testing when requested.
- F. Provide openings in the Work for penetration of mechanical and electrical work.
- G. Employ original installer or fabricator where possible to perform cutting for:
 - 1. Weather exposed and moisture resistant elements; or
 - 2. Visually exposed surfaces.
- H. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- I. Comply with requirements of the Civil Drawings, where cutting and patching requires excavating and backfilling.

3.04. Patching

- A. Execute patching to complement adjacent Work.
- B. Fit Products together to integrate with other Work.
- C. Avoid damage to other Work and provide appropriate surfaces to receive patching and finishing.
- D. Employ original installer where possible to perform patching for weather exposed and moisture resistant elements, and visually exposed surfaces.
- E. Restore patched areas with new Products in accordance with requirements of Contract Documents.
- F. Fit patches tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

3.05. Performance

- A. Performing cutting or patching operations means acceptance of existing conditions by Contractor.
- B. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
- C. By-pass utility services such as pipe or conduit, before cutting, where services are required to be removed, relocated or abandoned.
 - 1. Remove pipe or conduit in walls to be relocated, abandoned or removed.
 - 2. Cap, valve or plug, and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and removing.
- D. Where feasible, inspect and test patched areas to demonstrate integrity of installation.
- E. Remove and replace Work judged by Designer of Record to be visually unsatisfactory.

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- F. Perform cutting, fitting and patching in a manner to prevent damage to Contractor's Work and work by others and to provide proper surfaces for the installation of materials, equipment, and repairs.
- G. Do not cut nor alter structural members without prior written acceptance of Owner.
- H. Adjust and fit Products to provide a neat installation.
- I. Refinish cut and patched surfaces to match adjacent finish.
 - 1. For continuous surfaces, refinish to nearest intersection or natural break.
 - 2. For an assembly, refinish entire assembly.
- J. Over patched wall or ceiling surfaces, refinish to nearest cut-off line for entire surface, such as intersection with adjacent wall or ceiling, beam, pilasters, or to nearest opening frame, unless otherwise indicated.
- K. Refinished surfaces must not present a spotty, touched-up appearance.

ARTICLE IV – FORMS (NOT USED)

END OF DOCUMENT 01 7310

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SECTION 01 7400

CLEANING

ARTICLE I – GENERAL

1.01. Summary

- A. This Section includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents and Sections (Not Used)
 - c. 1.03 – Definitions
 - d. 1.04 - General Cleanup Responsibility
 - e. 1.05 - Immediate Cleanup Activities
 - f. 1.06 - Daily Cleanup Activities
 - g. 1.07 - Weekly Cleanup Activities
 - h. 1.08 - Owner’s Right to Cleanup
 - i. 1.09 - Storage and Disposal
 - j. 1.10 - Sand Blasting
 - k. 1.11 - Final Cleaning
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution (Not Used)
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections (Not Used)

1.03. Definitions (Not Used)

1.04. General Cleanup Responsibility

- A. Contractor must keep the Work areas, Project Site, and surrounding areas free from waste materials, debris, and/or trash and rubbish caused by its operations on a daily basis.
- B. In addition to trash and rubbish generated by Contractor’s operations, Contractor must keep the Work areas, Project Site, and surrounding areas free from trash and rubbish from any source that accumulates within the Work areas or Project Site or any other area designated by the Owner for use by Contractor on a daily basis.
- C. The Contractor must keep all surface areas (i.e., inside buildings, site roads, off-site streets, and parking areas) clear of dirt, mud, and debris and must clean such surfaces as required, as needed, or as Directed by the Owner’s Project Manager.
- D. Contractor’s and Subcontractors’ tools, scaffolding and surplus materials must be neatly stored in designated storage areas when not in use.
- E. Contractor must maintain the Project Site in a neat and orderly condition at all times.

1.05. Immediate Cleanup Activities

- A. Properly dispose of packaging materials and clean surrounding areas of packing debris immediately after unpacking of Products, materials, equipment, or other packaged items.
- B. Dispose of waste materials and clean surrounding areas used for worker breaks and lunch immediately after worker break or lunch. Contractor must provide trash receptacles in break and lunch areas.
- C. Contractor must immediately remove any spillage, dirt and mud, and/or debris resulting from Contractor’s hauling or other operations along or across any public traveled way or public area.
- D. Remove debris and rubbish from pipe chases, plenums, down spouts, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- E. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust on a continuous basis.

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1.06. Daily Cleanup Activities

- A. Cardboard, packing material, and similar combustible debris must not be accumulated within buildings and such debris, rubbish and waste material must be removed from buildings on a daily basis.
- B. Contractor must leave Work areas “broom clean”, or its equivalent, on a daily basis.
- C. Contractor must remove (pick up and place in trash receptacles) rubbish from and about areas of Work and the Project Site on a daily basis.
- D. Contractor must clean the Project Site entrance area(s) of mud, dirt, displaced gravel, and rubbish each day and on a continuous basis.

1.07. Weekly Cleanup Activities

- A. Remove rubbish (pick up and place in trash receptacles) from and about the Project Construction Fencing line. This includes areas both inside and outside of the Project Site along the Temporary and Construction Fencing and/or permanent perimeter fence line.
- B. Place concrete debris in designated areas or remove from Project Site.
- C. Stack unused shipping pallets in designated areas or remove from Project Site. Wood pallets are not permitted.
- D. Repair, replace, or remove damaged and/or torn plastic sheeting used to protect stored materials, Products or Work.
- E. Empty all trash receptacles
- F. Remove accumulated waste from the Project Site and dispose of in a proper and lawful manner.
- G. Organize and clean storage areas

1.08. Owner’s Right to Clean Up

- A. Deficient cleaning or disposal operations, as determined by the Owner’s Project Manager, must be immediately corrected by Contractor.
- B. After proper written notice, in cases where Contractor does not correct deficient cleaning or disposal operations, Owner may remove or cause to have removed waste materials, debris, and/or trash and rubbish, etc., and reduce the Contract Sum by the cost thereof.
- C. If a disagreement arises between the Contractor and other separate contractors performing work at or adjacent to the Project Site, as to the responsibility pursuant to their respective contracts for maintaining the Project Site and surrounding areas free from waste materials, debris, and/or trash and rubbish, Owner may clean up or cause to be cleaned up the waste materials, debris, and/or trash and rubbish and allocate the costs among those responsible, and reduce the Contract Sum by Contractor’s proportionate share of the cost thereof.

1.09. Storage and Disposal

- A. Storage.
 - 1. Waste materials, trash, and rubbish must be removed in covered containers and cannot be stored.
 - 2. Storage containers must not be allowed to overflow due to excessive waste materials, trash, and rubbish being placed in the storage container.
 - 3. Storage container lids must be unobstructed by waste materials, trash, and rubbish when they are in the closed position.
 - 4. Storage container lids must be closed at all times except when waste materials, trash, and rubbish are being placed into or removed from the storage container.
 - 5. Recyclable materials must be segregated before storage and stored in separate containers or areas.
- B. Disposal.
 - 1. Under no circumstances shall rubbish or waste material be disposed of in fills or backfills on the Project Site.
 - 2. Contractor is responsible for making all arrangements and paying all costs for disposal of waste materials, debris, and/or trash and rubbish.

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3. Waste materials, debris, and/or trash and rubbish, must be removed from the work area on a daily basis.
4. When any material is to be disposed of outside the Project area, at other than a public disposal or recycling facility, Contractor must first obtain a written permit from the property owner of the proposed disposal site, and furnish Owner said permit or a certified copy thereof together with a written release from the property owner absolving Owner from any and all responsibility in connection with the disposal of said material on said site.
5. Before any material is disposed of on said site, Contractor must obtain written permission from the Owner to dispose of the material at the location designated in said permit.
6. Disposal of Hazardous Materials must comply with all legal requirements, including but not limited to containerization, labeling, manifesting, transportation, disposal site, and use of properly trained personnel.
7. Contractor must submit two (2) copies of all Hazardous Waste Manifests signed by Toxic Substances Disposal Facilities (“TSDF’s”) and certificates of disposal at Substantial Completion of each Project Component to prove that Contractor has legally disposed of such materials.
8. Contractor must separate and recycle the following waste material types in accordance with Contractors Solid Waste Management Plan (see Document 01 5150, “Solid Waste Management and Recycling Plan”).
 - a. Concrete
 - b. Metal
 - i. Ferrous
 - ii. Non-ferrous
 - c. Wood
 - d. Debris
 - e. Glass
 - f. Paper
 - i. Bond
 - ii. Newsprint
 - iii. Cardboard and paper packaging materials
 - g. Others as appropriate

1.10. Sand Blasting

- A. Sand blasting shall be only used upon receipt of written permission of the Project Manager.
- B. Perform sand blasting by experienced mechanics using sound modulated power machinery designed for this use.
 1. Comply with all applicable regulatory agencies.
 2. Use blasting aggregate uniformly graded, free from all animal or vegetable material, and not larger than No. 30 grit.
 3. Air compressor must be capable of providing air at a pressure of 100-110 pounds at 210-300 cfm. Use blast nozzle of 5/16-inch orifice.
- C. Operation.
 1. Sand blast by the “flash” method.
 2. Pass continuously over the surface, to provide a uniform cutting of the surface, without pitting or excessive erosion of the base material.
 3. Exercise care to prevent corners or sharp edges from being broken or unduly rounded.
 4. Used aggregate must not be reused.
 5. Protect installed work of others from damage by blast, rebound, or used aggregate.
 6. Cover and protect mechanical work, air intakes, and similar items, as well as finished surfaces.
- D. Replace damaged work.
- E. Secure and pay for necessary permits required by state and local authorities having jurisdiction.

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1.11. Final Cleaning

- A. Project Component Substantial Completion Certification(s).
 - 1. Contractor must, before requesting a Preliminary Walk-Through Inspection for Substantial Completion of each Project Component, perform a preliminary Cleaning of all Work areas associated with the Milestone.
- B. Project Component Final Completion Certification.
 - 1. Contractor must, before requesting a Preliminary Walk-Through Inspection for Final Inspection of the entire Work of the Project, perform a Final Cleaning of all Work areas and the Project Site.
- C. Final Cleaning Requirements.
 - 1. General.
 - a. Cleaning for specific items of Work as specified
 - b. Comply with manufacturer's instructions for cleaning operations.
 - c. Clean interior and exterior surfaces exposed to view
 - d. Remove labels that are not required as permanent labels.
 - e. Dust, dirt, stains, hand marks, paint spots, and like defects must be completely removed from surfaces.
 - f. Metal surfaces must be cleaned, using only non-corrosive and non-abrasive materials.
 - g. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - 2. Transparent Surfaces.
 - a. Clean all glass, interior and exterior, affected by Work of this Project; including removal of foreign material from glass.
 - b. Polish transparent and glossy surfaces
 - c. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances that are noticeable as vision-obscuring materials.
 - d. Replace broken glass and damaged transparent materials.
 - 3. Soft Surfaces.
 - a. Vacuum carpeted surfaces.
 - b. Vacuum all other soft surfaces.
 - 4. Hard Surfaces.
 - a. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of dust, stains, films, and similar noticeable distracting substances.
 - b. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces.
 - c. Restore reflective surfaces to original reflective condition.
 - d. Clean concrete floors in unoccupied spaces broom clean.
 - 5. Equipment and Fixtures.
 - a. Clean equipment and fixtures to sanitary condition
 - b. Replace filters on all mechanical and plumbing equipment.
 - c. Mechanically clean the interior of all ductwork and provide certification by a licensed duct cleaning professional.
 - d. Wipe surfaces of equipment and fixtures clean, including elevator equipment and similar equipment
 - e. Remove excess lubrication and other substances.
 - f. Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.
 - g. Clean food service equipment to a condition of sanitation ready and acceptable for intended food service use (if applicable).
 - 6. Roofs, gutters, downspouts and drainage systems.
 - a. Clean roofs, gutters, downspouts and drainage systems.
 - 7. Exterior Grounds.
 - a. Clean Project Site (yard and grounds), including landscape development areas, of litter, surplus materials, and foreign substances.

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- b. Sweep and power wash paved areas to clean condition; remove stains, petro-chemical spills, and other foreign deposits.
- c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- 8. Lights and Lamps.
 - a. Clean all light fixtures and lamps to function with full efficiency.

ARTICLE II – PRODUCTS (NOT USED)

ARTICLE III – EXECUTION (NOT USED)

ARTICLE IV – FORMS (NOT USED)

END OF DOCUMENT 01 7400

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**DOCUMENT 01 7700
CLOSEOUT PROCEDURES**

ARTICLE I – GENERAL

1.01. Summary

- A. Document Includes:
 - 1. Description of Contract closeout procedures including:
 - a. Removal of Temporary Construction Facilities
 - b. Substantial Completion
 - c. Final Completion
 - d. Final Cleaning
 - e. Project Record Documents
 - f. Material, Equipment and Finish Data
 - g. Project Guarantee
 - h. Warranties
 - i. Turn-In
 - j. Fire Inspection Coordination
 - k. Building Inspection Coordination
- B. Related Documents include:
 - a. 00 6301 Guaranty
 - b. 00 7200 General Conditions
 - c. 01 2900 Payment Procedures
 - d. 01 3200 Construction Progress Documentation
 - e. 01 3250 Record Documents (As-Built)
 - f. 01 4600 Testing Laboratory Services
 - g. 01 4500 Quality Control Process
 - h. 01 5000 Temporary Facilities and Controls
 - i. 01 5150 Solid Waste Management and Recycling Plan
 - j. 01 5700 Storm Water Pollution Prevention Plan
 - k. 01 7250 Surveying and Field Engineering
 - l. 01 7400 Cleaning
 - m. 01 7800 Closeout Submittals
 - n. 01 7820 Operation and Maintenance Data
 - o. 01 8200 Demonstration and Training
 - p. 01 9100 Commissioning (To be issued)

1.02. Removal of Temporary Construction Facilities – at Substantial Completion for each Project Component

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore permanent facilities used during construction to original condition or better,
- D. Comply with removal requirements of Document 01 5000 (Temporary Facilities and Controls).

1.03. Substantial Completion – for each Project Component

- A. When Contractor considers Work or designated portion of the Work as Substantially Complete, submit written notice to Owner Representative and Architect/Engineer, with list of items remaining to be completed or corrected.
- B. Within reasonable time, Owner Representative and/or Architect/Engineer will inspect to determine status of completion.
- C. Should Owner determine that Work is not Substantially Complete, Owner will promptly notify Contractor in writing, listing all defects and omissions.

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- D. Remedy deficiencies and send a second written notice of Substantial Completion. Owner will re-inspect the Work. If deficiencies previously noted are not corrected on re-inspection, then Contractor shall pay Owner cost of the re-inspection.
- E. When the Owner and Architect are in agreement that Work is Substantially Complete, the Architect will issue a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified by Owner.
- F. Manufactured units, equipment and systems that require startup must have been completely operational and successfully tested for periods prescribed by Owner before a Certificate of Substantial Completion will be issued.
- G. A punch list examination will be performed upon Substantial Completion. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, Contractor will reimburse Owner for costs associated with these additional visits.

1.04. Final Completion and Acceptance

A. Use Before Acceptance.

- 1. Owner has the right to utilize or place into service any item of equipment or other usable portion of the Work before Acceptance of the entire Project. Whenever Owner plans to exercise said right, Owner will notify Contractor in writing, identifying the specific portion or portions of the Work to be so utilized or otherwise placed into service, hereinafter referred to as "Use Before Acceptance".
- 2. Until Owner issues such written notification, Contractor is responsible for all care and maintenance of all items or portions of the Work.
- 3. Upon Owner's issuance of written notice of Use Before Acceptance, Owner accepts responsibility for the protection and maintenance of all such items or portions of the Work described in the written notice, excepting any injury or damage resulting from Contractor's actions or negligence.
- 4. If, by reason of Owner's Use Before Acceptance, the premium for the Contractor's bodily injury and property damage insurance is increased, Owner will reimburse the Contractor for the additional amount necessarily incurred, allocable to the area and the period of Owner's occupancy, up to the Date of Acceptance of the Work.
- 5. Owner's Use Before Acceptance does not constitute Acceptance of the Work, or any portion of the Work, by Owner, nor will it relieve the Contractor of responsibility for correcting defective and/or Deficient Work or materials found at any time before Acceptance of the Work or during the Guarantee period after Owner's Acceptance. However, when the Project includes separate buildings, and one or more of the buildings is entirely occupied by Owner, then upon written request by the Contractor and by written consent from Owner, the Guarantee period on the building entirely occupied by Owner will commence to run from the date of Owner occupancy of such building or buildings.
- 6. Notwithstanding any Use Before Acceptance, Contractor retains full responsibility for fulfillment of all the requirements of the Contract Documents.

B. Contractor's List Of Incomplete Work.

- 1. Near the final completion of each Project Component, but not less than thirty (30) Days prior to anticipated date of Final Inspection, Contractor must conduct a detailed inspection of the Project, and submit three (3) paper copies and an electronic copy on flash drive the list of Incomplete Work with a schedule for final completion thereof to Owner's Project Manager.
- 2. Within fourteen (14) Days after receipt of Contractor's list of Incomplete Work and schedule for final completion, Owner's Project Manager will determine appropriate dates for a Preliminary Walk-Through inspection and the Final Inspection. The Preliminary Walk-Through Inspection and Final Inspection will not be conducted until the entire Work of the Project Component is complete.
- 3. Contractor must include activities showing submission of Contractor's List of Incomplete Work, Preliminary Walk-Through Inspection, and Final Inspection in Contractor's Progress Schedule.

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- C. Contractor's Certification That All Work Of The Project Is Complete.
1. When all Work is complete and after the Contractor has performed the final cleaning, Contractor must so certify to Owner's Project Manager and request a Preliminary Walk-Through Inspection.
 2. If the Contract Documents include a Milestone for the completion of the entire Work of the Project, two (2) paper copies and an electronic copy on flash drive to the Owner of the Milestone Completion certification must be submitted concurrently with the Contractor's certification that all the Work of the Project is complete as required by the Contract Documents.
- D. Preliminary Walk-Through Inspection.
1. Within seven (7) days of receipt of Contractor's certification that all Work is complete, Owner's Project Manager/Project Inspector and design team will make a Preliminary Walk-Through Inspection with Contractor to verify that the Project is complete and ready for Final Inspection.
 2. If Owner's Project Manager determines that the Work is not complete, Contractor will be notified in writing. Contractor must complete the Work and re-initiate procedures for another Preliminary Walk-Through Inspection. At Owner's discretion, any costs to Owner for additional Preliminary Walk-through Inspections may be charged to the Contractor.
- E. Final Inspection.
1. The Final Inspection will occur within fourteen (14) days of the Contractor's certification of final completion if the Owner's Project Manager agrees with the Contractor's certification.
 2. If Owner's Project Manager determines the completed Work is deficient, Contractor will be furnished with a Punchlist identifying the observed deficiencies in the completed Work. After all deficiencies have been corrected, Contractor must initiate procedures for another Final Inspection. If Contractor requests more than two (2) Final Inspections, at Owner's discretion, any costs to Owner for additional Final Inspections may be charged to the Contractor.
 3. Contractor's Progress Schedule must include activities for Final Inspection.
- F. Not Used
- G. Acceptance Of The Work.
1. Owner's Acceptance establishes conformity with the Contract except for delays in completion, latent defects, fraud, or such gross errors as amount to fraud, willful misconduct, or gross negligence, and subject to any Guarantee and Warranty, express or implied.
- H. Final Payment.
1. Provided that Owner has received all lien releases and certified payroll records as required by Document 01 2900 (Payment Procedures) and recorded a Notice of Completion, thirty-five (35) Days after the date of recording of the Notice of Completion by the County Recorder, Owner's Project Manager will forward a request for Final Payment for the Work done pursuant to the Contract to the County Controller for payment. Owner will withhold from Final Payment such amounts that are in dispute between Owner and Contractor, amounts subject to offset/setoff, and all other amounts that must be withheld by law (such as Stop Notice sums, incomplete, defective work, etc.).
 2. All estimates and payments made, including the final estimate and payment, are subject to correction and adjustment for clerical errors in the calculations involved in the determination of quantities and payments. Contractor and Owner agree to pay to the other any sum hereby due.
- I. Contractor's Duties and Responsibilities After Acceptance.
1. After Acceptance of the Work by Owner, Contractor is relieved of the duty of maintaining and protecting the entire Work, and Contractor is not required to perform any further Work thereon, except as otherwise required by law or the Contract Documents.
 2. Contractor is relieved of responsibility for injury to persons or property or damage to the Work that occurs after Owner's Acceptance, provided that such injury/damage is not in any way caused by Contractor.
 3. Owner's Acceptance does not relieve Contractor of responsibility for faulty workmanship or materials or of complying with the requirements of Warranties and Guarantees.

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- J. Retention Proceeds, Withholding and Disbursement.
1. Pursuant to California Public Contract Code § 7107, within sixty (60) days after the date of “Completion” of the Work, the retention withheld by Owner shall be released, subject to all withholds required and authorized by law including Stop Notice claims and Liquidated Damages (pursuant to California Government Code § 53069.85). In the event of a Dispute between Owner and Contractor, Owner may withhold from the Final Payment an amount not to exceed one hundred fifty percent (150%) of the Disputed amount.
 2. For purposes of release of retention, “Completion” means any of the following:
 - a. The occupation, beneficial use, and enjoyment of the entire Work, accompanied by cessation of labor on the work of improvement.
 - b. The Acceptance by Owner of the Work.
 - c. After the commencement of Work, a cessation of labor on the Work for a continuous period of one-hundred (100) Days or more, due to factors beyond Contractor’s control.
 - d. After the commencement of Work, a cessation of labor on the Work for a continuous period of thirty (30) Days or more, if Owner records a Notice of Cessation or a Notice of Completion with the County Recorder.
- K. Warranty & Guarantees.
1. Neither the final Acceptance, nor payment, nor any provision in the Contract Documents relieves Contractor of responsibility for faulty materials or workmanship.
 2. Contractor must Guarantee all workmanship and materials for a period of one (1) year, or as specified in the Contract Documents, from and after the Date of Substantial Completion of the Work by Owner. Contractor may also be required to furnish a written Guarantee covering all or certain items of Work for varying periods of time from the Date of Substantial Completion of the Project Component. The Work to be Guaranteed, the form, and the time limit of the Guarantee will be specified in the Contract Documents. Said Guarantee must be signed and submitted to Owner before Acceptance of the Work.
 3. The Guarantee period begins at the Date of Substantial Completion. Contractor must repair or replace all defective Work, together with any other Work affected by the repair or replacement during said Guarantee period without expense whatsoever to Owner.
 4. Approximately thirty (30) days before completion of the entire Work of the Project, Contractor must meet with Owner regarding Warranty/Guarantee requirements. Owner will establish communication procedures for notifying Contractor of Warranty defects, priorities regarding the type of defect, time required for Contractor response, and other details deemed necessary by Owner for execution of the Warranty/Guarantee.
 5. In the event of Contractor’s failure to comply with the requirements of any Warranty/Guarantee required by the Contract Documents within three (3) calendar days after being notified in writing, Owner may proceed to have the defects repaired and made good at the expense of Contractor who must pay all costs and charges immediately upon demand.
 6. Contractor agrees to provide Owner with documentation of all product warranties provided by product manufacturer and/or distributor.

ARTICLE II - PRODUCTS – NOT USED

ARTICLE III - EXECUTION – NOT USED

END OF DOCUMENT 01 7700

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DOCUMENT 01 7800

CLOSEOUT SUBMITTALS

ARTICLE I – GENERAL

1.01. Summary

- A. This Document specifies general, administrative and procedural requirements for Project Record Documents. Contractor shall have complete responsibility for preparation of marked-up and final Record Documents.
- B. Project Record Documents required include:
 - 1. Marked-up copies of Contract Drawings.
 - 2. Marked-up copies of Shop Drawings and Coordination Drawings, including Contractor's design documents and drawings.
 - 3. Newly prepared Drawings.
 - 4. Marked-up copies of Project Manual/Specifications, Addenda and Contract Modifications.
 - 5. Marked-up Project Data submittals.
 - 6. Record Samples.
 - 7. Field records for variable and concealed conditions.
 - 8. All undelivered photographs.
 - 9. Electronic source files in Revit, Navisworks, AutoCAD and other software applications (versions to be agreed upon at project commencement) used in the document production.
 - 10. Quality Control and Training Materials.
 - 11. Final, complete, edited and drafted versions of the above documents, provided in three (3) sets of hard copies and three (3) sets of electronic files on flash drives.
- C. Specific Project Record Documents requirements that expand requirements of this Document are included in the individual Sections of Divisions 2 through 33.
- D. General Project closeout requirements are included in Document 01 7700 (Closeout Procedures).
- E. Maintenance of Documents and Samples.
 - 1. Store Project Record Documents and samples in the field office apart from Contract Documents used for construction.
 - 2. Project Record Documents are not permitted to be used for construction purposes.
 - 3. Maintain Project Record Documents in good order, and in a clean, dry, legible condition.
 - 4. Make documents and samples available at all times for inspection by Owner.
- F. During the construction period, Contractor shall maintain one (1) full-size set of the approved Construction Permit drawings and one (1) Project Manual for Contractor's use for recording as-built conditions.

1.02. Project Record Drawings

- A. Mark-up Procedure. During the construction period, maintain a set of Contract Drawings, Coordination Drawings and Shop Drawings for Project Record Document purposes. Label the cover of each document (on first sheet or page) 'PROJECT RECORD' in two (2.35") inches high printed letters and each page of the field set "PROJECT RECORD DRAWINGS" in neat large printed letters in the lower right-hand corner.
- B. Keep record documents current. Note: A reference by number to a Contract Modification, RFI, Supplemental Instruction or other such document is not acceptable as sufficient record information on any record document. Do not permanently conceal any Work until required information has been recorded.
 - 1. Mark these Drawings to indicate the actual installation where the installation varies 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 Drawings.
 - b. Revisions to details shown on the Drawings.

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- c. Depths of various elements of foundation in relation to main floor level or survey datum.
 - d. Horizontal and vertical location of underground duct banks, 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. Establish 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. Provide actual numbering of each electrical circuit.
 - h. Field changes of dimension and detail.
 - i. Revisions to routing of piping and conduits.
 - j. Revisions to electrical circuitry.
 - k. Actual equipment locations.
 - l. Duct size and routing.
 - m. Changes made by Contract Modification.
 - n. Details not on original Contract Drawings.
2. Mark completely and accurately Project 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. Mark Project Record Drawing sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.
 4. Mark important additional information that was either shown schematically or omitted from original Drawings.
 5. Note Construction Change Directive numbers; alternate numbers; Contract Modification numbers and similar identification.
 6. Responsibility 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 Project 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.
 7. See also Document 01 3250 (Record Documents As-Builts).
- C. Preparation of Final Record Drawings. Immediately prior to inspection for Certification of Substantial Completion, review completed marked-up Project Record Drawings with Owner. When authorized, prepare a full set of updated As-Built Model(s) in BIM, see Document 01 3120 (Building Information Modeling (BIM) and Coordination Drawings) and prints of Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on print sets. Delete, cloud, redraw/modify, and add details and notations where applicable. Identify and date each Drawing revision; include the printed designation 'PROJECT RECORD DRAWINGS' in a prominent location on each Drawing. Submit one (1) complete set of source files used in document production (Revit, Navisworks, AutoCAD and other formats) on flash drives and three (3) sets of prints for review.
 2. Refer instances of uncertainty requiring clarifications to Owner for resolution.
 3. Distribution: Whether or not changes and additional information were recorded, organize and bind original marked-up set of prints that were maintained during the construction period into manageable sets. Bind the set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets. Submit the marked-up Project Record Drawings set to Owner.
- D. Shop Drawings and Samples. Maintain as record documents; legibly annotate Shop Drawings and Samples to record changes.
- E. Incorporate all comments applicable that have been provided after the review(s).

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1.03. Project Record Project Manual (Specifications)

- A. During the construction period, Contractor shall maintain one (1) copy of the Project Manual, including addenda and modifications issued, for Project Record Document purposes.
 - 1. Mark the Project Record Manual to indicate the actual installation where the installation varies substantially from that indicated in Specifications and Modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, change order work, and information on concealed installation that would be difficult to identify or measure and record later.
 - a. In each Project Manual Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
 - b. Record the name of the manufacturer, catalog number, supplier and installer, and other information necessary to provide a record of selections made and to document coordination with Project Record Product Data submittals and maintenance manuals.
 - c. Note related Project Record Product Data, where applicable, for each principal product specified, indicate whether Project Record Product Data has been submitted in maintenance manual instead of submitted as Project Record Product Data.
- B. Upon completion of mark-up, submit Project Record Manual to Owner for Owner records.

1.04. Project Record Data

- A. During the construction period, Contractor shall maintain one (1) 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 from that indicated in Project Record Product Data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and 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 Contract Modifications 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 Owner for Owner 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. The prime Contractor is Responsible for mark-up and submittal of record Project Record Product Data for its own Work.

1.05. Material, Equipment and Finish Data

- A. Provide data for primary materials, equipment and finishes as required under each Project Manual/Specification section.
- B. Include additional information requested by Owner.
- C. Submit three (3) hard-copy sets prior to final inspection, bound in 8-1/2 inches by 11 inches three-ring binders with durable plastic covers, with typewritten table of contents for each volume. Concurrently, submit one (1) electronic set in PDF (one file for each separate item) on flash drive.
- D. Arrange by Project Manual division and give names, addresses, and telephone numbers of subcontractors and suppliers. List:
 - 1. Trade names.
 - 2. Model or type numbers.
 - 3. Assembly diagrams.
 - 4. Operating instructions.
 - 5. Cleaning instructions.
 - 6. Maintenance instructions.

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7. Recommended spare parts.
8. Product data.

1.06. Miscellaneous Closeout Submittals

- A. Refer to other Specification Sections for miscellaneous record keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to Owner for Owner records. Categories of requirements resulting in 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.

ARTICLE II – PRODUCTS

2.01. Not applicable to this Document.

ARTICLE III – EXECUTION

3.01. Recording

- A. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project. Owner will periodically review Project Record Documents to assure compliance with this requirement, and withhold five percent (5%) of any monthly progress payment until Project Record Documents are current.

3.02. Submittal

- A. At completion of Project, deliver three (3) paper copies and one (1) complete electronic copy on flash drive of Record Documents to Owner.
- B. Accompany submittal with transmittal letter containing:
1. Date
 2. Project title and number
 3. Contractor's name and address
 4. Number and title of each record document
 5. Certification that each document as submitted is complete and accurate, and signature of Contractor, or Contractor's authorized representative.

END OF DOCUMENT 01 7800

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DOCUMENT 01 7820

OPERATION AND MAINTENANCE DATA

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents And Sections
 - c. 1.03 – Definitions
 - d. 1.04 – Required O&M Documentation
 - e. 1.05 – Submittals
 - 2. Article II – Products
 - a. 2.01 – O&M Documentation Directory
 - b. 2.02 – Emergency Manuals
 - c. 2.03 – Operation Manuals
 - d. 2.04 – Required O&M Documentation
 - e. 2.05 – Systems and Equipment Maintenance Manual
 - f. 2.06 – Final Commissioning Report
 - 3. Article III – Execution
 - a. 3.01 – General
 - b. 3.02 – Manufacturers' Data
 - c. 3.03 – Drawings
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections

- A. None

1.03. Definitions

- A. **O&M** – Operations and Maintenance
- B. **O&M Documentation** – O&M Documentation Directory, Manuals, and Final Commissioning Report consisting of:
 - 1. O&M Documentation Directory
 - 2. Emergency Manual
 - 3. Operations Manual
 - 4. Product Maintenance Manual
 - 5. Systems and Equipment Maintenance Manual
 - 6. Final Commissioning Report
- C. **System** – An organized collection of parts, equipment, or subsystems united by regular interaction.
- D. **Subsystem** – A portion of a system with characteristics similar to a system.

1.04. Required O&M Documentation

- A. O&M Documentation Directory: Prepare a separately bound directory that provides an organized reference to all O&M Documentation.
- B. Emergency Manual: Assemble a complete set of emergency information including procedures for use by emergency personnel and by Owner's operating personnel for various types of emergencies.
- C. Operations Manual: Assemble information needed for daily operations and management of Systems and equipment.
- D. Product Maintenance Manual: Assemble a complete set of maintenance data indication care and maintenance of each product, material, and finish incorporated into the Work.

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- E. Systems and Equipment Maintenance Manual: Assemble information of each System, Subsystem, and piece of equipment not part of a System.
- F. Final Commissioning Report

1.05. Submittals

- A. **Initial Submittal:** Submit three (3) draft copies of each manual at least sixty (60) Days before achieving Substantial Completion of each Project Component of the Project.
- B. **Final Submittal:** Submit three (3) copies each manual in final form no later than fifteen (15) Days after Architects' certification that the entire Work of each Project Component.
- C. **Corrected Final Submittal:** Correct or modify each manual to comply with Owner's comments. Submit three (3) hard copies and one (1) set of electronic copies on flash drive of each corrected Final Submittal within fifteen (15) Days of receipt of Owner's comments on the Final Submittal.

ARTICLE II– PRODUCTS

2.01. O&M Documentation Directory

- A. Organization: Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with the same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.02. Emergency Manuals

- A. Include emergency information that must be immediately available during emergency situations to protect life and property and to minimize disruptions to building occupants.
- B. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Earthquake.
 - 4. Gas leak.
 - 5. Water leak.
 - 6. Power failure.
 - 7. Water outage.
 - 8. System, subsystem, or equipment failure.
 - 9. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:

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1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.
6. Material Safety Data sheets (MSDS), if applicable.

2.03. Operations Manual

- A. Include information needed for daily operations and management of systems and equipment.
- B. In addition to requirements in this Document, include operation data required in individual Technical Specification Sections and the following information:
 1. System, subsystem, and equipment descriptions.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
 1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- D. Operating Procedures: Include the following, as applicable:
 1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- F. Piped Systems: Diagram piping as installed and indicate color-coding where required for identification.

2.04. Product Maintenance Manual

- A. Content
 1. Organize manual into a separate section for each product, material, and finish.
 2. Include:
 - a. Source information
 - b. Product information
 - c. Maintenance procedures
 - d. Repair materials and sources
 - e. Warranties and bonds, as described below.

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- B. Source Information
 - 1. List each product included in manual identified by product name and arranged to match manual's table of contents.
 - 2. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Project Manual Section number and title.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds
 - 1. Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 2. Include procedures to follow and required notifications for warranty claims.

2.05. Systems and Equipment Maintenance Manual

- A. Content
 - 1. For each System, Subsystem, and piece of equipment not part of a system, include:
 - a. Source information
 - b. Manufacturers' maintenance documentation
 - c. Maintenance procedures
 - d. Maintenance and service schedules
 - e. Replacement parts list and source information
 - f. Maintenance service contracts
 - g. Warranty and bond information
- B. Source Information
 - 1. List each system, subsystem, and piece of equipment included in the manual, identified by product name and arranged to match manual's table of contents.
 - 2. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Project Manual Section number and title.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard printed maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training videotape, if available.

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- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Manufacturer's Suggested Spare Parts List: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

2.06. Final Commissioning Report

- A. The Contractor must prepare and submit a Final Commissioning Report summarizing all of the tasks, findings, and documenting the Commissioning process.
- B. The report must address the actual performance of the building systems in reference to the requirements of the Contract Documents.
- C. The report must include completed pre-functional inspection checklists, Functional Performance Testing records, diagnostic monitoring results, identified deficiencies, recommendations, and a summary of commissioning activities.
- D. The Final Commissioning Report must be included as part of the O&M Documentation Final Submittal

ARTICLE III – EXECUTION

3.01. General

- A. Organization
 - 1. Unless otherwise indicated, organize each manual into a separate section for each System and Subsystem, and a separate section for each piece of equipment not part of a system.
 - 2. Each manual must contain the following materials, in the order listed:
 - a. Title page.
 - b. Table of contents.
 - c. Manual contents.
- B. Title Page
 - 1. Enclose title page in transparent plastic sleeve.
 - 2. Include the following information:
 - a. Subject matter included in manual.
 - b. Name and address of Project.
 - c. Name and address of City.
 - d. Date of submittal.
 - e. Name, address, and telephone number of Contractor.
 - f. Name and address of Owner's Design Consultant.
 - g. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents
 - 1. List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Section number in the Project Manual.
 - 2. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents
 - 1. Organize into sets of manageable size.
 - 2. Arrange contents alphabetically by system, subsystem, and equipment.

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3. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Binders
1. Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 2. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components.
 3. Cross-reference other binders to provide essential information for proper operation or maintenance of equipment or system.
 4. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
- F. Dividers
1. Heavy-paper dividers with plastic-covered tabs for each section.
 2. Mark each tab to indicate contents.
 3. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Project Manual Section number and title.
- G. Protective Plastic Sleeves
1. Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
- H. Supplementary Text
1. Prepared on 8-1/2-by-11-inch, 20-lb/sq. ft. white bond paper.
- I. Drawings
1. Attach reinforced, punched binder tabs on drawings and bind with text.
 2. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 3. Do not place loose, oversize drawings in binder pockets.
 4. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

3.02. Manufacturers' Data

- A. Manufacturers' standard printed data
1. Include only sheets pertinent to product or component installed.
 2. Mark each sheet to identify each product or component incorporated into the Work.
 3. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents.
- B. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- C. Extraneous Data: Where contents of manuals include manufacturers' catalog pages, clearly indicate precise items included in this installation and delete, or otherwise clearly indicate, manufacturer's data with which this installation is not concerned.

3.03. Drawings

- A. Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams.
- B. Coordinate supplementary drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
- C. Do not use original Record Documents as part of operation and maintenance manuals.

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ARTICLE IV – FORMS (NOT USED)

END OF DOCUMENT 01 7820

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DOCUMENT 01 8200

DEMONSTRATION AND TRAINING

ARTICLE I – GENERAL

1.01. Summary

- A. This Document includes:
 - 1. Article I – General
 - a. 1.01 – Summary
 - b. 1.02 – Related Documents And Sections
 - c. 1.03 –Definitions
 - d. 1.04 – General
 - e. 1.05 – Pre-instruction Conference
 - f. 1.06 – Coordination
 - g. 1.07 – Instruction Program
 - 2. Article II – Products (Not Used)
 - 3. Article III – Execution
 - a. 3.01– Preparation
 - b. 3.02– Instruction
 - c. 3.03– Submittals
 - 4. Article IV – Forms (Not Used)

1.02. Related Documents and Sections

- A. None

1.03. Definitions

- A. Training Facilitator. A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor. A factory-authorized service representative, experienced in operation and maintenance procedures and training.

1.04. General

- A. Contractor must procure and pay for the services of a qualified Training Facilitator to prepare instruction program and training modules, to coordinate Instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Contractor must procure and pay for the services of qualified Instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Training requirements include:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.05. Pre-Instruction Conference

- A. Training Facilitator must schedule conduct a Pre-instruction Conference at the Project Site with:
 - 1. Owner's Commissioning Consultant (Mandatory Attendance Required)
 - 2. Contractor's Commissioning Agent (Mandatory Attendance Required)
 - 3. Owner's Building Operations Staff (Mandatory Attendance Required)
 - 4. Contractor's QC Manager (Mandatory Attendance Required)
 - 5. Owner's Project Manager (Mandatory Attendance Required)
 - 6. Contractor's Authorized Representative (Mandatory Attendance Required)

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- B. Review methods and procedures related to demonstration and training including, but not limited to, the following:
 - 1. Inspect and discuss locations and other facilities required for instruction.
 - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 - 3. Review required content of instruction.
 - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.
- C. Training Facilitator must take detailed minutes of the meeting and distribute to all participants.

1.06. Coordination

- A. Training Facilitator must coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Training Facilitator must coordinate Instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Training Facilitator must 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 Owner.

1.07. Instruction Program

- A. Program Structure. Training Facilitator must 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, and as follows:
 - 1. Motorized doors, including any **overhead coiling doors, overhead coiling grilles and automatic entrance doors**.
 - 2. Equipment, including any **projection screens, loading dock equipment, waste compactors and laboratory fume hoods**.
 - 3. Fire-protection systems, including **fire alarm, fire pumps and fire-extinguishing systems**.
 - 4. Intrusion detection systems.
 - 5. Conveying systems, including **elevators, pneumatic conveying systems and wheelchair lifts**.
 - 6. Laboratory equipment, including laboratory **air and vacuum** equipment and piping.
 - 7. Heat generation, including **boilers, feed water equipment, pumps, water distribution piping, etc**.
 - 8. Refrigeration systems.
 - 9. HVAC systems, including **air-handling equipment, air distribution systems, terminal equipment and devices**.
 - 10. HVAC instrumentation and controls.
 - 11. Electrical service and distribution, including **transformers, switchboards, panelboards, uninterruptible power supplies and motor controls**.
 - 12. Packaged engine generators, including **transfer switches**.
 - 13. Lighting equipment and controls.
 - 14. Communication systems, including **intercommunication, surveillance/security, clocks and programming, voice & data and television** equipment.
- B. Training Modules. Training Facilitator must 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. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.

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- f. Operating characteristics.
- g. Limiting conditions.
- h. Performance curves.
- C. Documentation. Review the following items in detail:
 - 1. Emergency manuals.
 - 2. Operations manuals.
 - 3. Maintenance manuals.
 - 4. Project Record Documents.
 - 5. Identification systems.
 - 6. Warranties and bonds.
 - 7. Maintenance service agreements and similar continuing commitments.
- D. Emergencies. Include the following, as applicable:
 - 1. Instructions on meaning of warnings, trouble indications, and error messages.
 - 2. Instructions on stopping.
 - 3. Shutdown instructions for each type of emergency.
 - 4. Operating instructions for conditions outside of normal operating limits.
 - 5. Sequences for electric or electronic systems.
 - 6. Special operating instructions and procedures.
- E. Operations. Include the following, as applicable:
 - 1. Startup procedures.
 - 2. Equipment or system break-in procedures.
 - 3. Routine and normal operating instructions.
 - 4. Regulation and control procedures.
 - 5. Control sequences.
 - 6. Safety procedures.
 - 7. Instructions on stopping.
 - 8. Normal shutdown instructions.
 - 9. Operating procedures for emergencies.
 - 10. Operating procedures for system, subsystem, or equipment failure.
 - 11. Seasonal and weekend operating instructions.
 - 12. Required sequences for electric or electronic systems.
 - 13. Special operating instructions and procedures.
- F. Adjustments. Include the following:
 - 1. Alignments.
 - 2. Checking adjustments.
 - 3. Noise and vibration adjustments.
 - 4. Economy and efficiency adjustments.
- G. Troubleshooting. Include the following:
 - 1. Diagnostic instructions.
 - 2. Test and inspection procedures.
- H. Maintenance. Include the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Procedures for routine cleaning
 - 5. Procedures for preventive maintenance.
 - 6. Procedures for routine maintenance.
 - 7. Instruction on use of special tools.
- I. Repairs. Include the following:
 - 1. Diagnosis instructions.
 - 2. Repair instructions.
 - 3. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 4. Instructions for identifying parts and components.
 - 5. Review of spare parts needed for operation and maintenance.

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ARTICLE II – PRODUCTS (NOT USED)

ARTICLE III – EXECUTION

3.01. Preparation

- A. Assemble educational materials necessary for instruction, including documentation and training module.
- B. Assemble training modules into a combined training manual.
- C. Set up instructional equipment at instruction location.

3.02. Instruction

- A. Contractor must provide Training Facilitator and Instructors.
- B. Owner will furnish personnel to describe:
 - 1. Basis of system design.
 - 2. Operational requirements, criteria, and regulatory requirements.
 - 3. Owner’s operational philosophy.
- C. Owner will furnish Contractor with names and positions of participants.
- D. Scheduling.
 - 1. Provide instruction at mutually agreed on times, consisting of four 4-hour sessions on-site at different dates and times as requested by Owner.
 - 2. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 3. Schedule training with Owner at least 21 days in advance of the training.
- E. Evaluation.
 - 1. At conclusion of each training module, assess and document each participant’s mastery of module by use of **an oral, a written or a demonstration** performance-based test.
- F. Demonstration and Training Video.
 - 1. Record each training module separately.
 - 2. Include in video classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 3. At beginning of each training module, record each chart containing learning objective and lesson outline. Provide Owner with six (6) electronic copies on flash drives of video of each training session conducted.
- G. Cleanup.
 - 1. Remove instructional equipment.
 - 2. Restore systems and equipment to condition existing before initial training use.

3.03. Submittals

- A. Instruction Program.
 - 1. At least six (6) weeks prior to scheduled training, submit four (4) copies of an outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors’ names for each training module.
 - 2. Include learning objective and outline for each training module.
- B. At completion of training, submit six (6) hard copies and six (6) electronic copies on flash drives of the complete training manual for Owner’s use.
- C. Qualification Data.
 - 1. Training Facilitator.
 - a. At least six (6) weeks prior to training, submit four (4) copies of the qualifications of Training Facilitator.
 - b. Include lists of completed projects with project names and addresses, names and addresses of architects and Owners, and other information specified
 - 2. Instructors.
 - a. At least six (6) weeks prior to training, submit two (2) copies of the qualifications of all Instructors.

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- b. Include lists of completed projects with project names and addresses, names and addresses of architects and Owners, and other information specified.
- 3. Cameraman.
 - a. At least six (6) weeks prior to training, submit two (2) copies of the qualifications of video cameraman.
 - b. Include lists of completed projects with project names and addresses, names and addresses of architects and Owners, and other information specified.
 - c. Include list of video equipment that will be used.
- D. Attendance Record. For each training module, submit four (4) copies of the list of participants and length of instruction time.
- E. Evaluations. For each participant and for each training module, submit four (4) copies of the results and documentation of performance-based test.
- F. Demonstration and Training Video. At end of each training module submit six (6) electronic copies of the Demonstration and Training Video(s) on flash drives.

ARTICLE IV – FORMS (NOT USED)

END OF DOCUMENT 01 8200

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DOCUMENT 01 9113

GENERAL COMMISSIONING REQUIREMENTS

ARTICLE I - GENERAL

1.01 Related Documents

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. OPR documentation is included by reference for information only.

1.02 Summary

- A. This section describes the scope of the formal commissioning process and the general requirements for the building systems outlined herein.
- B. Related Sections
 - 1. Division 22, Commissioning of Plumbing Systems (to be provided)
 - 2. Division 23, Commissioning of HVAC Systems (to be provided)
 - 3. Division 26, Commissioning of Electrical Systems and Lighting Controls (to be provided)
 - 4. Division 27, Commissioning of Distributed Communication (to be provided)
 - 5. Division 28, Commissioning of Security Systems (to be provided)
 - 6. Division 33, Commissioning of Utility Systems (to be provided)

1.03 References

- A. USGBC:
 - 1. LEED v4: EA Prerequisite 1, Fundamental Commissioning and Verification.
 - 2. LEED v4: EA Credit, Enhanced Commissioning.
- B. The County of San Mateo Municipal Green Building Policy. A copy of the Policy can be downloaded at <http://bit.ly/2DhAmiY>.

1.04 Definitions

- A. Basis of Design (BOD): The documentation of design criteria and assumptions for systems, components, and methods chosen to meet the Owner's Project Requirements and applicable regulatory requirements, standards, and guidelines. The document includes narrative descriptions of the systems to be commissioned and is a LEED Certification required submittal. The BOD is prepared by the Design Professionals.
- B. Building Automation System (BAS): The automated building system providing control and user interaction with select building systems, such as the HVAC, DHW, and lighting systems.
- C. Commissioning Authority (CxA): An independent agent hired directly by the owner and not otherwise associated with the Design Professional(s) or the Construction Manager at-Risk (CMR). The CxA assists the CMR with coordinating commissioning activities and witnesses the activities on behalf of the owner.
- D. Commissioning Issue (Cx Issues): A condition that affects, prevents or inhibits commissioning, and must be resolved to complete the commissioning process.
- E. Commissioning Issues List (Cx Issues List): A log maintained by the CxA listing all Deficiencies and Cx Issues documented during the commissioning process. All issues require action, correction, and closure.
- F. Commissioning Plan (Cx Plan): A document that outlines the organization, coordination, and requirements of the commissioning process in more detail.
- G. Construction Manager at Risk (CMR): The contractor directly contracted to the owner with overall responsibility for the project and all commissioning activities described herein.

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- H. Commissioning Coordinator (CxC): Individual within the Construction Manager at Risk's firm, who plans, schedules, directs and coordinates all the commissioning activities, and serves as the CxA's single point of contact for all administrative, documentation and coordination functions.
- I. Deferred Testing: Testing performed at a later time, due to partial occupancy, equipment, load, seasonal requirements, design, or other site conditions that disallow the test from being performed.
- J. 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. A Deficiency is considered a Cx Issue and will be documented on the Cx Issues List.
- K. Design Professional (DP): The Design Professional(s) responsible for design of each portion of the project being commissioned.
- L. Functional Performance Test (FPT): A test of the dynamic function, operation, and control sequences of equipment and systems to verify system performance to the fullest extent. Systems are tested under various operating modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, alarm, power failure, etc. The FPTs are performed using manual (direct observation) or monitoring methods.
- M. Installation Verification (IV): Field verification and documentation of proper installation of system equipment, assemblies, and components prior to Startup. Process is complete when systems are ready for Startup. Installation Verifications are organized under the System Readiness Checklist (SRC) forms.
- N. Monitoring: Recording of parameters (flow, current, status, pressure, etc.) of equipment operation using data-loggers or the Trending capabilities of BAS or other control systems.
- O. Owner's Project Requirements (OPR): A document describing the operational and functional requirements of a project, the expectations of how the facility will be used and operated, and the equipment and system expectations and requirements, as defined by the owner. This document provides an explanation of the ideas, concepts, goals, criteria, and supporting information for the project and is a LEED Certification required submittal. Percent Sampling: Witnessing the startup or testing of only a fraction of the total number of identical or near-identical pieces of equipment such as VAV boxes.
- P. Pre-Functional Checks & Tests (PFC): These are various checks and tests performed on a piece of equipment or system just before, during, or after the initial Startup and operation. They are performed to confirm that the equipment and individual components were installed correctly and are working properly. Examples include checking fan rotation, sensor calibration, actuator testing, and spot temperature, pressure and electrical measurements. They also include system specific tests such as pipe system pressure tests, duct leakage tests, mechanical system test and balance (TAB) and electrical equipment NETA testing. They are organized under the System Readiness Checklist (SRC) forms and must be completed prior to FPTs.
- Q. Startup: Initial starting or activating of equipment usually performed by the Trade Contractor or the Manufacturer's authorized representative.
- R. System Readiness Checklist (SRC): A summary checklist, typically one page per equipment, covering the necessary commissioning tasks to verify that a system is ready for FPTs or system operation if no FPTs are performed. The tasks covered in the SRC include Installation Verification, Startup and Pre-functional Checks & Tests, and the Contractor completed forms for these tasks are attached to the equipment specific SRC. The SRC must be completed prior to conducting FPTs.
- S. TAB: Testing, Adjusting, and Balancing or Test and Balance
- T. Trade Contractor: Typically a subcontractor to the Construction Manager at Risk who provides and installs specific building components and systems and/or provides certain services. Includes Design-Build Subcontractors who have the additional responsibility of providing systems design.
- U. Trending: Monitoring using the Building Automation System (BAS) or a control system, to aid in functional testing and verify system operation and performance under actual operating conditions.

1.05 Systems to be Commissioned

- A. This specification section is applicable to the following systems and equipment to be commissioned in this project:

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1. HVAC Systems and Equipment
2. Building Management System (BMS)
3. Lighting Control Systems, including time clock, occupancy sensors and daylighting controls
4. Domestic hot water heating systems
5. Water management system (detention fixtures)
6. Sanitary sewer control systems
7. On-site renewable energy systems (solar PV; solar thermal)
8. Emergency power generation, Battery Energy Storage Systems (BESS) and UPS systems
9. Electrical distribution systems (switchgear, switchboards, transformers)
10. Power monitoring system
11. Landscape irrigation
12. Electronic Security: non-detention systems (door access control, CCTV, intercom, and alarm)
13. Electronic Security: detention systems (access control, CCTV, and alarm)
14. Sub-slab depressurization system
15. Radio repeater

1.06 Summary Description of Commissioning

- A. Commissioning is a quality assurance process for achieving, verifying and documenting that building systems are installed and perform functionally as intended according to the OPR, BOD, and the requirements of the contract documents.
- B. Commissioning during the design phase is intended to achieve the following specific objectives:
 1. Develop the Owner's Project Requirements (OPR) and the Basis of Design (BOD). The Owner will develop the Owner's Project Requirements (OPR) and the Design Professionals shall develop the Basis of Design (BOD).
 2. Commissioning review of the OPR and BOD and design documents prior to mid-construction phase, with back-check review in the subsequent design submission.
- C. Commissioning during the construction phase is intended to achieve the following specific objectives:
 1. Commissioning review of the Trade Contractor submittals for systems to be commissioned, concurrent with the Design Professional's review.
 2. Finalize the commissioning specific details within the Commissioning Plan.
 3. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry-accepted minimum standards and that they receive the required operational checkout and testing by the Trade Contractors.
 4. Verify and document proper performance of equipment and systems.
 5. Verify that operation and maintenance documentation is provided by the Trade Contractors and is complete.
 6. Develop a systems manual for energy-related systems per LEED that provides future operating staff the information necessary to optimally operate the commissioned systems.
 7. Verify that the owner's facilities and operations personnel are trained per the contract document requirements.
- D. The commissioning process does not take away from or reduce the responsibility of the Construction Manager at Risk to provide a finished and fully functioning building. The Construction Manager at Risk has overall responsibility to assure that all systems are properly tested and commissioned, and that all required commissioning documents are completed and provided to the owner.
- E. Project will meet the Commissioning Requirements of LEED-NC v3.0, Energy & Atmosphere, Prerequisite 1 (Fundamental Commissioning) and Credit 3 (Enhanced Commissioning). The CMR, Trade Contractors, and suppliers are responsible to ensure all requirements for commissioning are

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met in their respective work. The CMR is responsible for uploading LEED specific information and documents and submitting the final application.

1.07 General Commissioning Process

- A. Unless otherwise noted in the trade specific commissioning specifications, the general commissioning process is as follows. See the trade specific commissioning specifications for additional details.

- B. Design Phase
 - 1. OPR and BOD Development
 - a. The OPR and BOD are required documents for LEED Certification.
 - b. The Owner will develop the OPR to outline the functional requirements of the project and expectations of the building's use and operations as it relates to the systems to be commissioned. The CxA and the Design Professionals shall review the OPR for clarity and completeness. The Owner is responsible for updates to the OPR.
 - c. The Design Professionals shall develop a BOD for each system to be commissioned, to meet the requirements described in the OPR and to provide a narrative description of the system design, the design intent and the design assumptions. The CxA and the Owner will review the BOD for clarity, completeness and adherence to the OPR. The Design Professionals are responsible for updates to the BOD.

 - 2. Design Reviews
 - a. Per the requirements of LEED Enhanced Commissioning, at a minimum, 50% Construction Documents (CDs), and 90% CDs shall be issued by the Design Professionals for review and comment by the CxA. The CxA will issue design review comments to the Design Professionals. The Design Professionals shall provide written responses to the CxA's review comments within two weeks. CxA shall review comments provided by the Design Professionals and recommend changes if any. The Design Professionals are responsible for updates to the BOD.
 - b. The CxA will review, recommend modifications and validate control systems with Owner and the Design Professionals to meet requirements in the OPR.

- C. Construction Phase
 - 1. Cx Plan
 - a. The Commissioning Authority (CxA) prepares a Cx Plan that provides guidance in the execution of the commissioning process during construction. The CxA will also confirm incorporation of Cx requirements into the construction documents.
 - b. Per the requirements of LEED Enhanced Commissioning, the CxA shall verify the inclusion of the systems manual and operator and occupant training requirements in the construction documents.
 - c. The CxA shall develop a construction checklist to ensure correct installation of all equipment.

 - 2. Submittal Review by the CxA
 - a. Per the requirements of LEED Enhanced Commissioning, the CxA shall review submittals for appropriate systems in the commissioning scope concurrently with the Design Professionals and will provide review comments to the Design Professionals.
 - b. The CMR shall provide a submittal log to the CxA for referencing requested submittals to be reviewed by the CxA and/or include the CxA on the distribution (and copy) of the submittals issued to the Design Professionals.
 - c. The CMR shall ensure that the requested submittals for review by the CxA are issued to the CxA at the same time they are issued to the Design Professionals.

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3. Form Development
 - a. The CxA will develop SRC and FPT procedures and forms, using information from the submittal review. The SRC and FPT forms are submitted to the Construction Manager at Risk and Trade Contractors for review and comment.
4. System Readiness Activities
 - a. The Trade Contractors shall perform Installation Verification, Startup and Pre-Functional Check & Test activities. The Trade Contractors and the CxC shall document completion of these activities on the SRC forms and attach their completed Installation Verification, Startup, and Pre-Functional Checks and other Tests forms to the SRC.
 - b. The CxA will perform various observation inspections during the installation phase and back-checks of the completed Installation Verification. The CxA will also witness a percent sampling of the Startups and Pre-Functional Checks & Tests, including TAB procedures.
5. Functional Testing
 - a. Once the SRC forms are completed, the FPTs are executed by the Trade Contractors and a sample is witnessed by the CxA. The FPTs may be achieved by any combination of Manual Testing or Trending via the BAS or control system.
 - b. Any deferred FPTs will be defined in the Cx Plan.
 - c. Per the requirements of LEED Enhanced Commissioning, the CxA shall conduct seasonal FPTs on equipment in the season each equipment is intended to operate.
6. Deficiencies and Commissioning Issues
 - a. Throughout the commissioning process, the Commissioning Issues are recorded by the CxA on the Commissioning Issues List. The Construction Manager at Risk and the Trade Contractors shall correct Commissioning Issues and retest the system(s) without delay at no additional cost to the owner.
7. O&M Manuals, Training Verification, and Final Documentation
 - a. The CxA will verify that the O&M manuals are delivered to the Owner per the contract requirements and are complete.
 - b. The Construction Manager at Risk shall submit to the CxA and Owner a training schedule and specific training agendas (for each training class), for review prior to conducting any training. The CxA will also verify completion of the training by receiving a copy of the training class sign-in sheets and any training materials / handouts, provided by the Construction Manager at Risk.
 - c. The CxA will develop the Systems Manual with assistance from the Construction Manager at Risk and Trade Contractors. The systems to be included are the HVAC systems and controls, lighting controls, domestic hot water systems and controls, and any renewable energy systems.
 - d. The CxA will complete the Final Construction Phase Commissioning Report and documentation for the Owner with assistance from the Construction Manager at Risk and Trade Contractor
 - e. The CMR shall ensure that all LEED documentation is uploaded, and application is successfully submitted.

D. Operation Phase

1. Post-Occupancy Warranty Phase Commissioning
 - a. Per the LEED Enhanced Commissioning requirements, no later than 60 days prior to the expiration of the first 12-month warranty period of building occupancy, the CxA will return to the facility to interview facility staff and review systems operation (for the commissioned systems: see section 1.05 above).
 - b. Any performance issues, warranty items, or problems identified will be reported by the CxA to the CxC via a Warranty Phase Commissioning Issues List for correction by the Construction

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- Manager at Risk under manufacturer or contractor warranties prior to the expiration of the warranty period.
- c. Per the requirements of LEED Enhanced Commissioning, the CxA shall deliver an on-going commissioning plan.

1.07 Commissioning Team

- A. The Commissioning Team is responsible for performing the process and achieving successful commissioning results. The Commissioning Team is comprised of the following:
 1. Owner's Representatives
 2. Design Professionals (DP).
 3. Commissioning Authority (CxA).
 4. Construction Manager at Risk (CMR)
 5. Construction Manager at Risk's Commissioning Coordinator (CxC)
 6. Trade Contractors responsible for specific types of systems being commissioned, including their Design Professionals where applicable.
 7. Design-Build Subcontractors including their Design Professionals where applicable

1.09 Responsibilities

- A. General
 1. The Commissioning Team and all others involved in the commissioning process shall follow the Commissioning Plan, attend commissioning kickoff meeting, and additional commissioning meetings as necessary.
- B. Commissioning Authority (CxA)
 1. The primary role of the CxA is to oversee, organize, and lead the commissioning team and assist the Construction Manager at Risk and Trade Contractors in executing the commissioning process.
 2. Prepare the Cx Plan and develop the SRC and FPT forms.
 3. Work with the Construction Manager at Risk to schedule commissioning activities.
 4. Leads commissioning team meetings; prepares meeting agendas, and distributes meeting minutes.
 5. Observe on a sampling basis the system and equipment installation, startup, checkout, and testing for compliance with the OPR, BOD, and Contract Documents; review completion of commissioning documentation; and record any Deficiencies and Issues on the Cx Issues List.
 6. The CxA will sample witness the execution of the FPTs by the Trade Contractors. The CxA will witness one (1) re-test of any commissioned equipment or system.
 7. Is the authority on commissioning test results and other commissioning program elements completion. Prepares, maintains, and distributes the Cx Issues List.
 8. Review and comment on training agendas, and verify that training is completed.
 9. Lead the effort in developing the Systems Manual for the energy-related systems per LEED.
 10. Assemble the commissioning documents and prepare the Commissioning Report.
 11. The CxA is not responsible for:
 - a. Design concept or design criteria
 - b. Review for code compliance
 - c. Inspector of record services
 - d. Design and construction scheduling
 - e. Cost estimating
 - f. Construction management
 - g. Providing tools and test equipment used for commissioning.
 - h. Scheduling startup and testing
 - i. Coordinating the work of Trade Contractors and any special testing agents
 - j. Performing startup and testing

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- C. Construction Manager at-Risk
1. The Construction Manager at Risk is responsible for all commissioning tasks to be performed, including tasks assigned to Trade Contractors. The Construction Manager at Risk also ensures that all Trade Contractors execute commissioning responsibilities according to the Contract Documents, Cx Plan, and schedule.
 2. Include the cost for commissioning in the project cost.
 3. Assign a CxA for the duration of the project with qualifications outlined herein.
 - a. The CxA shall have documented commissioning process experience on at least two building projects with a similar scope of work. The experience must extend from early design phase through at least 10 months of occupancy;
 - b. The CxA may be a qualified employee of the owner, an independent consultant, or an employee of the design or construction firm who is not part of the project's design or construction team, or a disinterested subcontractor of the design or construction team.
 - c. For projects smaller than 20,000 square feet (1,860 square meters), the CxA may be a qualified member of the design or construction team. In all cases, the CxA must report his or her findings directly to the owner.
 4. Assign a CxC for the duration of the project with responsibilities outlined herein.
 - a. The CxC shall have at least five (5) years' experience with the disciplines of construction.
 - b. The Construction Manager at Risk shall submit the name of the person assigned as the CxC to the CxA within a month of contract award
 5. Schedule and coordinate the commissioning meetings with the CxA.
 6. Plan, schedule, coordinate, and facilitate the commissioning work performed by Construction Manager at Risk and Trade Contractors. Provide sufficient lead-time of at least 10 days to notify the CxA in advance of commissioning activities. Update the master construction schedule periodically with commissioning progress and activities.
 7. Review, comment, and accept the Cx Plan prepared by the CxA.
 8. Furnish a copy of any construction related documents such as change orders, submittals, shop drawings, and RFIs to the CxA. Electronic files are acceptable.
 - a. The CxC shall ensure that the requested submittals for review by the CxA are also issued to the CxA when issued to the Design Professionals.
 9. Obtain and review the Trade Contractor IV, Startup, and PFC forms prior to use.
 10. Using IV, Startup, PFC, SRC, and FPT forms; document and certify that all work is complete and systems are installed, operational, and functionally tested.
 11. The Construction Manager at Risk is responsible for organizing all Trade Contractor completed Cx forms to be submitted to the CxA for review.
 12. Evaluate deficiencies identified on the Cx Issues List. Issues will be tracked according to the responsible entity. Collaborate with Trade Contractors and recommend corrective action. Assure all Cx Issues are resolved.
 13. Prepare a training schedule along with the Trade Contractor training agendas and submit to CxA and Owner for review. Execute training of Owner's personnel per approved training schedule and agendas.
 14. Prepare O&M Manuals in accordance with the Contract Documents.
 15. Assist the CxA in developing the Systems Manual.
- D. Design Build Subcontractor(s) including their Design Professionals (where applicable)
1. The Design-Build Subcontractor is responsible for reviewing the OPR document and developing a BOD that provides a narrative description of the system design, the design intent and major design assumptions, consistent with the OPR.
 2. The Design-Build Subcontractor is responsible for generating design drawings and project specifications per the requirements of the OPR and BOD. The Design-Build Subcontractor is responsible for issuing 50% and 90% CDs for review and comment by the CxA and having the Design Professionals respond to the CxA's written comments for both submissions.

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- E. Trade Contractors
 - 1. See the trade specific commissioning specification sections for the Trade Contractor responsibilities.

ARTICLE II - PRODUCTS

2.01 Test Equipment

- A. All standard testing equipment required to perform Startup, Pre-Functional Checks & Tests, and FPTs shall be furnished by the Trade Contractor responsible for the systems.
- B. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerance specified in the Contract Documents. If not otherwise specified, the following minimum requirements apply:
 - 1. All equipment shall be calibrated according to the manufacturer's recommended intervals (or within one year if not otherwise specified) and recalibrated when dropped or damaged.
 - 2. Calibration tags shall be affixed or certificates readily available for all test equipment.

ARTICLE III -EXECUTION

3.01 Scheduling and Coordination

- A. The CxA will provide an initial list of commissioning events to the CxC for scheduling purposes.
- B. The Construction Manager at Risk shall integrate all commissioning activities and milestones into the master construction schedule with assistance from the CxA.
- C. The CxC shall provide sufficient notice to the CxA and Owner for scheduling and coordinating commissioning activities. A minimum 10-day's notice shall be provided to the CxA for witnessing equipment Start-ups, Pre-Functional Checks & Tests, and Functional Performance Testing.
- D. The Commissioning Team shall address scheduling problems and make necessary notification in a timely manner in order to expedite the commissioning process.

3.02 Meetings

- A. When commissioning team member attendance is required, as determined by the CxA and CxC, be punctual and attentive during the meeting.
 - 1. The CxA will conduct a commissioning kick-off meeting, usually within 60 days of the commencement of construction. All team members involved in the commissioning process shall attend the kick-off meeting.
 - 2. The CxA will plan other commissioning meetings as deemed necessary as construction progresses. These meetings will cover planning and coordination, and Commissioning Issues resolution.
 - 3. The frequency of meetings will vary through construction, but generally increase during start-up and commissioning activities.
- B. The CxA will write and distribute meeting minutes documenting the meeting discussion, conclusions, and actions for each team member.

3.03 Commissioning Issues, Back-Checks and Re-Testing

- A. A. All Deficiencies and Commissioning Issues shall be corrected promptly. The responsible party shall correct the issue and inform the CxC and CxA in writing of the resolution and completion date. The CxA will record completion on the Commissioning Issues List once the issue is successfully back-checked or verified.
 - 1. For all Commissioning Issues identified during the pre-functional system readiness activities, the CxA will back-check and verify the completion of the issues where appropriate.
 - 2. For all Commissioning Issues identified during FPT, retesting is required to verify the resolution of the issue and to complete the FPT.

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3. The CxA will witness one (1) re-test for each FPT and will perform one (1) back-check verification of any completed system readiness issue. The Owner may back-charge the Construction Manager at Risk for any additional fees from the CxA resulting from re-testing or repeated system readiness issues list back-checks beyond the first re-test or back-check.

3.04 Commissioning Acceptance and Project Closeout

- A. Completion of the main commissioning activities (system readiness checks, functional testing, training, and delivery of O&M manuals) shall be accomplished as a prerequisite for substantial completion. Completion of all commissioning issues and functional re-testing shall be completed prior to final acceptance of commissioning by the Owner.
- B. After completion of the commissioning activities and following review of the completed commissioning documents, to include all remaining commissioning issues and deficiencies and test results, the Owner will provide a formal written acceptance of the project construction phase commissioning. Upon Owner acceptance of the project construction phase commissioning, the CxA as part of the LEED Post-Occupancy Warranty Phase Commissioning will track any remaining construction phase commissioning issues or seasonal/deferred testing.
- C. Upon completion of all commissioning activities, the CxA will prepare and submit to the Owner a Final Commissioning Report detailing all completed commissioning activities and documentation. The CxC shall support this effort by providing all Construction Manager at Risk and Trade Contractor commissioning documentation.
- D. The Owner's written acceptance of construction phase commissioning will be included in the Final Commissioning Report.

END OF DOCUMENT 01 9113

1 Almaden Boulevard, Suite 590 San Jose, CA 95113 T: 408.283.3600 F: 408.283.3601

TO: Mr. Daniel Griffiths – County of San Mateo

FROM: Peter Brady, PE
Serena T. Jang, GE

DATE: 21 March 2019

SUBJECT: Preliminary Geotechnical Recommendations
South San Francisco Health Clinic
1050 Mission Road
South San Francisco, California
Langan Project No. 770644401

This memorandum presents our preliminary geotechnical recommendations for the proposed Health Clinic at 1050 Mission Road in South San Francisco, California. On 28 February 2019, we performed our field investigation by drilling two borings and advancing four cone penetration tests (CPTs). The samples collected during our investigation were visually classified and representative samples have been sent to the laboratory for testing. We are currently awaiting the results of the tests. However, we understand the project team would like preliminary geotechnical recommendations prior to the publication of our final report.

The proposed development site is located within the campus of the San Mateo County Superior Court's Northern Branch located at 1050 Mission Road. The campus is on a triangular parcel bound by Mission Road to the west, Grand Oak Apartments, single family homes and a church to the south, Grand Avenue to the north. The proposed development is located on the eastern portion of the campus and will be located within assessor's parcel number (APN) 011-311-150.

The proposed development includes the construction of a new three-story health clinic building that will be at-grade. The proposed health clinic will have approximate plan dimensions of 70 feet by 260 feet. We understand the ground floor will be stepped to minimize the depths of cuts and thickness of fill during grading. In addition, the health clinic will have paved surface parking and associated improvements.

1.0 SITE AND SUBSURFACE CONDITIONS

The site was previously occupied by vegetation and several small structures. Based on our review of historic aerial photographs¹, the structures were demolished and the site was paved between 1968 and 1980. Our field exploration indicates the pavement section consists of about three inches of asphalt over six inches of aggregate base. The existing ground surface elevations

¹ Historic Aerials, 2019. *1050 Mission Road, South San Francisco, California*, Historical Aerials for 1968 and 1980, viewed 20 March 2019. <https://www.historicaerials.com/viewer>

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ranges from Elevation 46 feet² in the south end of the site and slopes up to Elevation 66 feet at the north end of the site.

The site is generally underlain by very stiff to hard sandy silt and sandy clay and medium dense to very dense silty sand and clayey sand to the maximum depth explored of 50 feet below the ground surface (bgs). Bedrock was not encountered in our investigation; based on bedrock elevation contour maps³, bedrock is estimated to be approximately 400 feet bgs.

During our investigation, groundwater was encountered at depths of approximately 19 feet to 25 feet bgs. The observed groundwater depths may not represent stabilized levels, and groundwater levels may also fluctuate due to seasonal rainfall.

2.0 DISCUSSION AND PRELIMINARY RECOMMENDATIONS

The primary geotechnical issues that should be addressed during design development are adequate foundation support, settlement behavior and geologic hazards. Our discussions and preliminary recommendations regarding geologic hazards, foundations and other geotechnical aspects of the project are presented in the remainder of this memorandum.

2.1 Geologic Hazards

The site is in a seismically active area and will be subject to very strong shaking during a major earthquake. Strong ground shaking during an earthquake can result in ground failure such as that associated with soil liquefaction⁴, lateral spreading⁵, and cyclic densification⁶. Each of these conditions has been preliminarily evaluated based on our literature review, field investigation and analyses, and is discussed in this section.

² Elevations based on preliminary topographic survey provided by Smith Group in an email dated 7 March 2019, datum unknown

³ Hensolt, W. H. and E.E. Brabb (1990). "Elevation of Bedrock and Location of Principal Faults, Maps Showing Elevation of Bedrock and Implications for Design of Engineered Structures to Withstand Earthquake Shaking in San Mateo County, California."

⁴ Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporally loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits.

⁵ Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

⁶ Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground surface settlement.

2.1.1 Liquefaction and Associated Hazards

When saturated soil with little to no cohesion liquefies during a major earthquake, it experiences a temporary loss of shear strength as a result of a transient rise in excess pore water pressure generated by strong ground motion. Flow failure, lateral spreading, differential settlement, loss of bearing, ground fissures, and sand boils are evidence of excess pore pressure generation and liquefaction.

The subsurface data indicates the materials encountered below the groundwater level is sufficiently dense to resist liquefaction. Therefore, we conclude the potential for liquefaction and lateral spreading to be low.

2.1.2 Cyclic Densification

Cyclic densification refers to seismically-induced differential compaction of non-saturated granular material (sand and gravel above the groundwater table) caused by earthquake vibrations. The borings indicate that the materials above the water table are sufficiently dense or clayey, and therefore the potential for seismic densification is low.

2.1.3 Fault Rupture

Historically, ground surface ruptures closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act and no known active or potentially active faults exist on the site.

Based upon our review of published geologic maps, we found that no known active faults pass through the subject property. As a result, we conclude that the risk of fault offset through the site is negligible.

2.1.4 Tsunami

Recent published maps (California Emergency Agency, 2009) indicate the project site is not within the tsunami inundation zone; therefore, we conclude the potential risk by inundation from tsunami to be low within the project site. However, the project civil engineer should evaluate the impact of sea level rise on the potential risk of inundation from a tsunami.

2.2 Foundation and Settlement

The available subsurface information indicates the subgrade across the proposed development primarily consists of medium dense to very dense sand. As discussed, existing ground surface elevations ranges from Elevation 46 feet in the south end of the site and to Elevation 66 feet at the north end. We understand the ground floor of the proposed building will be stepped to minimize grading; minor fills less than three feet are anticipated. Considering the subsurface conditions at the site, we judge the most economical foundation systems for the proposed structures are shallow foundation system consisting of spread footings gaining support in the medium dense to very dense sand. The footings should be embedded at least 24 inches below

the lowest adjacent soil subgrade, bottom on medium dense to very dense sand, and should be at least 18 inches wide for continuous footings and 24 inches for isolated spread footings. Footings should be extend through new fill that is placed as part of grading for the building pad. If the fill thickness is greater than about 5 feet, it may become impractical to use shallow foundations and a drilled pier or pile system may be required. We can provide recommendations for these foundation types as part of our geotechnical report, if needed.

Structural loads are presently not available for the proposed development. Once building loads and grading plans are available, the settlement estimates can be refined. For our analyses, we have assumed that proposed structures will be founded near the existing ground surface elevation. The footings bearing on medium dense to very dense native sand may be designed for a preliminary allowable bearing pressure of 3,000 pounds per square foot (psf) for dead plus live loads, with a one-third increase for total loads, including wind and/or seismic loads. Footings design in accordance with these preliminary recommendations should not settle more than one inch; differential settlement between adjacent footings, typically 25 feet apart, should not exceed ½ inch. These values are based on footings bearing on native soil.

Lateral loads on footings can be resisted by a combination of passive resistance acting against the vertical faces of the footings and friction along the bases of the footings. Passive resistance may be calculated using lateral pressures corresponding to an equivalent fluid weight of 250 pounds per cubic foot (pcf); the upper foot of soil should be ignored unless confined by a concrete slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.30. The passive resistance and base friction values include a factor of safety of about 1.5 and may be used in combination without reduction.

Uplift loads may be resisted by the weight of the footing and any overlying soil. If footings are inadequate to provide the necessary uplift resistance, drilled piers or anchors may be used. If drilled piers or anchors are required, we should present design recommendations.

2.3 2016 California Building Code Mapped Values

For seismic design in accordance with the provisions of 2016 California Building Code, we recommend the following:

- Maximum Considered Earthquake (MCE) S_s and S_1 of 2.293g and 1.099g, respectively.
- Site Class D
- Site Coefficients F_A and F_V of 1.0 and 1.5

MEMO

Preliminary Geotechnical Recommendations
South San Francisco Health Clinic
1050 Mission Road
South San Francisco, California
Langan Project No. 770644401
21 March 2019
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- Maximum Considered Earthquake (MCE) spectral response acceleration parameters at short periods, S_{MS} , and at one-second period, S_{M1} , of 2.293g and 1.648g, respectively.
- Design Earthquake (DE) spectral response acceleration parameters at short period, S_{DS} , and at one-second period, S_{D1} , of 1.592g and 1.099g, respectively.

The recommendations presented in this memorandum are preliminary. They may be used to estimate costs and for preliminary schematic design; however, they should not be used to develop final documents. We are currently preparing a geotechnical report, which will provide final design recommendations for the project.

If you have any questions, please call. Thank you.

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Proposer may generally describe its strategy to deliver this project on time and on budget using the CMR delivery method.

1. PROPOSER'S MANAGEMENT PHILOSOPHY AND STRATEGY

XL's local expert team collaborates with you to understand the South San Francisco Campus project; develop a lasting health care facility that centers on client wellness; and achieves the highest possible level of safety, quality and longevity. From "Day One" to "Day Done," we actively manage budget, schedule and quality through partnerships and the XL Way.

Our philosophy from day one is to establish a true partnership with you, SmithGroup, existing North County Courthouse staff and visitors, and adjacent neighbors. We will actively promote this by providing:

- Detailed Communications
- Continuous Collaboration
- Proactive Preconstruction (Target Value Delivery)
- Detailed Investigations
- Thorough Outreach to Trade Partners
- Meticulous Coordination
- Strict Quality Control
- Innovative Solutions

Our philosophy, along with our teams' experience, assures budget and schedule certainty.

▲▲ The XL Construction team has gone above and beyond in their partnership with us to ensure El Camino Hospital can provide the best possible mental health and addiction care to our community. ▲▲

**—Jodi Barnard
President, El Camino Hospital Foundation**



Along with our philosophy of partnership, we embrace “The XL Way” on every project. This process draws upon the vast and diverse experiences of our team members as well as the successful projects XL has built over the past 27 years. By applying this set of best practices on your project we will ensure we deliver a project that exceeds your expectations.

THE XL WAY



These best practices are critical in how we manage every project. The underlying focus is ensuring **our team is aligned with the goals, needs and expectations of the South San Francisco Campus Project.**

The key to meeting the project schedule and budget is that every team member holds the stated project goals as primary importance, above all other personal or company priorities.

The first, and most critical step in understanding the team goals are met is to **conduct an Alignment Session** with all project team members and stakeholders. This meeting is held immediately following award and addresses the following topics:

- Definition of and Agreement to **Project Strategic Values**
- Identification of **Major Project Risks**, primarily associated with schedule, budget, safety, logistics and design optimization
- Identification of **Team Behavioral Strengths**
- Definition of **Strategic Project 'Musts'** for team focus throughout the project

Once the Alignment Meeting is held, the following strategies are employed by XL Construction to ensure timely delivery and budget compliance.

- Properly plan the project
- Execute the plan
- Re-align at major milestones
- Quarterly team performance/wellness check-ins
- Risk Analysis Review
- Finish the project crisply



XL in Action

Andreas Phelps conducting an alignment session

Project Kick-Off Alignment Session

According to a Penn State Study on Maximizing Success (2015), the major factor in determining project success is developing a high performance team. How quickly you can build such a team depends on the ability to develop an integrated and cohesive team. To that end, Andreas Phelps, our Alignment Session facilitator, will work closely with the team to:

- Set Project Values
- Identify any Project Risks
- Establish the Project Team's Behavioral Profile

This leaves the team with a set of “Strategic Musts” for project success and a clear understanding of how to work effectively together.



Proposer may describe how pre-construction services will be planned and performed on this project, including the proposed methodology for reviewing design documents and site conditions, and the proposed phasing and bid package strategies.

2. CONSTRUCTION PLANNING, BIDDING STRATEGIES AND PERFORMANCE

The XL Way results in a customized project delivery process that provides meticulous identification of existing conditions, precise constructability reviews, a logistics plan that mitigates impacts to existing buildings and surrounding neighbors, and a detailed and accurate project schedule-all within the Comprehensive Target Budget.

a. Pre-Construction Services

Target Value Delivery: XL's "Project Solution" for Optimum Design and Cost Certainty

Our proactive preconstruction approach efficiently tackles the complexities related to the South San Francisco Campus Project, including:

- building program and business case needs
- complex site requirements and construction challenges
- coordination with site adjacencies

While doing so, we will implement Target Value Delivery (TVD) behaviors, processes and tools to ensure design stays within budget.

Our TVD expertise represents years of study, hard work, and focused passion. It is based on two guiding principles that promote collaboration while driving innovation that **achieves your design goals with cost and schedule certainty.**

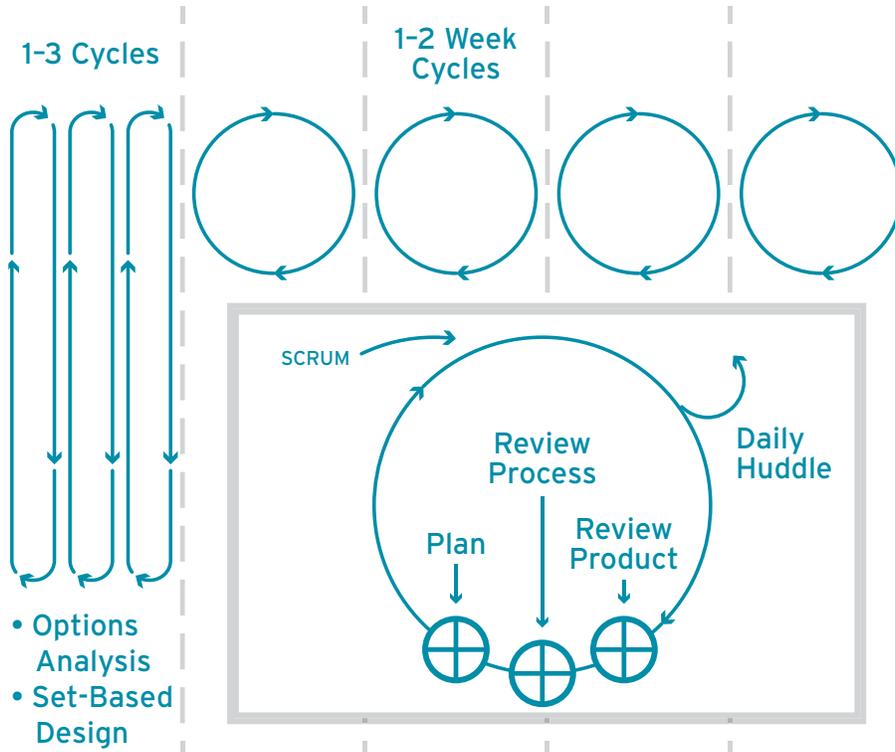
TVD is a process whereby our team works very closely with the Design Team and the County to provide early, proactive and continuous feedback during the Design Phase. The net results are comprehensive and accurate estimates that are aligned with the project budget requirements.

XL in Action



XL's TVD process saved this project by reigning in the budget

Recently we were engaged by a skilled nursing facility service provider to solve a serious budget challenge for a new, ground-up facility on a difficult site. Working closely with the design team and client, we were able to reduce the budget by 10%, while achieving key design goals and programming requirements.



Target Value Delivery Process

Each major design decision runs through this TVD process to ensure the best possible outcome, keeping in mind the budget, schedule and end-user needs.

Principle #1

Team engagement is paramount to developing creative solutions to maximize project value

- **Process Mapping:** By establishing protocols for decision making, preparing cost studies, and freely sharing information, we allow the team to assemble a complete picture. This creates cost awareness ahead of design output, eliminating redesign that wastes time and money.
- **Mutual Respect for Work Styles:** Constant focus and coordination between cost and design, while aligning our team’s vision and approach, keeps us unified around your project goals.
- **“Big Room” Collaboration:** Implementation of a “Big Room” at key points during design maintains a productive and informative state of team communications. We foster productivity and information sharing to define, and gain agreement on, expectations and processes among all parties. We know that our collective success depends on an all-in and engaged approach.

Principle #2

Real time project analysis and reliable estimating informs a successful team.

- **Establish a Complete Master Estimate** that communicates accurate costs, regardless of the design stage, informing all stakeholders of the project cost status at every preconstruction stage.

Tracked and updated weekly, our Master Estimate details and isolates the five main cost tracking components that provide a complete picture based on that week's current design and team assumptions:

1. Building Skin Systems
2. Civil infrastructure and site development
3. Existing conditions and implementation of means and methods
4. Primary Structure
5. Interior Construction

Keeping the team informed on costs, relative to design, for each component will be critical to achieving design and cost balance across the entire project.

- **Enable Informed Decisions** by working with the South San Francisco Campus stakeholders to establish the metrics/values by which design decisions will be made. Doing so creates a greater understanding of each team member's need for specific information that affects cost. The XL team identifies what is needed beyond the traditional estimate to keep the team informed, on track and provide a predictable total project cost.

The process never ends...

Identifying and developing early mitigation plans to address any factors that pose a risk to budget certainty allows the XL team to collaboratively avoid cost and schedule impacts. Our team develops a detailed risk register to identify and track both risks and mitigation plans to ensure they are pro-actively managed throughout the project.

▲▲ Of all the GC's I have worked with delivering MOB's (Medical Office Buildings) in NCAL (Northern California), XL Construction has proven to be the most innovative and progressive in terms of their approach and execution of project delivery. XL is a true partner that delivers on its commitments to the design team and the Owner. I would welcome the opportunity to work with the XL team on future projects. ▲▲

**—Gary Giglio
Formerly with
Kaiser Permanente**

Methodology for Ensuring Constructability and Mitigating Project Risk

One of the most critical aspects of our preconstruction effort is to evaluate the completeness of the documents as they are developed, as well as evaluating the site conditions to ensure all aspects of the site are addressed and coordinated with the design.

XL incorporates several methodologies associated with these reviews and coordination. The most critical of these is performing Constructability Reviews, which are completed at each design milestone. XL thoroughly reviews all drawings and specifications to ensure:

- The right level of detail has been documented
- Scopes are coordinated across design disciplines
- Design shown is constructible
- The intent of the client is depicted clearly and accurately
- There are no scope gaps or duplications
- Opportunities for prefabrication are identified
- Proper building maintenance access points

Critical to this process on the South San Francisco Campus Project is the regular review of the documents with the existing site conditions. This is vital to confirm site issues are addressed properly, but also to ensure the site design is constructible without undue impacts to the budget.

As part of this process we document and track these items so that they can be communicated to the design team and tracked throughout the preconstruction process. The Constructability Log will be a living document and shared weekly with the team to maintain focus and enhance communication.

The Benefits of XL's Constructability Review Process:

- Lower Trade Partner bids
- Fewer schedule disruptions
- Reduction of change orders
- Fewer RFIs during construction
- Greater team efficiency
- Fewer site disruptions
- No double-covered/missed scopes



Proposer may describe how construction services will be planned and executed on this project, including its subcontracting plan, any proposed outreach and utilization plans, and advertising and awarding plans. Proposer may describe its methodology for coordination of work including site preparation, demolition and construction phasing to avoid impact on the normal operations and services of the buildings in the vicinity and claim avoidance measures.

b. Construction Services

Subcontracting Plan

Successfully constructing the new South San Francisco Campus project requires the right Trade Partners. XL will diligently work to align our Trade Partners with the project schedule to ensure work flows smoothly. Additionally we will procure select trades to provide their expertise in the development of the project documents. (For a detailed discussion of our procurement plan, please see Section D2.c of this proposal.)

Outreach and Utilization Plan

XL is committed to providing San Mateo County and the surrounding community with timely and accurate information, routine updates and consistent communication throughout the project to create understanding and avoid unnecessary tensions. A few ways we will accomplish this outreach are:

- Routine project updates with Authorities Having Jurisdiction (AHJs) so they are fully apprised.
- In conjunction with the County, provide periodical communications on the plans for construction with the neighbors.
- Consider engaging the College of San Mateo, one of our current clients, in our process and construction activities. This could involve speaking opportunities in classrooms, internships programs on-site, and tours given to interested professors. In sharing our expertise, we aim to enrich the local community and make the New South San Francisco Campus Project a learning opportunity.

Advertising and Awarding Plans

We have strong relationships with well over 600+ prequalified Trade Partners and have a reputation in the industry for treating them fairly and ethically. This benefits your project by attracting the most qualified Trade Partners who bid the work with the least contingencies, ensuring a best value for their scope. It is due to our relationships with the subcontracting community that XL Construction can assure a sufficient trade coverage. XL will qualify the trade contractors bidding on this project to ensure that they are not over-committed thus mitigating labor/supply chain issues.

We anticipate that during the permitting process, a predetermined percent of commitments pertaining to local labor, minority and small business enterprises will be mandated for the project approval. We will work closely with applicable Small Business Outreach Programs, such as the SBDC of San Mateo, to develop a group of potential contractors.

Each of these potential candidates will receive a personal call from XL to verify qualifications and solicit bids. Tracking XL's outreach program is comprehensive because we understand it is an important component towards fulfilling potential diversification. As such, we will consider all options, including advertisement in local publications, for a successful efficient team that can reliably contribute to project diversity goals.

XL's longstanding local presence will benefit the South San Francisco Campus Project in attracting the best and most qualified Trade Partners. We have completed 96 jobs in South San Francisco in the last 27 years.

Coordination of Work

Our detailed Project Schedule which follows in Section D2.d, outlines the coordination of work including site preparation, demolition, and construction phasing. Below is a recap of some key scopes which will be coordinated as part of our scheduling effort:

Mobilization

- Security Fencing Adjustment/Addition
- Relocate Utilities and Services
- Temp Construction Electrical Service
- XL Construction Trailer
- Temporary site facilities
- Develop detailed site logistics plan
- Haul Routes
- Site Security

Underground Utilities

- Rough Grade
- Storm Drain and Catch Basin
- Sewer Lines
- Fire Line Service
- Domestic Water Service
- Electrical Conduit Mains
- Fire Department Access

Site Work

- Structural Steel
- Exterior Skin
- Site utilities
- Utility tie-ins
- Grading and off-haul

Claim Avoidance Measures

In over 27 years in business, XL Construction had not had a complaint filed against it in court by a project owner resulting in litigation. This is a result of our willingness to always work with our clients and partners to find meaningful resolution to issues as they arise.

In July of 2018, XL Construction was included in an allegation for a construction defect claim for a project completed in 2015. XL Construction and the OCIP insurer disagree with the allegation and are defending our position that the alleged defect arises out of a design element and not out of construction means or methods.

Our exemplary record is the result of:

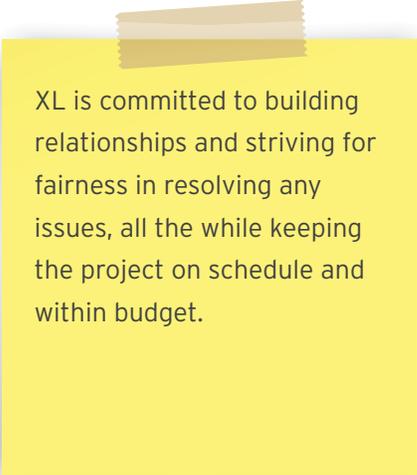
- Relationships Built on Trust
- Dedication to Pre-Planning and Coordination
- Built in quality from our Integrated QA/QC program
- Actively Managing Construction
- Considering Differing Perspectives and Finding Common Ground

In the unlikely event that a dispute arises, our approach is simple - we will work diligently and fairly to resolve all disputes in a timely manner. One of our senior executives, who is not directly involved in the project, will evaluate the issues and impacts, and work with the project team and involved parties to develop mutually agreeable resolutions based on good logic rather than emotions.

If we cannot solve an issue without help from a third party, we strongly prefer to mediate with a mutually acceptable mediator before any arbitration or litigation.

Additionally, as noted in the next section (D2.c), XL requires any Trade Partners where the contract value is greater than \$100,000, to go through our pre-qualification process annually, thereby reducing the potential for claims.

Our effort will always be to keep your project on track while resolving any potential issues without litigation.



XL is committed to building relationships and striving for fairness in resolving any issues, all the while keeping the project on schedule and within budget.



Proposer may describe its bid marketing strategies for this Project and how it will engage and ensure ample potential Trade Partners during the bidding process for the best bid price. Proposer may describe strategies to mitigate potential labor/supply shortage for any of the major sub trades. Proposer may describe its relationship with the local subcontracting community and how these relationships will benefit the Project.

c. Marketing Strategies for Competitive Trade Partner Engagement

We want this project to be highly anticipated and attractive to the Trade Partner and supplier community. For this to happen, we know that the Trade Partner and supplier community must be informed and kept aware of the New South San Francisco Campus project. Bid day is an important event and must yield: a) best value and b) abundance of efficient bids and proposals from qualified Trade Partners.

Our bid day success is achieved by keeping the Trade Partner community informed of long-term timing for bid packages. This respectful approach allows Trade Partners and suppliers to hold blocks of time and bidding resources in anticipation to bidding their package. Much like no surprises in our budget process, there are no surprises in the bidding process as well.

In addition, our bid packages are fully developed to present a clear picture of the Scope of Work for each trade. The detailed Project Schedule will be part of the Bid Package to assure each Trade Partner is clearly aware of the time frame within which they are expected to complete their work, as will other supplemental documents such as Instructions to Bidders, supporting sketches, details, or matrices. The complete package also includes all relevant contractual requirements along with any conditions associated with all governmental approvals or permits.

Furthermore, our outreach, sets expectations for safety, value, quality and innovation well in advance of bid documents being released. Doing so generates the successful outcome of qualified and committed Trade Partners with competitive pricing.

Strategies that will mitigate any potential for labor or supply shortages

As outlined above in Section D2.c, part 1, communication with the Trade Partner community, specifically about potential long-term campus construction schedules, keeps the local construction labor pool in the “know” so they can plan for upcoming labor needs. In addition, XL’s reputation for demanding fair and collaborative treatment ensures trades want to target projects we are working on. Our relationships include large trade contractors that have large pools of craftspeople as well as smaller companies that are committed partners.

Our strong Trade Partner relationships will benefit the project through lower bids, more aggressive schedule commitments and assignment of each Trade Partner’s best team.

Local Trade Partner Outreach

XL uses several strategies to engage the local construction community. Outreach to local Trade Partners falls under the purview of our diversity program. This program was developed to increase MBE, WBE, SBE, DVBE, and local business participation in our projects. It is divided into four sections: Trade Partner solicitation, Trade Partner pre-qualification process, bid and contractual process, and monitoring and reporting.

XL has a current database of approximately 600 pre-qualified Trade Partners. We generate additional interest by holding local outreach events for local Trade Partners that provide information about the project and the opportunities that exist. We also hold clinics on Certified Payroll Reports, Skilled Labor Force reporting, LEED certification, material sourcing, and other documentation that might be required on the project.

If local firms not pre-qualified are being considered for selection, XL will gladly expedite them through our pre-qualification process to gain approval and allow them to be selected.

If you wish to measure the amount of local participation, we will work with you to create a formal process that includes quantifying the local businesses invited to bid on the project and subcontracts awarded to them.



XL in Action

Diversity woven into project delivery and approach

XL has seen that we build at our best when we draw upon a diversity of experience, thought, and background. To that end, we have engaged a wider group to consider our project approach and provide their 360° review of the project. After award, we also engage in peer reviews with diverse groups of XLers to help our core team match solutions to project challenges.

Labor Supply

Demand for construction services exceeds available capacity in the Bay Area at this time. As a result, ensuring that Trade Partners have the capacity to complete their work on the project per the Project Schedule must be a selection criteria. Once bids are received, XL considers the factors below in analyzing the bids in addition to price:

- Project approach and execution
- Quality of the team
- Similar experience and past project performance
- Current commitments and availability of management and craft labor
- Safety record

XL is not a “broker” General Contractor. **We employ nearly 250 carpenters, laborers, and cement masons currently engaged in construction activities.** XL self-performs:

- Demolition
- Jobsite set-up and maintenance
- Structural Carpentry
- Carpentry related installation of
 1. Millwork
 2. Cabinetry
 3. Accessories
 4. Doors, Frames and Hardware
- Concrete
- Owner Furnished Contractor Installed Items
- General Cleanup

Utilizing XL direct labor, either on an “as needed” basis, or through the “bid process” for major scopes, provides a significant benefit with cost transparency, proven safety record, schedule control and resource allocation in a saturated market.

Relationship with the subcontracting community and how it will additionally benefit the South San Francisco Campus Project.

We are not a large conglomerate. Our leadership resides in and is focused on Northern California. **The top leaders of XL Construction from project managers to estimators continue to forge trust, based on mutual respect, with the local Trade Partner community.** This can be seen in many aspects of our company, such as our impressively 0.40 EMR rating, one of the lowest in Northern California, even though our qualified Trade Partner base performs work with other major general contractors as well. Trade Partner’s respect our process for safety and therefore we have safety results-measurably better than the industries norm. This example of mutual respect is a thread in our approach to preconstruction as well. It is the corner stone of our behavior and process.



Proposer may describe how it plans to establish, maintain, and update the Project schedule during design and how to assure timely Project completion.

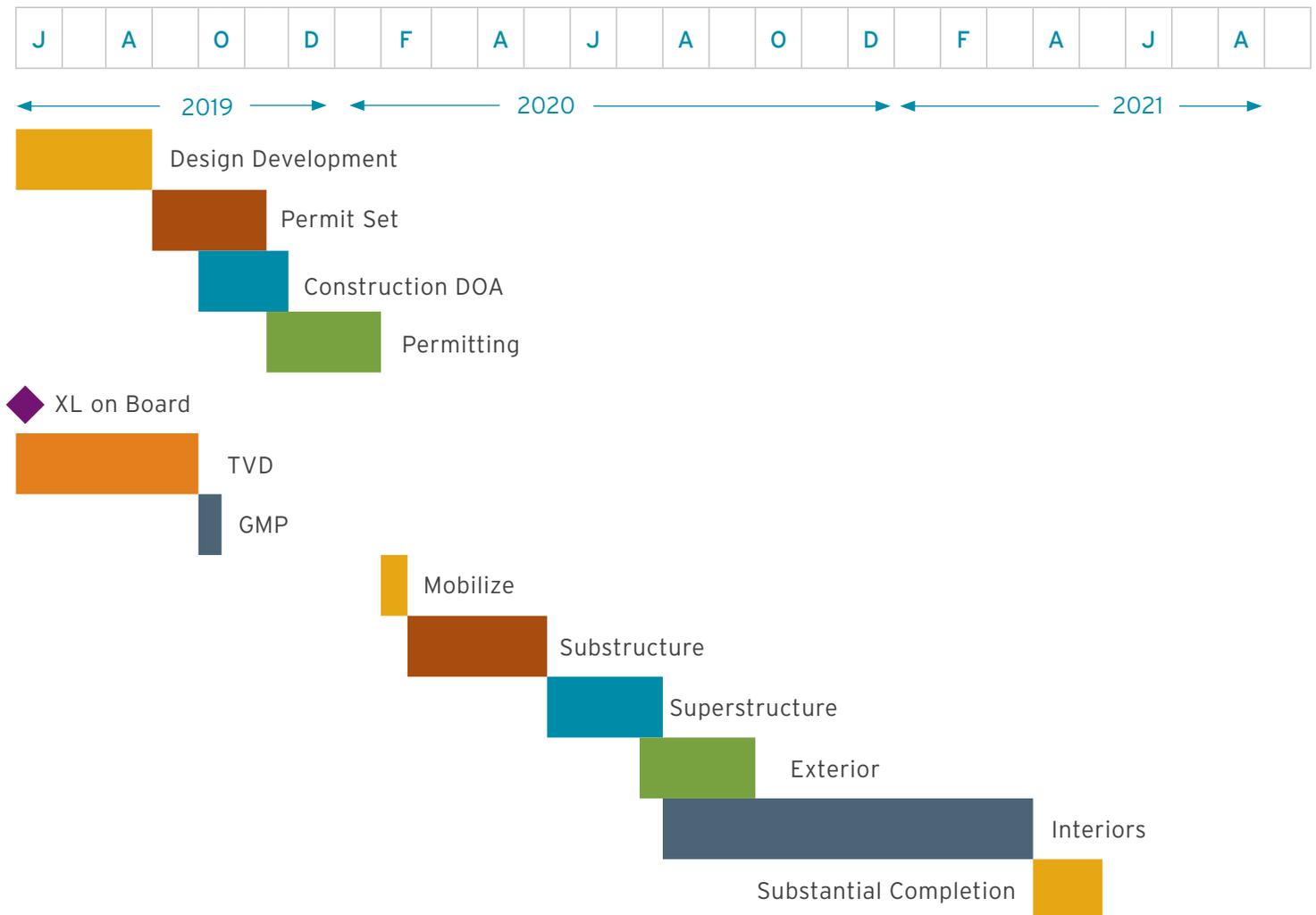
d. Project Schedule

The early development of a fully integrated design, procurement, and construction schedule is the best way to manage a project. From the onset, we create a realistic and detailed timeline that shows activities from design and permitting, to project closeout. We will tell the story of your project—identifying what constraints it might face, and developing plans to mitigate them. We consider all schedule impacts caused by design, permitting, selection of materials and equipment, procurement, site logistics, and construction preparation.

Schedule Benefits

1. Schedule certainty
2. Improved quality
3. Early input and buy-in from all stakeholders improves schedule efficiency, integrity, and outcome
4. Last Planner tools drive communication and teamwork, keeping the project on track

Proposed South San Francisco Campus Project Schedule



A Solid Schedule Saves Time and Money

The early development of a fully integrated design, procurement, and construction schedule is the best way to fast-track a project. We can tell the story of your project—identifying what constraints it might face and developing plans to mitigate them. We consider schedule impacts caused by design, permitting, selection of materials and equipment, procurement, site logistics, and construction preparation. It is this integration of design, procurement, and construction that achieves an extremely high level of schedule accuracy.

We review the schedule with our Trade Partners as soon as it is possible; adjusting for efficiency and planning the sequence of work to best meet your timeline. Using Pull Planning, the team creates a collaborative schedule that is validated and agreed to by all stakeholders. This imbues everyone involved with a sense of ownership, producing the most efficient construction schedule possible. The process also enables us to identify and assess any off-hours and shift work required to meet schedule milestones, reduce safety hazard exposure, and reduce disruptions to any existing clients on site.

The management of the project schedule can be summarized as follows:

- Facilitate a Pull Schedule session to further develop the preliminary schedule. All project stakeholders are encouraged to participate, resulting in a schedule that relies on commitments from all vested parties. For the South San Francisco Campus Project, pull schedule sessions will be broken into several sessions based on the phases we have identified.
- We will maintain the project schedule using the Last Planner System, specifically the Weekly Work Plan, to track commitments and monitor progress, ensuring the high-level milestones are met.



XL in Action

Pull Scheduling Shaves 25% Off Schedule

On the Kaiser Arques project, XL employed Lean Construction principles to improve efficiency and minimize waste. To do this, the XL Project Team led a five-hour pull schedule planning session with approximately 30 project stakeholders.

Ultimately, the pull schedule process helped us understand what the Trade Partners' constraints were. With this understanding, we were able to reduce the original schedule by 25%, resulting in earlier completion of the project and earlier access for end users.

Strong Start-up and Commissioning Ensures Seamless Collaboration

We will start preparing for project closeout at the start of the project and it will include a customized plan for your project-specific requirements.

To ensure continuity of information between management and field staff, our MEP coordinator, project manager, and superintendent work together to develop your project's startup and commissioning plan. They include methods for timely completion of punch lists, sequencing startup of mechanical and electrical systems, and the commissioning process/plan. It will also incorporate turnover of all necessary as-builts, O&M, and validation documentation. This startup plan and schedule is given to MEP Trade Partners as well as air and water-balancing Trade Partners during the bidding process, so all expectations are understood.

Prior to fabrication and installation, our MEP coordinator will participate and lead the MEP shop/installation drawing coordination efforts for the South San Francisco Campus Project, ensuring that the final installation will be coordinated for proper functionality and serviceability. During construction, we will review the installation of MEP workmanship in the field for quality and access to valves, controls, and dampers. In addition, we will walk systems for adherence to shop drawings and contract drawings. This added effort has proven to be appreciated by both the MEP design engineers and the facilities and maintenance staff we work with.

Site Logistics

Critical to developing a comprehensive project schedule, a complete and clear site logistics plan needs to be created. The following page represents our preliminary plan. Working in conjunction with the County of San Mateo and SmithGroup, a final plan will be developed.

Start-Up and Commissioning Benefits

1. Customized plan tailored to meet your project's specific needs
2. Clear expectations from project inception results in a smooth start-up process, timely move-in and proper hand-off to the South San Francisco Campus Project Facility Department



XL's virtual plan rooms include electronic access to the updated documents in the field for all trade foremen.



Proposers interested in self-perform work should list the targeted subtrade work and the estimated percentage such work would constitute, not to exceed 15% of the Direct Cost of Construction in total.

e. Self-Performed Work (SPW)

XL is a traditional general contractor and routinely self-performs a number of scopes of work, which include soft demolition, concrete, rough carpentry, doors, frames and hardware installation, casework installation and clean-up. XL currently has over 250 tradespeople on staff.

Our SPW managers and estimators review drawings, specifications and instructions to bidders and provide proposals for review and comparison. If the design is not complete, we have the capability to help develop design while starting preliminary construction activity, facilitating quick project delivery. **When XL's SPW team is selected to complete any given scope of work, the client gains a level of control, quality, and coordination that cannot be matched by our competition.**

The Self Performed Work Items XL is interested in performing will not exceed 15% of the Direct Cost of Construction in total, and are as follows:

- Jobsite set-up and maintenance
- Concrete
- Owner Furnished Contractor Installed Items
- General Cleanup
- Doors, frames and hardware
- Millwork/Casework
- Accessories

Utilizing the XL Self-Perform Work crews, we can assure the County of San Mateo is getting a quality product with maximum ability to control field staff and schedule. It also offers cost transparency and a team with a world-class safety track record.



Success Story: Self-Performed Work Maximizes Schedule Flexibility at D.tech High School

Oracle Design Tech High School required a high level of flexibility in the project schedule in order to keep an adjacent bay trail open to the community for as long as possible. XL was able to achieve this by leveraging its subsidiary, Bradley Concrete, to coordinate the site concrete. Because this allowed the team to use their own workforce, they were able coordinate a team much later than would normally be possible with an outside Trade Partner. This reduced the down time of the trail from 6 months to just one.



Proposer may describe the methodology it plans to use to coordinate and manage communication with the County and its user groups throughout design and construction. Proposer may describe how it will efficiently document/track decisions and associated cost impacts to keep County and Architect well informed.

3. INTERFACE AND COORDINATION WITH THE COUNTY AND ITS USER GROUPS

By deploying the Four Cs—Communication, Collaboration, Coordination, Cooperation—we work elbow-to-elbow with project stakeholders ensuring they have all the critical information needed for decision making.

XL's primary goal is to align all stakeholders. Understanding each stakeholders' goals and concerns allows the Project Team to move forward with a unified effort. The result is efficient production which impacts all aspects of the project.

Alignment

Team alignment is fundamental to any successful effort. Common understanding and shared project values are critical to productive debate and constructive effort. It is the only way to fully leverage the collective knowledge of the team. Alignment is also necessary to ensure that all team members are working synergistically toward common goals (rather than overlapping or conflicting with each other).

At the outset of the project, XL will conduct an alignment session with our Alignment and Lean Expert, Andreas Phelps, which includes all stakeholders and focuses on:

- **Behavior:** Understanding the individuals on the team, inherent group dynamics, and strategies that naturally promote the best work from each individual (and the overall team) proactively improves the team dynamic.
- **Value:** Understanding your broader business case helps us deliver the project in a way that generates greater value for you and your end users.
- **Milestone Planning:** Collaborative effort to plan major construction events (e.g., procurement/permitting, key design decisions, owner decisions), and identify and address potential risks with established plans to mitigate them.
- **Governance:** Deliberate planning of regularly scheduled project meetings that include the right stakeholders to ensure the seamless flow of upward information, and downward decisions.



Andreas Phelps
Alignment & Lean Expert

By analyzing a project from these different perspectives, we emerge with a comprehensive strategy that uses the appropriate tools, maximizes team engagement, positively impacts your broader business case, and proactively mitigates risk.

Communication

Communication must be open and continuous through the life of the project. To facilitate that process, XL will utilize a Project Management System, Procore, which provides access to all stakeholders and directs communication to all affected participants.

Procore is a web-based project management system used to share information and manage the document control process on our projects. The use of Procore increases the accessibility of project communications, reduces turnaround times and heightens the level of accountability for all team members.

Several key project elements and document processes are tracked through this system, including:

- RFI's and Submittals
- Schedules
- Daily Logs
- Photos
- Drawings and Specifications, including revision control for all plan changes
- Meeting Minutes

Procore also facilitates document storage and transfer via built-in FTP functionality. **Utilizing Procore will provide significant benefits to all parties involved in the construction of the project, serving as a communication hub for team members and as a source of vital, real-time information throughout the course of the project.**

In addition, XL will facilitate weekly progress meetings to review project schedules, critical decision items, potential cost items and the overall health during both Preconstruction and Construction. As an adjunct to the weekly progress meeting during Construction, XL will conduct regular quality walks to review work in place and assure quality goals are met. A partial listing of the methods used to provide open communication are:

- 6 Week Rolling Schedules
- P6 Project Scheduling and Documentation of Pull Planning outcomes
- BIM Modeling and Clash Detection
- Procurement Logs

Keys to our Communication Process with

County of San Mateo:

1. Daily huddles
2. Weekly Team Meetings
3. Quarterly Reviews

XL in Action



XL's "All Access" Communication Method

We use collaborative, cloud-based spreadsheets which enable the client, architect, user groups and other stakeholders to contribute to the communication matrix at any given time. The project team gains a real time perspective of the current issues, the ability to actively provide information, and serves as a record of how the various decisions were made if they need to be revisited in the future. The matrix clearly shows when and where the issues were found, their potential impact, potential solutions, and records the reasons why a particular course of action was chosen. The matrix is transparent, interactive, and fosters teamwork by ensuring the communication loop includes every project stakeholder.

Target Value Delivery

XL's implementation of the TVD process provides the tools to clearly communicate and document cost decisions such as A3 Cost Studies and Value Opportunity Logs. As illustrated below, the process is continuous and provides up-to-date, critical decision making information for the team.



“ *Target Value Delivery works. I lived it with XL on our last project and the foresight it gave the client was key. As the designer, we didn't need to erase and re-draw, which resulted in quantitative benefits to the client.* ”

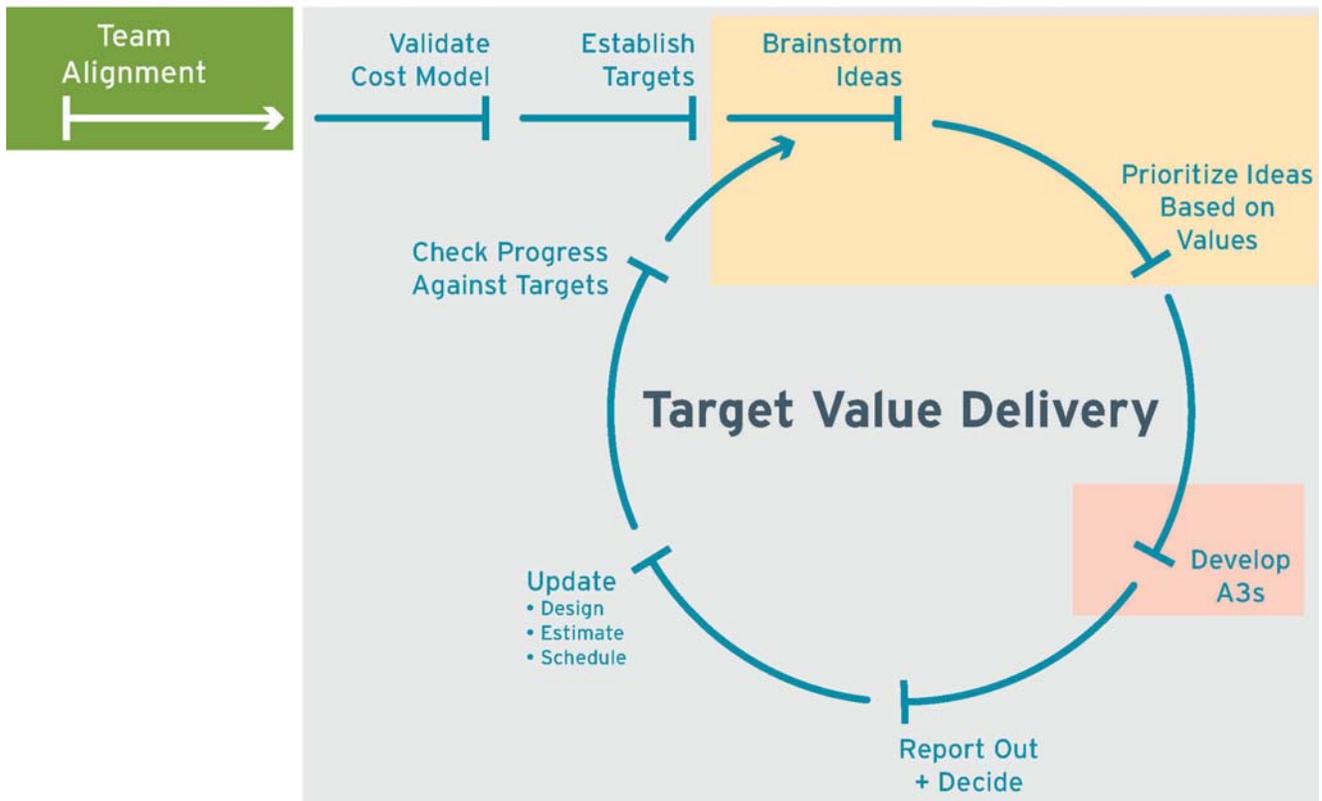
—Michael Burke
Lionakis

Target Value Delivery Process

Team Alignment
Strategy Development

Building Due Diligence
Target Value Design

Model Based Coordination
Phase Planning





Proposer may describe the Quality Control Program for this Project, including specific techniques and procedures to be used. Proposer may describe how it will handle and resolve issues that require effective communication and skilled facilitation with Owner and the Project team.

4. QUALITY CONTROL AND PROBLEM SOLVING

Your veteran XL team brings lessons learned from a diverse portfolio of health care projects to develop a comprehensive South San Francisco Campus specific Quality Control Plan. We maximize quality through technology to create schedule reductions, eliminate rework, avoid change orders, install the right products, and ensure that your project requires no call backs during the warranty period.

Integrated QA/QC

QA/QC is integrated into each step of the project life-cycle. We intend to inject quality through the following steps:

- **Alignment Session** - Identify the key quality potential on this project.
- **Constructability Reviews** - Simplify for construction, inspection and operation/maintenance
- **Virtual and On-Site Mock-Ups** - Maximize effectiveness and efficiencies of details
- **First In-Place Reviews** - to ensure everyone understands quality expectations
- **Pre-Qualification Process** - Integrate into the selection of our Trade Partners
- **Build trust with AHJs** - Through preconstruction interaction with AHJs, solidify our reputation as a great contractor in the bay area.
- **ITBs/Trade Partners** - Fill in the blanks, and remove the excess
- **BIM Execution Plan** - Help eliminate rework and create ownership in coordination
- **Pre-Construction meetings with AHJs/Inspectors** - Meet several weeks prior to work being put in place to get Trade Partner Foreman and inspectors on the same page

- **Pre-inspections** - We are the 2nd line of defense. Example - we have a 98% pass rate for over 1200 inspections on the El Camino Behavioral Health Project and CUP project, both OSHPD projects.
- **Commissioning** - Work hand-in-hand to ensure efficient start-up, testing and operations of systems, ensuring they function to everyone's expectations.
- **Close Out/Turn Over** - Help guide and train campus facilities personnel to be effective in the utilization of their new home.
- **Implement XL Construction project specific Contractor Quality Control Plan** - Tried and true procedures and processes for ensuring the project is built right, the first time.
- **11-Month Follow-up** - ensure facility is running at optimal capacity and all expectations continue to be met.

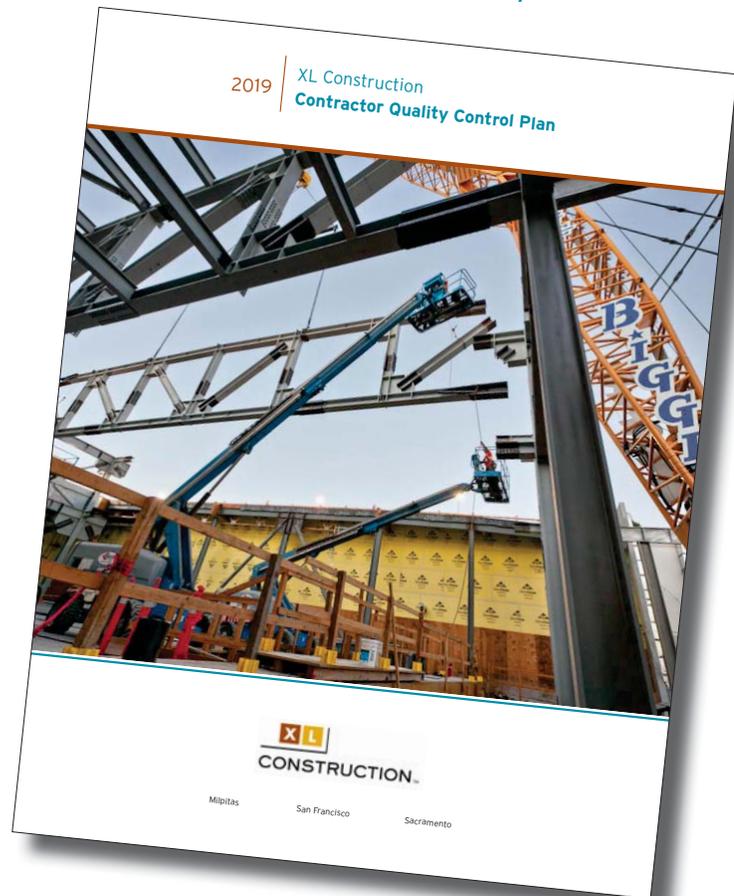


Whitney Karplus
QA/QC Manager

XL's QA/QC Manager
implements the
Quality Control Plan

Some of the key project components the QA/QC team will focus on includes:

- Quality of Life during construction
- Durability
- Underground Utilities/Services
- Foundations
- Structure
- Waterproofing (Skin and roof)
- 1st in Place mock-ups
- Mock-up of Skin System



Onsite Sustainability Program

XL learns lessons from each project that it builds, and works that into a process of continual sustainability improvement. Our program take the best practices from onsite management and green building techniques, and focuses on early planning for your project. From project kick-off, through design and on to construction, we will integrate your project goals with our experience to deliver an environmentally, economically, and socially responsible facility.

Achieving LEED v4 Certification:

LEED v4 brings challenges to both the Design and Construction teams. Experience in implementing v4 requirements will be key to achieving certification efficiently, while building value into the building. XL brings our experience in LEED implementation to this project, with a focus on maximizing the construction phase credits under our control, and providing value to the design team on pricing options.

Our team would focus on the following credits:

- Work with the design team to increase water efficiency in restroom fixtures. This is of local import, and also a Regional Priority credit.
- Utilize XL's database of product which have an EPD or HPD to help focus material selection to maximize Building Product Disclosure & Optimization credits
- Work closely with the Commissioning Agent to bring the building online and working at maximum efficiency as quickly as possible
- Maintain air quality and cleanliness throughout construction in pursuit of both Construction IAQ and Enhanced
- Utilize XL self-hauling waste services and onsite separation to achieve the highest diversion possible



Courtney Lorenz
Sustainability Expert

 New SSF Campus Onsite Sustainability Program		
Purpose: Establish onsite controls to reduce or eliminate negative environmental and community impacts during construction activities.		
Category	Feature	Potential Environmental Impact
Storm Water Pollution Prevention	SWPPP controls	perimeter fencing, inlet protection, sampling frequency
	Waste bin covers	prevent airborne waste, water accumulation in waste
	Prevention of soil trespass	entrance/exit maintenance to prevent soil loss offsite
Waste Management	Planning for diversion goal	plan to achieve project specific diversion goal
	Report waste percentages	aggregating all waste reports, update project regularly
Noise & Vibration Mitigation	Noise restrictions	work hours, noise limits, measuring noise levels
	Vibration restrictions	vibration monitoring, sensitive zone identification
Environmental Logistics	Dumpster placement	ensure space available for onsite separation
	Parking/ Traffic planning	minimize impact to community, parking plan for workers
	Material storage area	secondary containment, isolation of hazardous materials
	Fuel storage/delivery	dedicated area for onsite fueling, spill prevention
Air Quality	Habitat protection	identify sensitive habitats, prevent construction impacts to species of concern
	Tobacco policy	prevent smoking onsite, provide signage, identify smoking areas as needed
	Material protection	prevention of mold, mildew, material degradation
	Duct/HVAC protection	covering of duct end, filter change out schedule
	Machine idling	limits on machine idling time
Jobsite Office Planning	Building flush-out	~ 2 week flush-out of new conditioned space
	Waste prevention	provision of reusable consumables in onsite office
	Waste diversion	recycling within project office
	HVAC filters	trailer/office filter change out schedule
	Lighting solutions	efficient lighting within office, LED for safety/security
	Energy management	automatic shutoff of lights, HVAC
Water Use Reduction (potable/non-potable)	Dust control	seeding, soil suppression agents
	Entrance/exit mgmt	prevention of trespass, non-potable water usage, rumble strips
Use of Key Low VOC Materials	Adhesives, Sealants, Paints	specify low VOC content per referenced standard



Proposer may describe how it will use innovative techniques and technology to support the Project and may include experience and capabilities with BIM analysis.

5. TECHNOLOGY AND INNOVATIVE TECHNIQUES

Selecting and implementing the correct technologies, both in construction and building infrastructure, and selecting the appropriate prefabrication components provide future flexibility and extend the life cycle of the facility. The XL Team's experience in selecting these systems and components assures your project will see reduced cost and faster delivery from the efficiencies in how we execute the work.

Technology in the Hands of Experts

Technology in construction is a tool, not a solution. The greatest potential value of applied technology is only achieved when it is used by an expert. XL's in-house technology staff has over 75 years experience in construction and over 30 years experience applying Construction Technologies to projects. **Our expert skills in construction technology allow us to proactively create solutions that prevent delays and eliminate expensive, time consuming rework.**



DJ Phipps
Senior VDC Manager

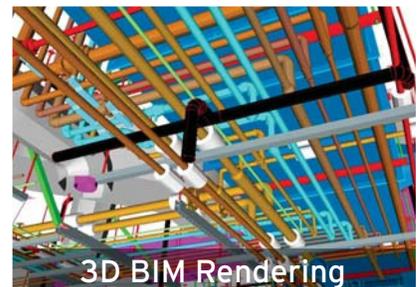
XL's Construction Technology Solutions

The solutions we offer to the New South San Francisco Campus will be accomplished with the following proven, innovative technologies:

- **Virtual Design and Construction (VDC) Coordination:** We will create a project specific BIM Execution Plan to collaboratively manage and deliver the VDC Coordination process. This will identify, resolve and communicate potential issues early in the process thus **increasing efficiencies in the field.**

Our combined knowledge and experience empowers us to see problems and resolve them before they get anywhere near your project. No delays. No head scratching. No change orders. No problems. We will also use the VDC process to identify prefabrication opportunities, such as wall and roof systems, structural building systems and mechanical systems. Prefabrication of these elements will result in a safer work environment, less cars at the jobsite, reduced noise levels, early QA/QC processes and schedule savings.

- **Model based layout:** XL will work with our Trade Partners to use proven methods of combining the VDC process with real world locations in order to ensure elements and systems easily find their place on the project. This method translates the virtual model to the field during installation. **We will put things in the "right place the first time, every time." We will eliminate costly rework.**



Prefabrication—an Important Construction Tool

We are mindful of the impact construction will have on neighbors. We believe that collaborating with the designers to develop ways to modularize the building is critical to mitigating that impact.

When modularized, specific building components and systems are fabricated off-site to provide the following benefits for the project:

- Reduce the overall construction schedule
- Increase quality of the final product
- Reduce noise and other impacts to clients during installation
- Allows for earlier start of installation for downstream scopes
- Reduces safety risks with less labor required on-site

The net result is that we can reduce costs and expedite the project completion date.

On your project, we anticipate closely coordinating with the design team to address prefabrication strategies for the following systems:

1. Overhead MEP Systems

Objective: Prefabricate system components and sections for consolidation of racked utilities for faster field installation and easier access to valves and components for planned maintenance.

Scopes: Ductwork, piping systems, plumbing, wiring management systems

Benefits: Faster completion of MEP overhead rough-ins, higher level of quality and easier access for future maintenance and building operation needs

2. Interior Walls

Objective: Prefabricate complete interior partition wall systems for faster field installation

Scopes: Stud framing, backing, MEP in-wall components, insulation, sheetrock, wall paneling

Benefits: Faster completion of interior walls and higher level of quality

We leverage technology through out the construction process to ensure our prefabrication efforts succeed.



Prefabricated wall units arrive at the job-site, get lifted into place, and swiftly installed with little noise disruption and minimal impact to the existing facility.

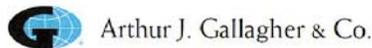
We use robotic layout tools to determine the exact locations of electrical, plumbing, and other items that protrude from the concrete slabs and import that information into our wall shop drawings to ensure that the prefabricated wall assemblies fit when they arrive on site.

G. Insurance and Certifications



Proposer should provide a letter from a surety duly licensed to do business in the State of California, having a financial rating from A/M Best Company of A-, VII or better.

1. LETTER FROM SURETY



February 25, 2019

XL Construction Corp.
851 Buckeye Court
Milpitas, CA 95035

RE: County of San Mateo Project Development Unit – RFSOQ
South San Francisco Campus Project

To Whom It May Concern:

This letter is to confirm that XL Construction Corp has the following insurance coverages and limits in place with an AM Best Rating of A+ XV. XL Construction Corp. is licensed to operate in the State of California. The following are the insurance coverages currently in place:

General Liability:	\$1,000,000 Each Occurrence \$2,000,000 General Aggregate \$2,000,000 Products Completed Ops Aggregate \$2,000,000 Per Project Aggregate
Automobile Liability:	\$1,000,000 Each Occurrence \$1,000 Compensation/Collision Deductible
Workers' Compensation:	Statutory Limits
Employer's Liability:	\$1,000,000 Each Accident \$1,000,000 Disease/Occurrence \$1,000,000 Disease/Aggregate
Umbrella/Excess Liability:	\$51,000,000 Each Occurrence \$51,000,000 General/Annual Aggregate Coverage is follow form as respects to the General Liability/Employer's Liability and Automobile Liability
Professional and Contractors Pollution Liability:	\$10,000,000 Each Act or Pollution Condition \$10,000,000 Aggregate
Builders Risk:	\$100,000,000 Project Limit Available

Also additional limits and coverage lines may be available should they be required. Should additional coverage information be needed, or if you have any questions, please do not hesitate contact us.

Sincerely,

Carla Colombana
Direct: 925-953-5260

Arthur J. Gallagher & Co. Insurance Brokers of California, Inc.
3697 Mt. Diablo Blvd. Suite 300
Lafayette, CA 94549
CA Lic # 0726293

o 925.299.1112
f 925.299.0328
ajg.com



2603 Camino Ramon, Suite 300
San Ramon, CA 94583-9137

February 25, 2019

To: County of San Mateo

Re: Prequalification Letter - XL Construction Corporation
Project: South San Francisco Campus Project

To Whom It May Concern:

XL Construction Corporation ("XL") has asked us to provide you with information relating to our experience and relationship with them as their surety.

Federal Insurance Company has participated in the surety program of XL for the past 16 years. We have had a most favorable experience with XL, and developed a high regard for them as a surety customer. We support XL with a surety program with a total current bonding capacity in excess of \$400,000,000 and a single project bonding capacity of approximately \$200,000,000 with an available bonding capacity in excess of \$300 million.

If XL Construction is awarded the Contract, we will provide XL Construction a 100% performance and payment bond. Our support is conditioned upon and subject to the completion of our underwriting process, including, but not limited to, our review of and satisfaction with the underlying contract documents, bond forms and financing, and our determination that the proposed bonding arrangement is acceptable to us.

This letter is not an assumption of liability or a commitment to issue bonds. It is solely a contractor prequalification letter for XL, which is being furnished to you at its request. Any arrangement for bonds is strictly a matter between XL and Federal Insurance Company.

Federal Insurance Company is an admitted surety insurer authorized to issue bonds in the State of California. Federal Insurance Company is a U.S. Treasury listed surety with an A.M. Best & Company credit rating of A++ (Superior) XV and is listed on the U.S. Treasury Listing with an underwriting limitation of over \$1.1 billion.

If we can provide any further assurance or assistance, you may contract Kevin Re at Arthur J. Gallagher & Co. located at 1255 Battery Street, Suite 450, San Francisco, CA 94111; phone number: 415.288.1636.

Sincerely,

Federal Insurance Company

By:

A handwritten signature in blue ink, appearing to read "Susan M. Exline".

Susan M. Exline, Attorney-in-Fact

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Contra Costa)

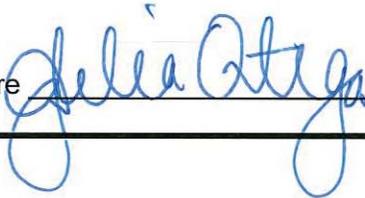
On February 25, 2019 before me, Julia Ortega, a Notary Public
(insert name and title of the officer)

personally appeared Susan M. Exline,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)





Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint Susan M. Exline and Kevin Re of Lafayette, California; Virginia L. Black, Brian F. Cooper, Susan Hecker, M. Moody, Maureen O'Connell, Janet C. Rojo, Betty L. Tolentino, Robert P. Wrixon and K. Zerounian of San Francisco, California-----

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this 17th day of August, 2018.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

Stephen M. Haney

Stephen M. Haney, Vice President



STATE OF NEW JERSEY

County of Hunterdon ss.

On this 17th day of August, 2018, before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with Stephen M. Haney, and knows him to be Vice President of said Companies; and that the signature of Stephen M. Haney, subscribed to said Power of Attorney is in the genuine handwriting of Stephen M. Haney, and was thereto subscribed by authority of said Companies and in deponent's presence.

Notarial Seal



KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2318885
Commission Expires July 16, 2019

Katherine J. Adelaar

Notary Public

CERTIFICATION

Resolutions adopted by the Boards of Directors of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY on August 30, 2016:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested."

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
- (ii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Whitehouse Station, NJ, this February 25, 2019



Dawn M. Chloros

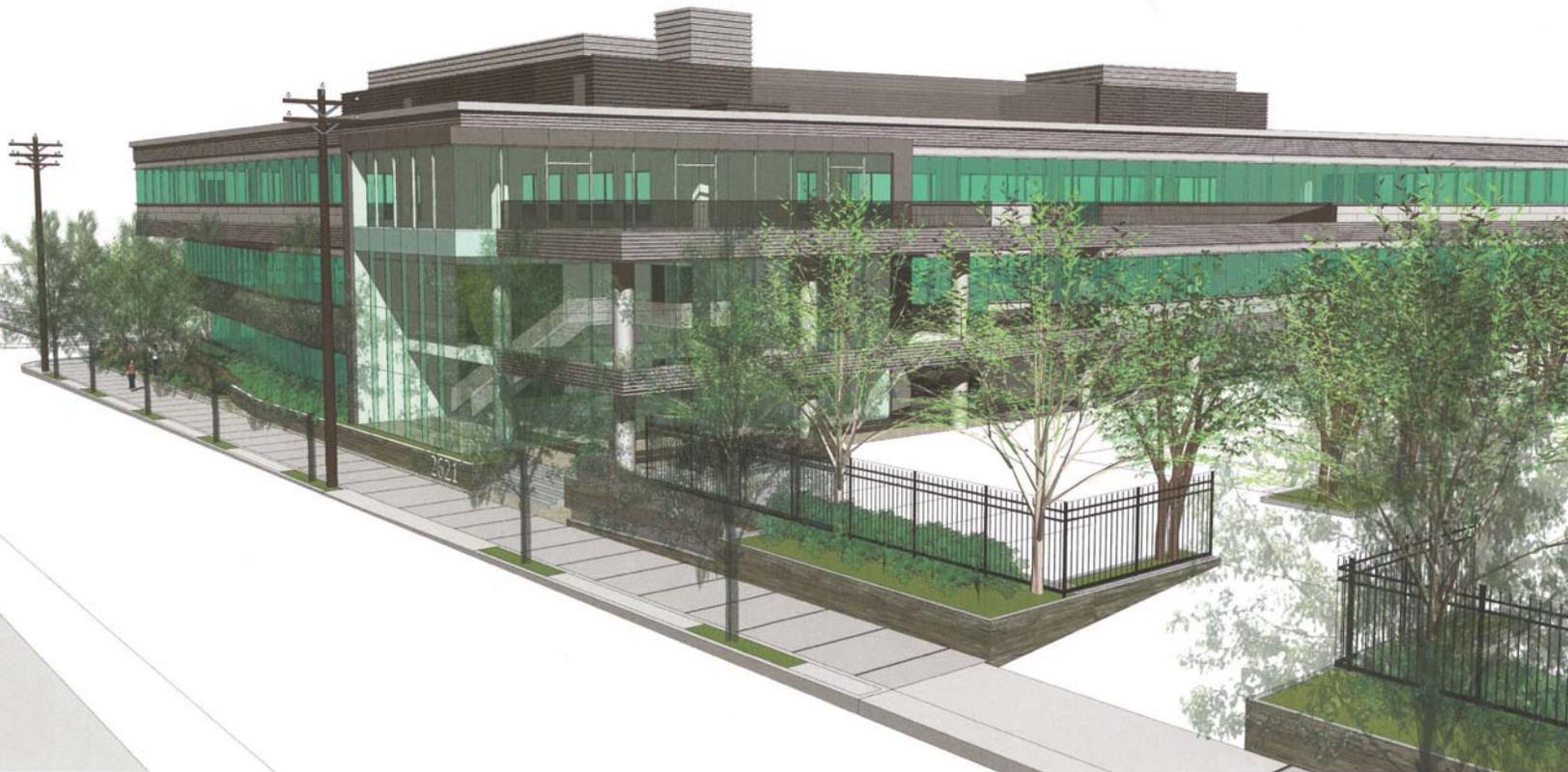
Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:
Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com

Exhibit CC

February 28, 2019
Statement of Qualifications

County of San Mateo South San Francisco Campus Project



XL
CONSTRUCTION[™]
We build to improve lives[®]

Craig Jamison
Project Executive
XL Construction
851 Buckeye Court
Milpitas, CA 95035
408/240-6000
cjamison@xlconstruction.com

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1

XL INFORMATION

01 XL Information

Contractor's Full Legal Name XL Construction Corporation

Legal Structure of Business S Corporation

Managing Office Address 851 Buckeye Court
Milpitas, CA 95035

Phone 408/240-6000

Fax 408/240-6001

Website xlconstruction.com

XL Point of Contact



Craig Jamison

Project Executive

Email: cjamison@xlconstruction.com

Direct: 408/240-6336

Mobile: 916/300-8288

SIGNED STATEMENT

XL Construction acknowledges and accepts the terms and conditions of the issued RFSOQ for the South San Francisco Campus Project.



Alan Laurlund
Senior Vice President
XL Construction

OUR OATH

I declare under penalty of perjury under the laws of the State of California, that all information submitted under this RFSOQ is true and correct.



Alan Laurlund
Senior Vice President
XL Construction

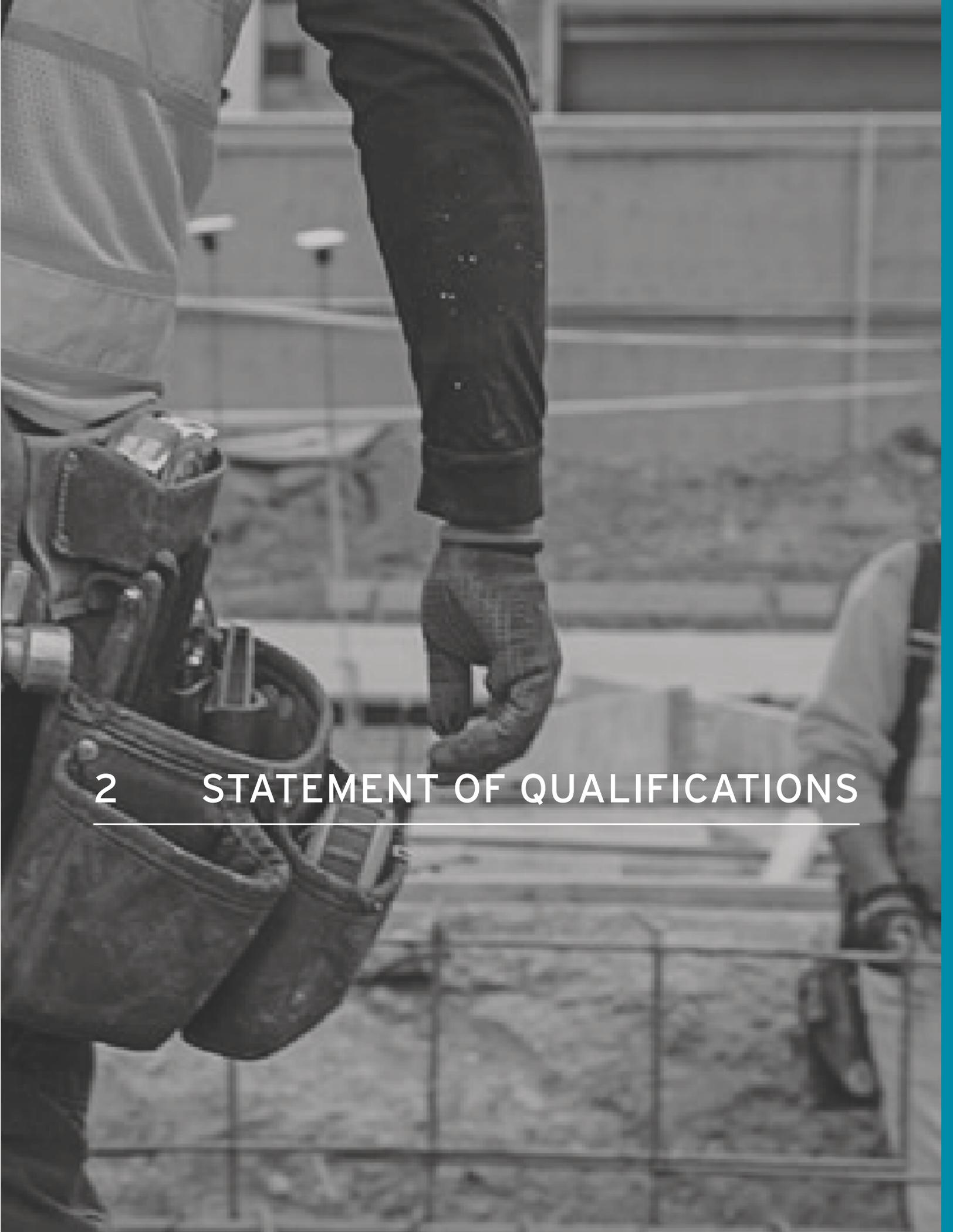
ADDENDA ACKNOWLEDGMENT

To date, we have not received any addenda.

Key Selection Criteria “Road Map”

Enclosed is a “Road Map” to assist the County of San Mateo in its evaluation process of our submittal.

Selection Criteria	Proposal Section(s)	Page Number(s)
Completeness of RFSOQ Submission	Tabs 1-12	1-46
Personnel Experience & Qualifications	Tab 4	12
Depth & Quality of XL's Performance	Tab 5	13-18
Technical/Management Approach	Tab 6	19-37
Availability	Tabs 3-4	9-12
Financial Stability	Tab 7	38
Sustainability Practices	Tab 6	37
Experience with CM at-Risk	Tab 5	13-18
Experience using Technology/BIM	Tab 6	36
Claims History	Tab 12	46
Assessment of Liquidated Damages	Tab 12	46
Size, Capability, and Continuous Operation in CA	Tab 3	9-11
Trust & Collaboration	Tab 6	19-37
Cost Control	Tab 6	27



2 STATEMENT OF QUALIFICATIONS

02 Statement of Qualifications Questionnaire

ATTACHMENT A-1 – Request for Statement of Qualifications Questionnaire

Proposers shall complete this entire Request for Statement of Qualifications Questionnaire and submit it in accordance with Document 00 45 16 (Statement of Minimum Qualifications). Failure to complete the questionnaire or inclusion of any false statement(s) shall be ground for immediate disqualification.

CONTACT INFORMATION

If joint venture, provide requested information for all companies under the joint venture entity. Attach additional pages to the end of this Questionnaire if needed.

Company Name: XL Construction Corporation

Owner of Company: List of owners can be found on Tab 1 - XL Information

Contact Person: Craig Jamison

Address: 851 Buckeye Court, Milpitas, CA 95035

Phone: 408/240-6000 Email: cjamison@xlconstruction.com

PART A: GENERAL INFORMATION

1. Does Proposer possess a valid and current California Contractor’s License for the work proposed? Yes XX No
2. Does Proposer have a minimum of \$5,000,000 Comprehensive General Liability insurance coverage, a minimum of \$2,000,000 for automobile coverage and full statutory coverage for Workers’ Compensation? Yes XX No
3. Has Proposer’s license been revoked at any time in the last five (5) years? Yes No XX
4. Has Proposer been “default terminated” by an Owner (other than for convenience), or has a Surety completed a contract for Proposer within the last five (5) years? Yes No XX
5. Has Proposer been convicted for willful failure to pay prevailing wages in the last three (3) years? Yes No XX
6. Has Proposer attached copies of its reviewed or audited financial statements and accompanying notes for the last three (3) years? Yes XX No

**Proposer may be disqualified if any answer to questions 1, 2, or 6 is No.
Proposer may be disqualified if any answer to questions 3, 4, or 5 is Yes.**

PART B: SAFETY, PREVAILING WAGE, DISPUTES AND BONDS

1. Has Cal/OHSA, Federal OSHA, the EPA or any Bay Area Air Quality Management District (BAAQMD), or any Regional Water Quality Control Board, cited Proposer in the past five (5) years for its work on a California construction project? Yes No XX

If yes, attach description of each citation and statement why such citation should not disqualify Proposer as a responsible Proposer under the California Public Contract Code. N/A

2. Describe Proposer's safety mission statement that guides the safety management on projects. Describe innovations the Proposer has implemented that improved safety performance. **See Tab 10**

What is Proposer's Interstate Experience Modification Rate (EMR) in the past five (5) years? A rating in excess of 1.0 may constitute grounds for disqualification as non-responsible.

Provide:

- (a) Proposer's State of California Experience Modification Rate (EMR) for the last five (5) years: 2018: 0.40 . 2017: 0.38 2016: 0.35 2015: 0.35 2014: 0.36
- (b) Proposer's OSHA recordable incident rate for the last five (5) years: 0 - No recordable incidents
- (c) Proposer's OSHA lost time incident rate for the last five (5) years: 0 - No lost time in 11 years!

Prevailing Wage Provisions

3. During the last five years, has Proposer been required to pay either back wages or penalties for failure to comply with California state prevailing wage laws or federal Davis-Bacon prevailing wage requirements for any California construction project? Yes _____ No XX

If yes, attach description of each instance and statement why such citation should not disqualify Proposer as a responsible Proposer under the California Public Contract Code. **N/A**

4. During the last five years, has Proposer been fined, penalized or otherwise found to have violated any prevailing wage or labor code provision not involving back wages or penalties described immediately above? Yes _____ No XX

If yes, attach description of each instance and statement why such citation should not disqualify Proposer as a responsible Proposer under the California Public Contract Code. **N/A**

License Provisions

5. Has Proposer changed names or license numbers in the past five (5) years? If so, please state reason for change. Yes _____ No XX
Current California Contractor License Name XL Construction Corporation No. 647480

Reason: _____

Disputes or Liquidated Damages

6. Has Proposer had any claims, litigation, legal proceedings, or disputes ending in mediation or arbitration, or termination for cause associated with any project since 2010, including litigation involving the Proposer and the proposed staff (in their professional capacities) for the Project? ("Litigation" or "Legal Proceeding" includes, but is not limited to, actions in civil or criminal court, mediation, arbitration, and all other forms of dispute resolution, settled or pending.)
Yes XX No _____

If yes, attach description of each instance including details of total claim amount, settlement amount, and Owner's name and phone number, and include the following specifics: **See Attached on Page 46**

List and describe unsettled/pending claims, demands, or notices of default since January 1, 2010. **N/A**

Has Proposer failed to complete a contract or been removed from a project within the past ten (10) years? Yes _____ No XX

If yes, attach description of each instance and statement why such failure to complete or removal from a project should not disqualify Proposer as a responsible Proposer under the California Public Contract Code. **N/A**

7. Has Proposer had liquidated damages assessed against it for delay by a Project owner on any project in the past five (5) years? If yes, attach description of each instance including details of total project time, number of days of inexcusable delay and reasons why the delay occurred, claim amount, settlement amount, and Owner's name and phone number. Yes _____ No **XX**

PART C: FIRM BACKGROUND

Please provide and attach the following information about your firm in accordance with the sequence stipulated in Article 5:

- A. Legal Structure (corporation, partnership, limited partnership, joint venture, etc.)
- B. Size of Firm / Staff
- C. Years in Business
- D. Organizational Chart of Firm, and tenure of executive management
- E. If Firm is a partnership or association, a listing of all of the partners, general partners, or association members known at the time of RFSOQ submission who will participate in an CM/GC Contract if awarded.

See Tab 3

PART D: EXPERIENCE

The nature of this Project requires prior similar experience for the firm and the Key Personnel assigned. Summarize similar project experience below and provide the detailed project information requested in accordance with the sequence stipulated in Article 5:

1. Key Personnel. List Key Personnel that will be assigned to the Work of the current Project and attach résumés demonstrating their experience/training with the qualifying projects listed in the RFSOQ (see item 2 below): **Resumes can be found in Tab 4**

Principal in Charge: Alan Laurlund

Project Executive: Craig Jamison

Project Manager: JD Ahern

Project Engineers (including MEP Coordinator): Jeremy Edwards (Lou Pietrelli/MEP Coordinator)
Randy Eissner/General Superintendent

Project Superintendent: Rob Wilbur/Project Superintendent

Project Scheduler: William Huang

LEED AP & Other Staff: Courtney Lorenz

BIM Coordinator: DJ Phipps

2. Qualifying Projects. On separate sheets, list the requested number of projects required in Article 4 and Article 5, and identify the superintendent, project manager and scheduler. NOTE: this listing will be used to assess compliance with the stated minimum qualifications. Please clearly delineate the following: **Project Experience Sheets can be found in Tab 5**

- A. Project Name and Description

- B. Delivery Method used
- C. Construction Cost
 - a. Contracted Cost
 - b. Projected cost at completion of design and Final cost at project completion
 - c. Cost per Square Foot
- D. Type of Construction (new, renovation, or expansion)
- E. Year Completed
- F. Total Gross Area
- G. Architect/Engineer Contact (name and phone number)
- H. Construction Manager or Project Manager (name and phone number)
- I. Major subcontractors including Structural System, Structural Subcontractors, and MEP subcontractors.
- J. Change Order Percentage - Did Change Orders exceed ten percent (10%) of original contract sum? If yes, please explain.
- K. Original Scheduled Date of Completion
- L. Actual Date of Completion
- M. Number of Stop Notices filed by Subcontractors or Suppliers
- N. Project photographs and /images
- O. Name of Superintendent
- P. Name of Project Manager
- Q. Name of Scheduler
- R. Name of QA/QC Officer
- S. LEED Certification achieved and any other Zero Net Energy / sustainable design features
- T. Minimum Qualification Elements Shown and any relevant Special Features
- U. Award(s) Received

3. Relevant Experience. Highlight relevant aspects of project experience regarding:

Project Experience Sheets can be found in Tab 5

- A. Local projects. Describe your experience involving projects planned or built in the County of San Mateo, local Bay Area locations and projects under OSHPD jurisdiction (OSHPD 3). Provide information that demonstrates your ability and experience to provide the services with focus on a local Bay Area and OSHPD project(s).
- B. Demonstrate your local project experience, and knowledge of local subcontractor community and of local market conditions and Proposer's unique skills and services.
- C. Project issues. Summarize how your experience on past projects addressed these project issues:
 - 1. Project Labor Agreements. Provide details of your experience with Project Labor Agreements.
 - 2. Local Participation. Describe your experience in developing participation of local firms, particularly small businesses. **See Tab 6**
 - 3. Teamwork and collaboration. Describe how you will closely interface and coordinate with Owner, its PM & other Owner's Representatives, the A/E team, and other consultants and users throughout the pre-construction and construction phases. **See Tab 6**
 - 4. Regulatory agency compliance. Describe how you will anticipate and comply with requirements of agencies having jurisdiction. **See Tab 6**
 - 5. Change Management. Describe systematic process to identify potential changes early, resolve/process them promptly and negotiate fair pricing. **See Tab 6**

See Tab 6, Item "D" ←

PART E: FINANCIAL INFORMATION

1. Has Proposer ever reorganized under the protection of bankruptcy laws?

Yes _____ No XX If yes, please state when _____

2. For each general liability carrier that has written CGL insurance to Proposer over the prior five (5) years, please provide information below:

Agency Name: Arthur J. Gallagher & Co 1255 Battery Street, Suite 450 / San Francisco, CA 94111

Contact Name: Kevin Re

Phone Number 415/288-1636

Carrier: CHUBB Group of Insurance Companies A.M. Best Rating: A++

Carrier: Arthur J. Gallagher & Co A.M. Best Rating: A+

Carrier: _____ A.M. Best Rating: _____

3. Has Proposer ever had insurance terminated by a carrier? Yes _____ No XX

If yes, explain on a separate signed sheet marked with correlating cross-reference to this paragraph of the questionnaire and an explanation of the reasons for the termination, including an explanation, if necessary, why the events that caused the termination of coverage should not disqualify Proposer as a responsible Proposer under the California Public Contract Code.

4. Financial and Bonding Information. (Only One (1) copy required) Include financial information for the Proposer in order to demonstrate Proposer’s financial capability to complete the Project. This may be submitted under seal and treated as confidential to the extent permitted under applicable federal and state law. In order to demonstrate the Proposer’s financial capability, Proposers are requested to submit the following items:

- A. Financial statements for the three (3) most recently completed fiscal years (including Income Statement and Balance Sheet) which were audited or reviewed by an independent accounting firm using GAAP or other information for the Proposer and each member of any proposed partnership, joint venture, limited partnership, or association that comprise the Proposer as a legal entity to contract in California to demonstrate the financial capability necessary for this Project. Include also audited or reviewed financial statement for the three (3) most recently completed fiscal years for any parent companies of the Proposer. **See Tab 7**
- B. A list of any loans on which the Proposer or member has defaulted in the last five (5) years. **NONE**
- C. A list of financial references, including the name of the individual, title, company name, and phone number, for at least two (2) individuals that have provided the Proposer (or Project Team Member) with financing during the last three (3) years. **See Tab 7**
- D. Submit a letter from a surety company licensed to do business in the State of California, having a financial rating from A. M. Best Company of A-, VII or better, that states that the Firm has sufficient bonding capacity for the project Scope and cost as stated in these Instructions for Proposals and has agreed to provide the Proposer with the required performance and payment bonds in accordance with the County requirements. Owner shall have the right to verify with the surety that the surety, based upon the bid prices, will issue the required bonds under the conditions stated. Approved construction cost (hard cost) for the Project is approximately \$70 million. **See Tab 8**
- E. Submit a letter from an insurance underwriter, having a financial rating reasonably acceptable to Owner, confirming that the insurer will provide the Proposer the required coverages and amounts. Approved construction cost (hard cost) for the Project is approximately \$70 million. **See Tab 9**

- F. Identify if the proposing firm is currently for sale or involved in potential transaction to expand or to become acquired or merged by another business entity. If so, explain the impact in both organization and company direction. **N/A - XL is not for sale or involved in a merger.**
- G. Document Proposer's ability to perform the volume of work described in the Contract Documents given Proposer's current and anticipated workloads in [TBD]. Summarize current work commitments broken down by project delivery method (GC, CM, CM Multiple Prime, other) and volume of work. **See Tab 3**

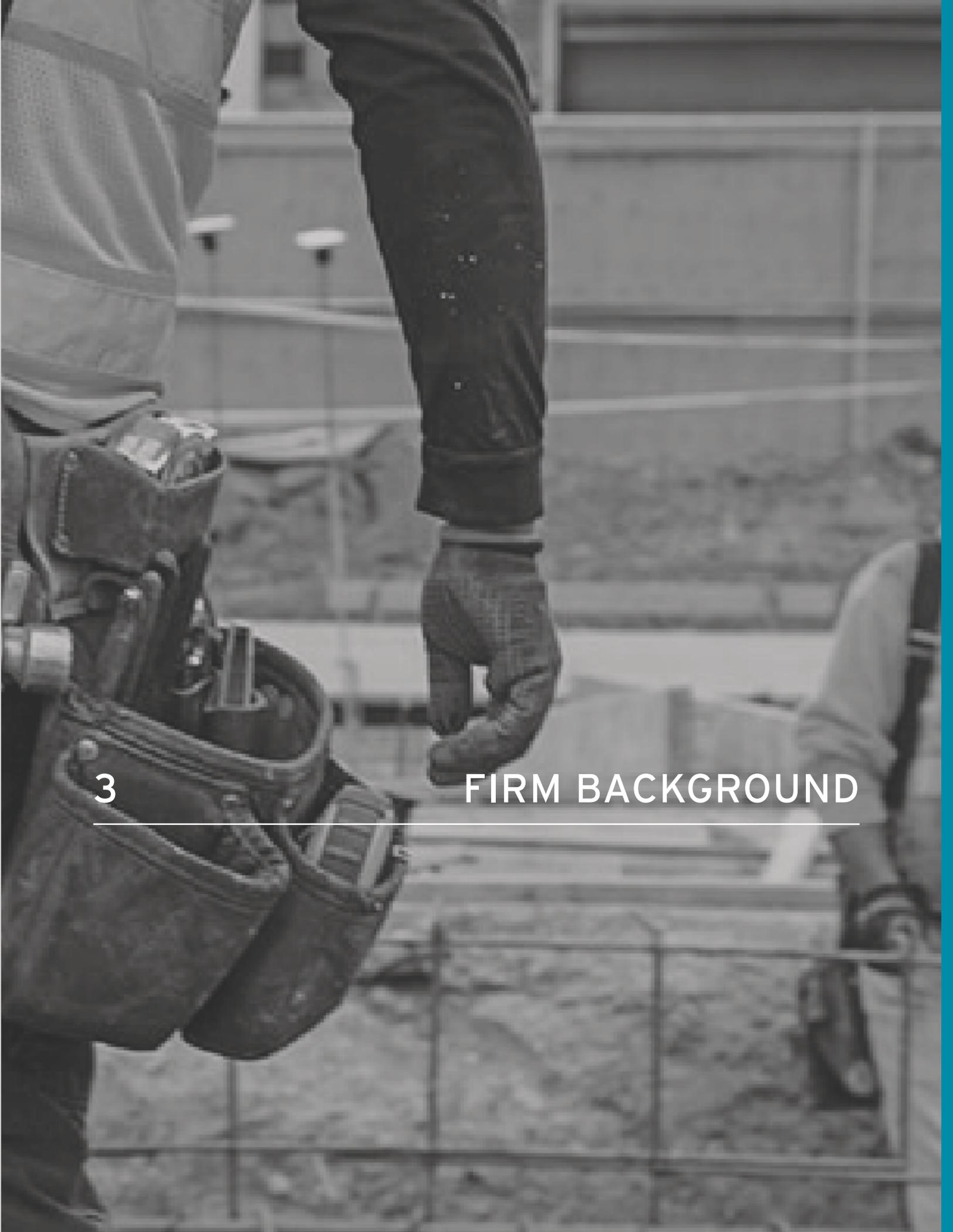
Proposer hereby declares under penalty of perjury that all the information provided in this questionnaire is true and correct.



SIGNATURE

Alan Laurlund, Principal in Charge / Senior Vice President
TITLE

END OF ATTACHMENT A1



3

FIRM BACKGROUND

03 Firm Background

Founded in 1992 by Eric Raff and Dave Beck, XL Construction is a leading provider of construction services for clients across an array of markets: Education, Structures + Interiors, Science + Technology, and Healthcare.

In its 26 years, XL has accumulated a deep bench of experience in a variety of project types. In line with Northern California’s spirit of innovation and entrepreneurship, we have come to possess an intimate familiarity with, and a keen insight into, the trends and transformations facing this area. Accordingly, our approach toward our craft has evolved over time, guided equally by ingenuity and creativity. The result is consistent: without fail we give shape and substance to our client’s vision while building strong relationships with partners and clients alike.

Our purpose is simple:

We build to improve lives.

Mission: XL will be known as a great partner that drives team success by delivering projects the XL Way.

The “XL Way” in Practice

The planning, collaboration, communication, and execution for each of our projects is focused on the success of the entire team. This approach has earned us a network of excellent partners. Whether constructing acute care facility or a new classroom building, we offer a practical approach built on a foundation of technical construction experience that is tailored to meet each project’s specific needs. Ultimately, we aspire to bring years of experience to the table while utilizing the newest technology and sustainable practices as desired by our clients.

Previous, Current and Repeat XL Healthcare Clients



101 Projects



11 Projects



2 Projects



2 Projects

The XL Way

Our process draws upon the vast and diverse experiences of our team members as well as the successful projects XL has built over the past 25 years. We call it the XL Way. Applying this set of best practices in each phase of your project we will ensure we deliver a project that exceeds your expectations.

- Understand
- Plan
- Collaborate
- Execute
- Finish

XL CONSTRUCTION AT A GLANCE



26 | Years in Business

80+ | Number of LEED Accredited Professionals

580+ | Number of Employees

5.8M | Manhours with no lost time

0.40 | 2018 EMR

#1

"BEST PLACE TO WORK"
Silicon Valley/San Francisco
Business Times | 2017

#1

"BEST PLACE TO WORK"
Silicon Valley/San Francisco
Business Times | 2013

#2

"BEST PLACE TO WORK"
Silicon Valley/San Francisco
Business Times | 2016

#6

"HEALTHIEST EMPLOYER"
in the Bay Area
Silicon Valley/San Francisco
Business Times | 2014

#12

"CONTRACTOR RANKING"
in the Bay Area by size
Silicon Valley Business Journal | 2016

#14

"CONTRACTOR RANKING"
in the Bay Area by size
San Francisco Business Times | 2017

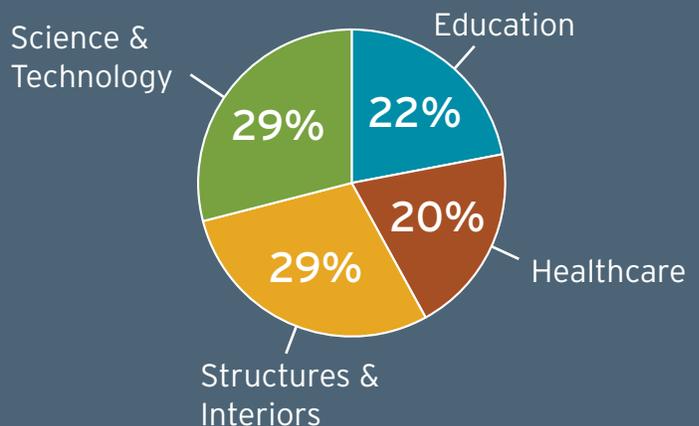
#18

"TOP GENERAL CONTRACTORS"
in the Bay Area by size
Modern Healthcare | 2016

Additional Staff Accreditation Include:
OSHA 10 & OSHA 30, P.E & E.I.T, STS,
CHST, DBIA & DBIA Associate

Market Segment Size 2018

(as a percentage of revenue)

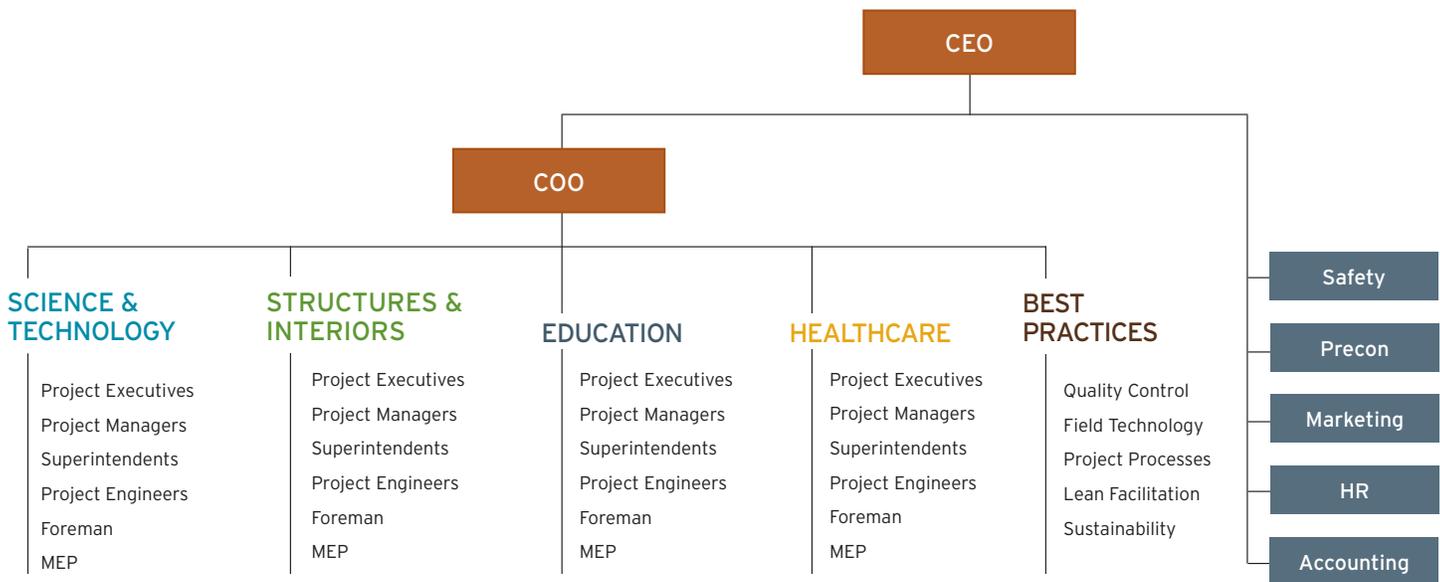


Just.
Certification Holder

TENURE OF EXECUTIVE STAFF

Executive	Title	Years with XL
Eric Raff	President	26
Dave Beck	Secretary / Treasurer	26
Richard Walker	COO	4
Alan Laurlund	Senior Vice President	19
Steve Winslow	Senior Vice President	23
John Boneso	Senior Vice President	13

FIRM ORGANIZATION CHART

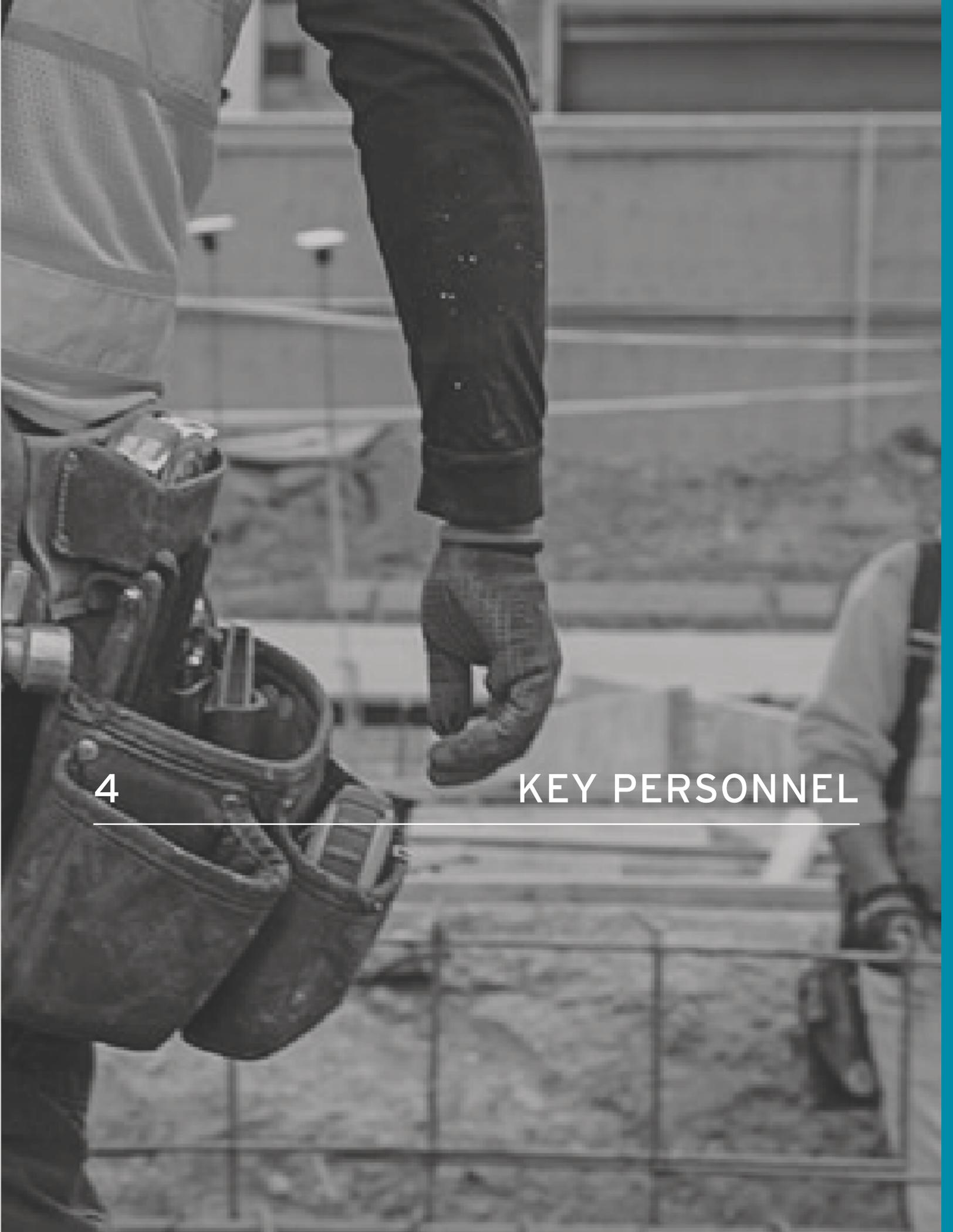


LEGAL STRUCTURE

S Corporation

CURRENT AND ANTICIPATED WORKLOAD

Current Workload		Anticipated Workload
GMP (CM at Risk)	\$700M	The anticipated workload for 2019 is \$670M.
Lump Sum	\$15M	
Design Build	\$75M	
Total	\$790M	



4

KEY PERSONNEL

04 Key Personnel



ALAN LAURLUND
Senior Vice President
XL Construction



Craig Jamison
Project Executive
916/300-8288
cjamison@xlconstruction.com

SMITHGROUP



Randy Eissner
General Superintendent



JD Ahearn
Senior Project Manager



Lou Pietrelli
Sr. MEP Coordinator /
Commissioning
Superintendent



Jeremy Edwards
Project Engineer



Rob Wilbur
Project Superintendent

Support Staff

Mike Popp, CSHM, CRIS, CLCS, CHST
Safety Director

Courtney Lorenz, LEED AP, BD+C
Sustainability Manager

DJ Phipps
VDC Manager

Andreas Phelps, PHD, LEED AP
Lean Facilitator

William Huang,
Scheduler

Dan Pawloski,
QA/QC Officer

Paul Martin,
TVD Specialist/Practitioner

We Not Me

Be True

Go Beyond

Alan Laurlund, LEED AP BD+C, CHC Senior Vice President



As the Senior Vice President, Alan will act as Principal-in-Charge representing XL Construction. He will provide overall project leadership and guidance, assuring all owner expectations are met. Alan's passion toward team development and long-term relationships will be invaluable in guiding the team and working with the County of San Mateo.

Years of Experience

30 Years of Construction Experience
19 Years with XL Construction

Education

B.S. Construction Management
Cal Poly San Luis Obispo

References

Katy Merwin

UCSF
3333 California Street, Suite 115
San Francisco, CA 94118
415/885-3506
katy.merwin@ucsfmedctr.org

Ken King

El Camino Hospital
2500 Grant Road
Mountain View, CA 94040
650/940-7300
ken_king@elcaminohospital.org

Gary Giglio

(Formerly with)
Kaiser Permanente
3400 Broadway
Oakland, CA 94611
925/935-8233
gary.giglio@utah.edu

Project Experience

El Camino Hospital Behavioral Health Center • Mountain View, CA

New, 60,000 s.f., two-story, behavioral health services center being built adjacent to the existing facility. The facility will house 36 beds and offer both inpatient and outpatient services. The project is targeting LEED Gold certification. In progress (OSHPD)

UCSF Moffit Long Hospital Nursing Unit & Backfill • San Francisco, CA

Remodel of the UCSF Parnassus Long Hospital 7th, 11th, 12th, 15th Floors & Moffitt Hospital 7th and 15th Floors. The project includes the abatement/demolition of the floors with new construction of Neuro/Spine, Hematology & Medical Oncology Nursing Unit areas. Additionally XL replaced the AHU on the 16th floor including roof replacement. (OSHPD)

UCSF Moffitt/Long Third Floor Renovation • San Francisco, CA

The renovation of Moffitt Hospital's 3rd Floor, including mechanical, electrical and fire/life Safety upgrades required for installation of new equipment in two diagnostic angiography rooms and related support spaces. (OSHPD)

UC Davis Capitol Medical Center • Sacramento, CA

Build-out of a new outpatient clinic located at Capitol Medical Center. The project will have a focus on clinical space and will include some OSHPD III licensed space. The building has recently undergone extensive renovations including a new roof, skylight, HVAC system, lobby and common area improvements. The new improvements were certified as LEED Silver.

Kaiser San Ramon Medical Office Building • San Ramon, CA

Preconstruction and construction services for the renovation of an existing three-story, 70,000 s.f. office building into a Medical Office Building meeting USGBC LEED Gold certification. Department build-outs include Family Health Services, Dermatology, Obstetrics/Gynecology, Sports Medicine and Physical Therapy. Other services include a pharmacy, lab/blood draw and imaging suites.

Craig Jamison, LEED AP

Project Executive



Craig provides executive oversight during preconstruction, making sure that the project-specific work plan and the scheduling are all accomplished to meet your needs. During construction, he will ensure that XL Construction's on site management team has all the resources to successfully deliver this project.

Years of Experience

25 years of Construction Experience
2 year with XL Construction

Education

B.S. Industrial Technology
CS, Fresno

References

Charles Wagner, AIA
Hawley Peterson Snyder (HPS)
1237 E Arques Ave B
Sunnyvale, CA 94085
650/968-2944
cwagner@hpsarch.com

Chang Yi
Kaiser Permanente
1600 Eureka Rd,
Roseville, CA 95661
916/784-5284
Chang.k.yi@kp.org

Candace Mifkovic
Kaiser Permanente
1600 Eureka Rd,
Roseville, CA 95661
916/784-5284
candace.mifkovic@kp.org

Project Experience

Kaiser Foundation Health Plan, Inc. Roseville Women's and Children's Center, • Roseville, CA

198,000 s.f. four-story addition to the existing Kaiser Roseville campus. This facility is Kaiser's first specialized Women's and Children's center in the network and their first dedicated pediatric intensive care unit in the greater Sacramento Region. It brings together prenatal, birthing and postnatal services, including pediatrics, neonatal intensive care, labor and delivery rooms, post-delivery beds, a 30-newborn nursery, triage and observation beds and C-Section rooms. (Completed 2008) (OSHPD)

Solyndra, Inc. Fab 2 420 MW Front End Manufacturing Facility • Fremont, CA

580,000 s.f. new thin-film solar equipment manufacturing facility which contain 300,000 s.f. of manufacturing plant floor area and mezzanine utility floor with Class 100,000 (ISO 8) clean room space, 35,000 s.f. of administrative and professional office space and a 84,000 s.f. central utility plant. (Completed 2010)

Kaiser Foundation Health Plan, Inc. Phase 5 Site Improvements, • Roseville, CA

Renovations to approximately 7 acres of an existing operational medical campus including the installation of new sanitary sewer, domestic water, fire service, fire water, telecommunications infrastructure, site lighting, landscaping and power distribution. (Completed 2008) (OSHPD)

The Macerich Company Broadway Plaza Retail Development • Walnut Creek, CA

1,378,161 s.f. retail development of an existing operating shopping center includes 300,000sf new and renovated buildings, site work, a vehicular bridge and 1,078,161sf of combined parking garages C & D with 2,480 total parking stalls performed in phases including a riparian habitat restoration and working closely with the Army Corps of Engineers and CDFW in the installation of the new vehicular bridge. A third existing parking garage is also being retrofitted. (Completed 2017)

JD Ahearn, LEED AP

Senior Project Manager



As a Senior Project Manager, JD provides overall management and administration of the project. This includes preconstruction services, estimating, subcontractor management, budgeting, and submittal processing.

Years of Experience

25 Years of Construction Experience
1 Year with XL Construction

Education

B.S. Engineering
Cal Poly San Luis Obispo

OSHA 30

FMI Leadership Training

References

James Pease

Sutter Health, Owners Rep.
1501 Trousdale Drive
Burlingame, CA 94010
650/833-8773
peasejd@sutterhealth.org

Dennis Mowbray

Devenney Group
337 17th St #216
Oakland, CA 94612
510/834-5008
DMowbray@devenneygroup.com

Jeff Harrison

Harrison Drywall, Owner
447 10th St
San Francisco CA 94103
415/821-9584
jeff@harrisonsdrywallinc.com

Project Experience

MPHS Behavioral Health Renovation OSHPD • San Mateo, CA

A 30,000 s.f. behavioral health relocation and upgrade in an operating hospital.

Kaiser Permanente, Behavior Health • Multiple Locations, CA

Repurposing of five buildings into Behavioral Health Facilities in Santa Clara, San Leandro, Fremont, Modesto, and Lathrop totally 125,000 s.f.

Replacement Hospital St. Luke's OSHPD • San Francisco, CA

A 250,000 s.f. replacement hospital complete with penthouse central utility plant, imaging suites, labor and delivery floor and Operating suites. It was delivered through an Integrated Form of Agreement between Owner, Contractor, and Architect. Lean project delivery methods were applied utilizing co-location with major trade partners, Last Planner, and Takt Time planning. Project is projected to attain LEED Silver and Enhanced Commissioning.

PAMF Fremont Surgery Center OSHPD • Fremont, CA

A 30,000 s.f. ground up design-build outpatient surgery center. IFOA contract using IPD.

PAMF Burlingame MOB OSHPD 3 • Burlingame, CA

A 100 000 s.f. medical office building supporting new hospital. Design-assist MEP contractors.

MPHS OR Buildout OSHPD • Burlingame, CA

An 800 s.f. fully integrated state of the art operating room build out delivered with design-build MEP systems.

Kaiser Fremont Inpatient Pharmacy Upgrades • Fremont, CA

20,000 s.f. upgrade to the Fremont Hospital Inpatient and Oncology/Infusion Pharmacies to comply with USP 797 and 800, and to upgrade electronic security systems to comply with NFS Chapter 28 standards and to upgrade electronic security systems to comply with NFS Chapter 28 standards.

Randy Eissner

General Superintendent



As a General Superintendent, Randy's involvement and influence on the project will be focused on quality, schedule, and safety. He will collaborate with the on-site team to maintain our proven and established procedures and will ensure that the field has all the necessary resources to be successful.

Years of Experience

31 Years of Construction Experience
1 Year with XL Construction

Education

B.S. Construction Management
Chico State University

References

Walterio Lopez

Rutherford + Chekene
375 Beale Street, Suite 310
San Francisco, CA 94105-4544
415/568-4421
wlopez@ruthchek.com

Herb Moussa

Smith Group
301 Battery Street 7th Floor
San Francisco, CA 94111
415/365-3562
herb.moussa@smithgroupjjr.com

Susan Eschweiler

DES Architects & Engineers
399 Bradford Street
Redwood City, CA 94063
650/364-6453
seschweiler@des-ae.com

Project Experience

UCSF Institute for Regeneration Medicine (RMB) Building, San Francisco, CA

67,000 sq. ft. building to house stem cell and developmental biology research and includes wet labs, lab support and offices to hold 200-250 seats. Project is targeting LEED Gold Certification.

Sutter Health, Sutter Santa Rosa - Precon, Santa Rosa, CA

150-bed, 300,000-sq.-ft. replacement hospital and ambulatory care center.
Intel Corporation, Intel SC-4 Data Center Phase 4, Santa Clara, CA
Project Value: \$33,000,000
Conversion of (e) Office to new 3.24MW (825 Watt/sq. ft.) data center.

Kaiser Permanente Hospitals DBA Lab Backfill Berkeley - Phase 1, Berkeley, CA

Renovation of a building from lab spaces into offices with some lab space. Project includes the addition of a new mechanical room to the exterior of the building, as well as a Lanai connecting Bldg. 1750 to Bldg. 1725.

Dignity Health, CHW St Mary's Medical Cancer Center, San Francisco, CA

15,000-sq.-ft. LINAC/Infusion Suite with all support services. Renovation of 14,200-sq.-ft. radiation oncology wing located on the ground floor at 2250 Hayes St. in San Francisco, adjacent to St. Mary's main hospital building. The new Cancer Center provides comprehensive cancer care; from diagnosis and education to treatment, infusion, and radiation therapy, and recovery services, including a CT Simulator and Linear Accelerator. Construction of this OSHPD-3 project involved the demolition of existing structural walls and slab, then placing new 250 PCF and 300 PCF high density concrete walls and lead shielding at the perimeter walls and duct penetrations at primary beam locations of the existing treatment vault. A NELCO lead shielded, automatic swing door was also installed.

Chinese Hospital - Replacement Hospital, San Francisco, CA

New 101,500 sf hospital for Chinatown in San Francisco Design/Assist

Sutter Health - CPMC Nurse Call, San Francisco, CA

Per OSHPD approved plans produced by Bahr Architects Inc and Cammisa & Wipf, at the CPMC Hospital at 2333 Buchanan Street, San Francisco, CA 94115, installation of Nurse Call System Upgrade at the existing Third Floor Surgical and Intensive Care Units and Installation of an ADA compliant restroom in the Third Floor Surgical Unit.

Lou Pietrelli, P.E. LEED AP

Senior MEP Coordinator



As an Senior MEP Coordinator at XL Construction, Lou's participation begins at the BOD/design document review phase and extends through constructability reviews, scope clarification and bidding, MEP rough-in, field coordination, quality control, completion lists and finally, the systems start-up and commissioning.

Years of Experience

39 Years of Construction Experience
11 Years with XL Construction

Education

B.S. Environmental Engineering
Cal Poly San Luis Obispo

Certification

Registered Professional
Mechanical Engineer

References

Katy Merwin

UCSF
3333 California Street, Suite 115
San Francisco, CA 94118
415/885-3506
katy.merwin@ucsfmedctr.org

Olga Stoian

Kaiser Permanente
284 Hospital Parkway, Bldg K
San Jose, CA 95119
408/363-4868
olga.stoian@kp.org

Gary Ontano

IOR Kaiser
284 Hospital Parkway, Bldg K
San Jose, CA 95119
415/710-4892
olga.stoian@kp.org

Project Experience

El Camino Behavioral Health Replacement Facility • Mountain View, CA

The replacement of an existing Behavioral Health Services wing with a new two-story, 52,000 s.f. building with 36 new inpatient/outpatient beds.

UCSF Moffitt Long Hospital Nursing Unit & Backfill • San Francisco, CA

Remodel of the UCSF Parnassus Long Hospital 7th, 11th, 12th, 15th Floors & Moffitt Hospital 7th and 15th Floors. The project includes the abatement/demolition of the floors with new construction of Neuro/Spine, Hematology & Medical Oncology Nursing Unit areas. Additionally XL replaced the AHU on the 16th floor including roof replacement. (OSHPD)

UCSF OR 29 • San Francisco, CA

The project includes the renovation of OR 7 and OR 29 in UCSF's Long Hospital. OR 29 will be a hybrid Operating Room, housing Siemens Zeego hybrid equipment. OR 7 includes an IMRIS intra-operative MRI machine. XL performed preconstruction, participating in design and providing constructability, coordination, budget and schedule feedback. (OSHPD)

Kaiser San Ramon Medical Office Building • San Ramon, CA

Preconstruction and construction services for the renovation of an existing three-story, 90,000 s.f. office building into a Medical Office Building meeting USGBC **LEED Gold certification**. Department build-outs include Family Health Services, Dermatology, Obstetrics/Gynecology, Sports Medicine and Physical Therapy. Other services include a pharmacy, lab/blood draw and imaging suites.

Kaiser S. Sacramento AHU's Replacement Project • South Sacramento, CA

Replacement/Rebuild of 7 AHU units. Work includes replacing out all VAV/CAV boxes, changing all pneumatic controls to DDC, Replace heating hot water delivery system, Fan Wall system, building a new 6,000sf exterior penthouse for new AHU's, replacing some ductwork, etc.

Rob Wilbur

Senior Project Superintendent



As a senior superintendent for XL Construction, Rob is responsible for managing all on site field operations including coordinating subcontractors, project scheduling, quality control and project safety.

Years of Experience

40 Years of Construction Experience
17 Years with XL Construction

References

Alison S. Uchihara
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Mark Davis
Principal, DGA
550 Ellis Street
Mountain View, CA 94043
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mdavis@dga-mv.com

Project Experience

Kaiser Permanente Behavioral Health • San Mateo, CA

The medical office building project consisted of tenant improvements of a 15,986 s.f. interior space on the 3rd floor of an occupied building. The buildout included 29 provider offices and four group rooms, administrative areas, reception and waiting rooms, treatment rooms, housekeeping space and communication/LAN closets. Work also included sitework for accessibility upgrades, including new parking stalls, and path of travel.

TE Connectivity Project ARK TI • Fremont, CA

Tenant improvements of one two-story building and one three-story building totaling 186,000 s.f.. Scope of work includes clean room space, chemical and dry labs, office space, utility yard, and some exterior site work. The XL team has been working on revising the proposal and working on V.E. options with the client for over two months. The project agreement is a Lump Sum AIA Contract with modifications which has been negotiated with the client during the proposal/repricing process.

HGST Yerba Buena Tool Relocation • San Jose, CA

Relocate research and development tools and equipment, as well as support labs, from HGST's YB campus to the main campus in south San Jose. Work to include safe-off, packaging, transport, installation, fit-up, and commissioning of the tools. Lab and cleanspace will be constructed in several existing buildings to accommodate the incoming equipment.

Intel Corporation, Robert Noyce Building • Santa Clara, CA

Construction of 540,000 s.f. of both shell and tenant improvements which included training and conference facilities, plus two four-level parking structures.

Monterey Bay Aquarium, Outer Bay Wing Addition • Monterey, CA

This addition to the fresh water aquarium included a three level high, 90,000 s.f., poured in place concrete million gallon tank with a 12 3/8-inch thick acrylic window. The addition, and the footings and columns, extended 25 percent beyond the shoreline and a portion of the project was below sea level and subject to 400 lbs per square foot of pressure. To combat the water issues, temporary seawalls were built and salt water was constantly being pumped out.

Jeremy Edwards, LEED AP

Project Engineer



As a project engineer, Jeremy will work closely with the project manager and superintendent to coordinate subcontractor work, track and respond to submittals, and manage all jobsite documentation.

Years of Experience

2 Years of Construction Experience
2 Years with XL Construction

Education

Bachelors in Civil and Environmental Engineering, University of California, Berkeley

References

Margaret Williams

HPS Architects
1237 E. Arques Avenue
Sunnyvale, CA 94085
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Aaron Uras

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Project Experience

Kaiser Permanente Behavioral Health • San Mateo, CA

The medical office building project consisted of tenant improvements of a 15,986 s.f. interior space on the 3rd floor of an occupied building. The buildout included 29 provider offices and four group rooms, administrative areas, reception and waiting rooms, treatment rooms, housekeeping space and communication/LAN closets. Work also included sitework for accessibility upgrades, including new parking stalls, and path of travel.

Kaiser Generator Project - South San Francisco, Ca

This project entails replacement of the emergency power generator system at Kaiser's South San Francisco hospital. Scope includes, demolition of three (3) existing 500 kw diesel emergency power generators and replace with two (2) 1,000 kw diesel emergency power generators in the adjacent parking lot. A new structural concrete pad with drilled piers will house the generators and their enclosures. Upgrades to the existing electrical room and paralleling system is included.

Kaiser Pharmacy Upgrade - Fremont, Ca

Upgrade the Fremont Hospital Inpatient and Oncology/Infusion Pharmacies to comply with USP 797 and 800, and to upgrade electronic security systems to comply with NFS Chapter 28 standards and to upgrade electronic security systems to comply with NFS Chapter 28 standards.

William Huang

Project Scheduler



As a project scheduler, William maintains the contract schedule, provides monthly progress reports and reviews with team to anticipate upcoming work and critical path, participates in subcontractor pull schedule meetings, and provides the as-built schedule upon completion.

Years of Experience

27 Years of Construction Experience
4 Years with XL Construction

Education

B.S. from Pittsburg State University

References

Mark Davis

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Mountain View, CA 94043
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Alex Jangic

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Eric Miller

Sutter's Owner Rep.
3005 Webster Street
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millerE1@sutterhealth.org

Project Experience

El Camino Hospital Behavioral Health • Mountain View, CA

A ground-up, two-story, 52,000 s.f. OSHPD facility replaced the existing Behavioral Health Building on the El Camino Campus. The new state-of-the-art facility provides 36 patient rooms and services to both inpatient and outpatient members. The project achieved LEED Gold Certification. The project included the partial demolition of the existing BHS to accommodate the footprint of the new BHS along with upgrades to the campus Central Utility Plant.

UCSF Long Hospital Nursing Unit and Backfill • San Francisco, CA

Remodel of the UCSF Parnassus Long Hospital 7th, 11th, 12th, 15th Floors & Moffitt Hospital 7th Floor and 15th Floor. The project includes the abatement/demolition of the floors with new construction of Neuro/Spine, Hematology & Medical Oncology Nursing Unit areas. Additionally XL will remove/replace the AHU on the 16th floor including roof replacement.

Sutter Health, Alta Bates Summit Medical Center New Patient Care Pavilion (PCP) • Oakland, CA

254,255 s.f. 13-story, 238 bed patient tower with pharmacy, nuclear medicine, and dialysis services with tie-in to the existing hospital; 20,000 s.f. new emergency department. (OSHPD)

PAMF 401 Old San Francisco Road MOB • Sunnyvale, CA

Remodel of an existing 16,195 s.f. building including infill of existing atrium, complete new interior construction, elevator upgrade/replacement, and the renovation of the parking lot for ADA compliance. In progress

UC Davis Capitol Medical Center • Sacramento, CA

Interior demolition and tenant improvement of existing 120,000sf four-story medical office building located at Capitol Medical Center. The facility includes OSHPD III spaces for obstetrics/gynecology, gastroenterology, neurology, imaging and lab services as well as staff and patient support areas. Scope includes new electrical, generator, mechanical, plumbing, medical gas, nurse call, telecommunication, AV systems, security systems, new BMS system, fiber run to connect to main campus, etc. The project will be certified as LEED Gold. (OSHPD 3)

Dan Pawloski

QA/QC Officer



As the Quality Control Manager for XL Construction, Dan is responsible for establishing the QA/QC program for the project and assuring its implementation and assurance during the course of construction.

Years of Experience

30+ Years of Construction Experience
9 Years with XL Construction

Education

Carpenter Trade School Certification

References

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Mark Davis
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mdavis@dga-mv.com

Project Experience

Kaiser Permanente, G Street Behavioral Health • Sacramento, CA
Interior renovation of 16,000sf 5th floor tenant space to a Behavioral Health Facility. The work included the build out of Provider Offices, Exam Rooms, Reception, Group Rooms, Restrooms and other spaces required for a behavioral health facility

El Camino Hospital Behavioral Health • Mountain View, CA
A ground-up, two-story, 52,000 s.f. OSHPD facility replaced the existing Behavioral Health Building on the El Camino Campus. The new state-of-the-art facility provides 36 patient rooms and services to both inpatient and outpatient members. The project achieved LEED Gold Certification. The project included the partial demolition of the existing BHS to accommodate the footprint of the new BHS along with upgrades to the campus Central Utility Plant.

Kaiser Permanente, Roseville Medical Center Hospital • Roseville, CA
A 3-story, 250,000 s.f. moment frame hospital with 116 beds, complete operating room, critical care, intensive care, and patient rooms.

Kaiser Permanente Santa Clara Replacement Facility, Hospital Phase II • Santa Clara, CA
410,000 s.f. 327-bed hospital. Phase II includes a cafeteria, mobile Imaging dock, MRI suites, (3) catheter labs, (2) EP labs, and (2) main 4-story patient bed towers.

John Muir Health, Brentwood Medical Center • Brentwood, CA
A 58,000 s.f. tenant improvement of an ancillary care center including diagnostic suites, offices, and an ambulatory surgical center and imaging facilities. (OSHPD 3)

Kaiser Permanente Roseville Medical Office Building • Roseville, CA
A 268,000 s.f. new 4-story medical office building housing 110 providers. It includes nuclear medicine, radiology and diagnostics areas, MRI/procedure suites, clinical laboratories, adult hematology and oncology services, pediatric chemotherapy and infusion areas, OB-GYN general practice areas and procedure suites, Mammography Department, pharmacies, Occupational Medicine and Neurology.

Kaiser Permanente, Roseville Medical Office Building • Roseville, CA
A 108,000 s.f., 3-story structural steel, medical office building (MOB) connected to an adjacent hospital with space frame roof structural support pedestrian bridges. The 64-provider MOB includes OB-GYN, pharmacies, medical units, oncology, and administration space.

Paul Martin, LEED AP

TVD Specialist and Practitioner



As XL's Target Value Design Specialist and Practitioner, Paul oversees all aspects of the TVD process, including reliable cost estimating, cost management, cost studies on alternative materials and methods of construction, value engineering, prefabrication analysis, and bid packages.

Years of Experience

24 Years of Construction Experience
3 Years with XL Construction

Educator

UC Davis Extension Adjunct
Professor
Preconstruction, Estimating and TVD

References

Matt Davis

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Yumiko Westland, AIA

NCPHS
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San Francisco, CA 94109
209/735-5313
ywestland@ncphs.org

Project Experience

Kaiser Permanente, Behavior Health • Multiple Locations, CA

Repurposing of five buildings into Behavioral Health Facilities in Santa Clara, San Leandro, Fremont, Modesto, and Lathrop totally 125,000 s.f.

Sutter Health CPMC Cathedral Hill Hospital • San Francisco, CA

New construction of a 1-million s.f. OSHP hospital. This \$1.3 billion, new Sutter Health acute care hospital is 14-stories. The hospital houses both an Acute Care Center and a Women's and Children's Center that includes 26 Operating rooms including Hybrid Operating rooms. The hospital preconstruction process used Target Value Design (TVD) methodologies and BIM technology. **LEED-certified** Paul's role on this project was Senior Estimator and TVD Manager through final bid packages and strategy buyout.

Adventist Health - Hybrid OR & Cath Lab Addition • St. Helena, CA

A 10,000 s.f. demolition and renovation of new Hybrid OR and Cath Lab on the 2nd floor of a 5-story hospital. New AHU and ductwork on the exterior of the building feeding the 2nd floor.

Kaiser South Sacramento • Sacramento, CA

A five-story 135,00 s.f. hospital that included 85 beds, ICU, Med Surge, and Cath Labs. (OSHPD) Paul's role on this project was Senior Estimator

Kaiser South Modesto Template Hospital • Modesto, CA

A five-story 138,000 s.f., 112-bed hospital including diagnostic services. Paul's role on this project was Senior Estimator

Kaiser Santa Rosa Hospital Bed Tower Addition • Santa Rosa, CA

Kaiser Santa Rosa Hospital North Wing Expansion project is a six-story, 146,400 square foot building addition consisting of 34 departments including a new emergency department, imaging, critical care unit, and three patient bed floors. Paul's role on this project was Senior Estimator

Courtney Lorenz, LEED AP, BD+C

Sustainability Manager



As the Sustainability Manager, Courtney is involved early in high performing project goal from project award through construction. She aims to achieve the best balance of economic, environmental and social solutions for projects during design, construction, and occupancy phases. Courtney has experience across multiple green building systems.

Years of Experience

13 Years of Construction Experience
3 Years with XL Construction

Education

B.S. Environmental Management
from Indiana University

M.S. Environmental Economics
and Policy
Nichols School of the Environment
Duke University

References

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Project Experience

El Camino Behavioral Health Replacement Facility • Mountain View, CA

The replacement of an existing Behavioral Health Services wing with a new two-story, 52,000 s.f. building with 36 new inpatient/outpatient beds. **LEED Gold Certification.**

Sonoma Academy • Sonoma, CA

The project consists of three new buildings on the campus. The new facilities include The Grange, a student center, community gathering area, and food service center for farm to table education; The Studios, a 450 seat theater with additional studios for music instruction, maker space and other creative making and learning; and a Maintenance/Transportation Building. Targeting **LEED Platinum Certification & Net Zero.**

University of North Carolina Cancer Hospital • Chapel Hill, NC

A new 320,000 s.f. cancer care hospital and physician's office building that contains outpatient clinics, 50 inpatient hospital beds, a laboratory, a radiology center with three linear accelerators and a cyberknife, a pharmacy, ancillary services, chemotherapy infusion center, radiation oncology center, education facilities, patient support services, and a variety of other services and programs. In addition, transitional research spaces dispersed throughout the facility will help convert discoveries made in the laboratory to use in patient treatment. A pedestrian bridge will connect the new buildings, parking decks and hospitals to one another. **This is a Pilot Project for a program called the Green Guide for Healthcare.**

Riverside Community Hospital • Riverside, CA

The renovation and expansion for Riverside Community Hospital. The project includes a new seven-story, 292,000 s.f. tower that will feature patient beds along with essential services including dietary, pharmacy, lab, materials management and sterilization. The new addition will add 12 intensive care beds and 60 medical/surgical beds to the facility. The new patient tower will also include two shelled floors for future expansion. The renovation portion of the project consists of 30,000 s.f. in the existing facility, including a new MRI suite and a complete multi-phased renovation of the existing imaging department. Additional renovation work includes the infill of existing atrium spaces in one of the facility's buildings to create space for a future operating room expansion/renovation. **LEED Gold Certification.**

Daniel Jason (DJ) Phipps

Sr. Virtual Design and Construction Manager



As a senior virtual design and construction manager (BIM) at XL Construction, DJ will strive to incorporate VDC technologies in all aspects of pre-design to documentation to construction.

Years of Experience

17 Years of Construction Experience
2 Years with XL Construction

Education

B.S. Construction Management
ITT Technical Institute - 2011

References

Martin Sharpless

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Jesse Cristerna

BIM / Detailing Department Manager
Therma Corp
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Project Experience

BMS BDC Phase 4 Expansion • Redwood City, CA

Tenant improvement in existing 61,000 s.f. building. Scope includes new elevators, auditorium, lab, office space, and full seismic upgrade for new roof equipment.

AstraZeneca CA Consolidation • South San Francisco, CA

Tenant improvements in existing 80,000 new shell at Oyster Point. Scope includes new labs and office space for AstraZeneca West Coast consolidation.

Adventist Health - Hybrid OR & Cath Lab Addition • St. Helena, CA

A 10,000 s.f. demolition and renovation of new Hybrid OR and Cath Lab on the 2nd floor of a 5-story hospital. New AHU and ductwork on the exterior of the building feeding the 2nd floor.

El Camino Behavioral Health Replacement Facility • Mountain View, CA

The replacement of an existing Behavioral Health Services wing with a new two-story, 52,000 s.f. building with 36 new inpatient/outpatient beds.

Houston Methodist - The Woodlands Hospital • Houston, TX

A \$328 million dollar project which includes a new 6-story patient tower, new Central Utility Plant and new Medical Office Building.



5 RELEVANT PROJECT EXPERIENCE

05 Relevant Project Experience

Project Name, City	Prior 10 Years	Local Bay Area Project	Excess of \$20 Million	OSHDP 3	CM-at-Risk	LEED / High Efficiency / Net Zero	Administrative/MOB	Urban Environment
John Muir MOB, Concord, CA	●	●	●		●		●	
UC Davis Midtown Clinic, Sacramento, CA	●		●	●	●	●	●	●
Kaiser MOB, San Ramon, CA	●	●	●	●	●	●	●	●
Bayer Healthcare Quality Control Lab, Berkeley, CA	●	●	●		●	●	●	
Gilead NRB, Foster City, CA	●	●	●		●		●	

John Muir Medical Office Building & Core Lab

Concord, CA



PROJECT RELEVANCE

Prior 10 Years	✓
Local Bay Area Project	✓
Excess of \$20 Million	✓
OSHPD 3	
CM-at-Risk	✓
LEED/High Efficiency/Net Zero	
Administrative/MOB	✓
Urban Environment	



A new two-story 57,000 s.f. structural steel frame and concrete tilt-up structure with 3.8 acres of site development. The complete interior build-out featured general office space and 30,000 s.f. of medical testing labs, including 10,000 s.f. of lab space housing automated chemistry and hematology lines. The lab processes more than seven million specimens each year.

**This project was completed in
only 10 months!**

Major Subcontractors

- Aberle Scrodin Concrete
- Westco Steel
- Western Allied Mechanical (M/P)
- AMS Electric
- ISEC Lab Casework
- Bayside Drywall

Completion Date

Aug 2009

Final Construction Cost

\$33 Million (in 2019 dollars)

Contracted Cost

\$32 Million (in 2019 dollars)

Cost per SF

\$580 (in 2019 dollars)

Total Area

57,000 s.f.

Delivery Method

Design-Build MEP

Type of Construction

New Construction

Owner Contact

Panos Lampsas
Sutter Health
925/973-0424

Architect Contact

Hawley Peterson & Snyder
Charles Wagner
650/968-2944

XL Staff

PM - Kevin Ng
Superintendent - Michael Trejo
Scheduler - William Huang
QA/QC Officer - Kyle Angelini

Major Subcontractors

See below

Change Order %

3% (Including Owner Electives)

Original Scheduled Date of Completion

Aug 2009

Number of Stop Notices

Zero

LEED / Awards

None

UC Davis Health Systems Medical Group Midtown Clinic

Sacramento, CA



PROJECT RELEVANCE

Prior 10 Years	✓
Local Bay Area Project	
Excess of \$20 Million	✓
OSHPD 3	✓
CM-at-Risk	✓
LEED/High Efficiency/Net Zero	✓
Administrative/MOB	✓
Urban Environment	✓



The three story, 100,000 s.f. UC Davis Medical Group Midtown Clinic renovation has achieved LEED Gold Certification and now conveniently houses multiple clinics under one roof. The new clinic serves primary and specialty care departments which include internal medicine, pediatrics, neurology, gastroenterology, a GI specialty procedure suite, sleep lab, imaging and lab departments. Throughout the Design-Build project, the XL team worked closely with UC Davis and Lionakis to ensure the design met the end-users needs. (OSHPD-3)

This project was LEED Gold Certified.

Completion Date

May 2016

Final Construction Cost

\$27 Million (in 2019 dollars)

Contracted Cost

\$24 Million

Cost per SF

\$270 (in 2019 dollars)

Total Area

100,000 s.f.

Delivery Method

Design-Build MEP

Type of Construction

Renovation

Owner Contact

Dom Signoretta
972/566-3493

Architect Contact

Lionakis
Donald McAllister
916/558-1900

XL Staff

PM - Nicolas Cardin
Superintendent - Dan Pawloski
Scheduler - William Huang
QA/QC Officer - Kyle Angelini

Major Subcontractors

See below

Change Order %

12% (Owner Electives)

Original Scheduled Date of Completion

Dec 2015

Number of Stop Notices

Zero

LEED / Awards

LEED Gold

Major Subcontractors

- ACCO
- Air Systems Of Sacramento
- Schetter Electric
- Otis Elevator
- California Drywall
- Burnett & Sons
- Royal Glass
- Kings Roofing
- Capitol Iron Works
- John Jackson Masonry

Kaiser Permanente Medical Office Building

San Ramon, CA



PROJECT RELEVANCE

Prior 10 Years	✓
Local Bay Area Project	✓
Excess of \$20 Million	✓
OSHPD 3	✓
CM-at-Risk	✓
LEED/High Efficiency/Net Zero	✓
Administrative/MOB	✓
Urban Environment	✓



The project included preconstruction and construction services for the renovation of an existing three-story 68,461 s.f. office building into a LEED Gold Medical Office Building. This was the first LEED MOB in Northern California for Kaiser Permanente.

Department build-outs included Family Health Services, Dermatology, Obstetrics/Gynecology, Sports Medicine and Physical Therapy, a pharmacy and lab/blood draw and imaging suites.

**This was the first LEED MOB
in Northern California for
Kaiser Permanente.**

Major Subcontractors

- ACCO
- Prime Electric
- Cal Drywall

Completion Date

Oct 2013

Final Construction Cost

\$25.5 Million (in 2019 dollars)

Contracted Cost

\$23.3 Million (in 2019 dollars)

Cost per SF

\$365 (in 2019 dollars)

Total Area

68,461 s.f.

Delivery Method

Design Assist MEP

Type of Construction

Renovation

Owner Contact

Michael Lane
510/847 6503

Architect Contact

HGA Architects & Engineers
Kevin Day
415/814-6910

XL Staff

PM - Jason Fox
Superintendent - John Eberhard
Scheduler - William Huang
QA/QC Officer - Kyle Angelini

Major Subcontractors

See below

Change Order %

9.3%

Original Scheduled Date of Completion

Oct 2013

Number of Stop Notices

Zero

LEED / Awards

LEED Gold

Bayer Healthcare LLC

Bayer Quality Control Lab Phase 2

Berkeley, CA



PROJECT RELEVANCE

Prior 10 Years	✓
Local Bay Area Project	✓
Excess of \$20 Million	✓
OSHPD 3	
CM-at-Risk	✓
LEED/High Efficiency/Net Zero	✓
Administrative/MOB	✓
Urban Environment	



Construction of a new three-story 80,000 s.f. building on the Bayer Berkeley Campus. The building is fed primarily by existing campus utilities, requiring tie-ins. The building houses laboratory, lab support, building support, office, and mechanical spaces to provide a quality control laboratory facility that is compliant with current and future regulations and that has sufficient capacity to meet Bayer's anticipated production demands.

Completion Date

Nov 2016

Final Construction Cost

\$65 Million

Contracted Cost

\$65 Million

Cost per SF

\$750

Total Area

80,000 s.f.

Delivery Method

GMP
Design-Build Elements

Type of Construction

New Construction

Owner Contact

David Wood
510/705-5813

Architect Contact

CRB
Trevor Auer
408/367-2016

XL Staff

PM -Kevin Ng
Superintendent - Tim Merrell
Scheduler - William Huang
QA/QC Officer - Kyle Angelini

Major Subcontractors

See below

Change Order %

1%

Original Scheduled Date of Completion

June 2016

Number of Stop Notices

Zero

LEED / Awards

None

Major Subcontractors

- Western Allied
- Murray Company
- Cupertino Electric
- B.T. Mancini Co.
- Bradley Concrete
- Daley's Drywall & Taping, Inc.
- Gayle
- Siemens Industry
- Superior Automatic
- Western Roofing
- Preston Pipeline

Confidential Client NRB1 & Annex Building

Foster City, CA

PROJECT RELEVANCE

Prior 10 Years	✓
Local Bay Area Project	✓
Excess of \$20 Million	✓
OSHPD 3	
CM-at-Risk	✓
LEED/High Efficiency/Net Zero	
Administrative/MOB	✓
Urban Environment	



Ground-up 60,000 s.f. chemistry/biology lab building with office space, and an additional annex building with a 150-seat training facility. The new building shell and TI had a steel structure on a concrete foundation with grouted piles and a GFRC, metal panel and glass skin system with a foam roof. Exterior equipment yard was made of concrete and CMU walls. Project also included a new parking lot, site utilities, and landscaping.

The auditorium included sound attenuating walls, sound attenuating HVAC system, automated/controlled lighting system, AV system with control room, fixed theater seating, lobby and custom millwork walls.

Major Subcontractors

- Gayle Manufacturing
- BT Mancini
- Silicon Valley Mechanical
- Bayside Drywall

Completion Date

July 2009

Final Construction Cost

\$42 Million (in 2019 dollars)

Contracted Cost

\$42 Million (in 2019 dollars)

Cost per SF

\$700 (in 2019 dollars)

Total Area

60,000 s.f.

Delivery Method

Design-Assist MEP

Type of Construction

New Construction

Owner Contact

Chat Kwan
650/574-3000

Architect Contact

Perkins + Will
Steven Williams
415/398-1600

XL Staff

PM -Kevin Ng
Superintendent - Dave Beck
Scheduler - William Huang
QA/QC Officer - Kyle Angelini

Major Subcontractors

See below

Change Order %

2%

Original Scheduled Date of Completion

July 2009

Number of Stop Notices

Zero

LEED / Awards

None



6

PROJECT APPROACH

06 Project Approach

A. TEAM ORGANIZATION




ALAN LAURLUND
Senior Vice President
XL Construction



Craig Jamison
Project Executive
916/300-8288
cjamison@xlconstruction.com

SMITHGROUP



Randy Eissner
General Superintendent



JD Ahearn
Senior Project Manager



Lou Pietrelli
Sr. MEP Coordinator /
Commissioning
Superintendent



Jeremy Edwards
Project Engineer



Rob Wilbur
Project Superintendent

Support Staff

Mike Popp, CSHM, CRIS, CLCS, CHST
Safety Director

Courtney Lorenz, LEED AP, BD+C
Sustainability Manager

DJ Phipps
VDC Manager

Andreas Phelps, PHD, LEED AP
Lean Facilitator

William Huang,
Scheduler

Dan Pawloski,
QA/QC Officer

Paul Martin,
TVD Specialist/Practitioner

Our proposed team are *current* XL employees and will be dedicated to the South San Francisco Campus Project from *Preconstruction through Construction*. We are committed to the success of the project and will give the hours and energy it takes to achieve the project goals.

B. MANAGEMENT PHILOSOPHY leads to

An Innovative, Collaborative, and Lean Approach: To achieve the highest value and the most efficient preconstruction execution for the County of San Mateo, we will instill a collaborative and whole-team approach. Using tools and processes like alignment sessions, Target Value Design (TVD), and pull scheduling to engage every stakeholder. We will support these tools and processes by promoting the right behaviors, an often overlooked element in the efficacy of these tools. These include mutual respect, inclusiveness, flexibility, transparency, and openness. To Achieve this we:

...UNDERSTAND all the project goals and objectives. We will gain a detailed understanding of all the current site conditions, what it will take to achieve the project schedule, and identify all the potential hurdles as early as possible. This will help us create a detailed execution...

...PLAN that addresses these challenges and sets out a plan for how to tackle them. This planning will allow us to develop reliable budgets, phasing, logistics and achievable schedules early on in the project. We know that in order to implement this plan we will...

...COLLABORATE between all the team members clearly and timely so that we emerge from preconstruction with a design and model that requires zero re-work, a budget that exceeds expectations, and a team that is energized because they know their thoughts and ideas are appreciated. All of this will allow us to...

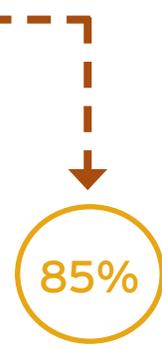
...EXECUTE a successful project. This means safely delivering a high quality South San Francisco Campus Project on time and within budget, and making sure the whole team enjoys the process! Our team understands how important it is to...

...FINISH the project just as strong as we start it, and we are committed to pushing this project all the way through the finish line. Finishing strong begins with strong planning in preconstruction. This process is a proven approach to working with clients such as South San Francisco Campus Project. We are looking forward to working with you and helping you achieve your goals.

Change/Dispute Resolution. At XL Construction we believe that aligning the project team's values will ensure that the best interests of the Owner and Project are served. This is achieved through the Team Alignment process that we employ and which has resulted in reduced conflicts.

Our philosophy for change/dispute resolution is to be proactive in our efforts in preconstruction by working closely with the project team to develop a constructible set of documents, a reliable schedule, and a very thorough understanding of the project. This will enable us to write very detailed Instruction to Bidders (ITBs) that will mitigate the risk of changes on the project. Through implementing the Target Value Design process from the onset of the design, ambiguity in scopes and design elements that are not complete are identified and costs allotted. Through this, the design is driven to be in sync with the costs and project costs are predictable and reliable.

XL Construction



XL'S WORK FROM REPEAT CLIENTS



Some examples of being proactive in our approach include:

- BIM was used on the El Camino Hospital Behavioral Health project to coordinate new utilities. This was done for both below grade utilities serving the new building and new utilities within the structure. For the existing utilities the process included potholing to locate the existing utilities, from which we were able to develop an as-built model of the below grade utilities. This allowed the project team to model and prefabricate the new utilities before ever starting excavation, thus reducing the duration for excavation and mitigating potential clashes with existing utilities. For the new utilities the team modeled all utilities, including all framing, to mitigate against clashes. This approach reduced the project teams risk of costly delays, re-design, and rework that would have negatively affected the success of the project.
- Another example of the El Camino Hospital Behavioral Health Project Team being proactive in the best interest of the owner took place during buyout and development of the GMP for El Camino. Our GMP included an allowance to use a vapor emission and alkalinity control system that differed from the product specified. The system we included was more expensive, which was a reputable product with a successful track record. The owner challenged us on this approach, but after several meetings with the specified manufacturer, it became clear to the owner that the product specified would not meet their expectations. The end result is that product we included in our GMP was accepted by the Design Team and the Owner and although more expensive, it was the right decision that will provide the owner and the rest of the team a high level of confidence that the flooring installation will meet their expectations.

C. STRATEGIES FOR TRADE COORDINATION

XL's strategy for trade coordination begins with a thorough review of the project scope and determining schedule critical systems and components. Where applicable, XL will bring on these select Trade Contractors early to provide design assist, budget evaluation, constructability, value analysis and BIM Coordination. Once developed, the BIM models will be used to streamline the submittal and coordination process as well as provide the basis for prefabrication shop drawings. The value to the project in bringing selected trade partners in during the design phase to allow the coordination of the trades at an earlier point of the project time-line, and promoting efficiency in the overall process. In past projects this early collaboration between the Trade Contractors and the Design Team has resulted in the reduction of design coordination issues in the construction phase of the project. In a recent project, the Mechanical, electrical and Plumbing Trade Contractors were brought on board and worked closely with the Design team to establish efficient routing of systems, alternate product selection and cost alternatives. During construction, the instances of RFI's were significantly reduced and prior to construction budget targets were met. With the concerns regarding the site for the South San Francisco Campus, we recommend the following trade contractors be brought in early:

- | | | |
|------------------|-----------------|--------------|
| • Grading | • Structural | • Elevators |
| • Demolition | • Electrical | • Mechanical |
| • Site Utilities | • Exterior Skin | |

In addition to the above we would recommend HVAC, Controls Systems, Plumbing and Skin System trade contractors be brought in as well.

D. INTERFACE AND COORDINATION WITH THE COUNTY

XL Construction has a long history of collaborating with owners, user groups, designers and AHJ's to transform concepts into reality. We are true builders and this is evident in so many of the details on our projects. We love working side by side with the design team to develop new construction methods and installation techniques. Below are the tools, processes and behaviors XL uses to approach projects. We find challenging work inspiring and are excited to bring this level of expertise and passion to the South San Francisco Campus Project.

Understanding the County's priorities for the functionality of the project is paramount for XL to be a better partner during the design phase. To facilitate this transfer of information of priorities and values, XL conducts a 4-8 hour alignment session. This alignment session establishes project goals and expectations, reviews the team's strengths, and create strategies on how to successfully communicate and maximize the strengths identified. The goal and subsequent result of this session is to create a high performing team between the South San Francisco Campus Project, Design Team and XL.

Example of Astra Zeneca Strategy and Alignment Session Summary - March 28, 2017



Astra Zeneca Strategy & Alignment Session - 28 March 2017

Project Strategic Values

Safety is a Must

- Optimize safety in design, constructability, and operations (e.g. no ladder use)
- Integration with Core & Shell team on safety program, site security, and expectations
- Use of leading indicators and preventative measures among the GC and Trades.
- Capture, share, and scale best practices
- *Potential Strategies: Design for Safety considerations, advanced site logistics planning and communication, optimize prefabrication, daily huddles, use of BIM 360 to capture, share, and analyze data in real time.*

Schedule Certainty

- Confidence to management and end users
- Key dates (data room in September and dust free in October for AV & equipment move-in)
- Tight coordination with Core & Shell specifically regarding elevators, access for prefab modules, safety, and site security.
- *Potential Strategies: Last Planner System, Decouple activities where possible, Proactively manage the interface with the core & shell team*

Solid Numbers/Smart Buyout

- Ample stated capital cost should be sufficient.
- Open book transparency with numbers. Any underspend needs to be known in a timely manner.
- Proactive problem identification and options exploration that considers quality, cost, schedule, and means & methods. Also consider lifecycle cost when possible.
- *Potential Strategies: Detailed communication of schedule/flow/manpower expectations, comprehensive design documentation, collaborative planning and proactive management of expectations with trades*

Comprehensive Design Input

- Optimize safety in design, constructability, and operations (e.g. no ladder use)
- Design spaces that support collaboration and enable AZ to attract and retain the best talent
- Responsible construction practices- 95% waste diversion, "act like you own it"
- Productive and healthy indoor environments - IEQ, variety of work spaces, science on display
- *Potential Strategies: Develop a narrative to go over with trades as part of onboarding, brainstorm opportunities to optimize prefab and safety considerations in design, robust waste management on site.*

Major Project Risks

Aggressive Schedule

- *Potential Precon Strategies: early decisions and procurement of key systems, materials, etc., collaborative review of design as it is being developed (not after), robust buyout strategy and tight coordination with design development priorities*
- *Potential Construction Strategies: Last Planner for trade input/ buy-in/accountability to schedule, decoupling activities so that things can happen earlier (even if not required to).*

Core & Shell Contractor and Existing Systems Quality

- *Potential Strategies: Laser scanning, early trade involvement, early AZ review of spaces/systems prior to TI starting, involvement of Core & Shell team in Last Planner sessions.*

Team Behavioral Strengths

Team Profile

- Achiever
- Adaptability
- Strategic
- Responsibility
- Arranger

Motivated by getting things done. Best with short-term, tangible, actionable tasks.

Like to go with the flow when possible, trust everyone's collective ability to respond competently to issues in the moment.

Need to understand the big picture. Can quickly develop rough strategies to achieve end goals.

High sense of responsibility for success. May need to counter micromangement with clear conditions of satisfaction and feedback cycles.

Enjoy looking at options and evaluating things from a number of different perspectives. This is most constructive if done early in the process.

Potential Strategies

- *Last Planner System - The system of milestone planning, phase planning, and weekly work planning will allow Achievers to have their lists of tangible actions, also provide clear accountability for those with responsibility, ensure that all Strategics are on the same page, and also build in opportunities to adjust (at the phase planning level) while still holding to overall milestones.*
- *Consistent & holistic decisions making - Use of A3s for options analysis having some consistent universal decision criteria and collaborative reviews will ensure that those with Adaptability, Strategic, and Arranger are all focused on the same goals, transparency in how decisions were made, and a capture of the collective memory around an issue.*

Strategic "Musts"

- Robust Last Planner implementation
- Short-interval, focused, and collaborative design reviews as design progresses (not just after deliverables)
- Detailed and robust procurement plan (well integrated with design effort)
- Proactive and comprehensive safety strategy that focused on designing out risk and a culture of awareness, action, and continuous improvement.

Communicating key decisions, schedule and project issues clearly and expeditiously are vital to the success of the South San Francisco Campus Project. Some of the tools that XL will utilize are:

1. A3's will be used to clearly understand the benefits of cost and model analysis.
2. The P6 CPM schedule along with the weekly work plan summaries will keep all team members abreast of the progress of the project.
3. Weekly team meetings will be employed to review and resolve project issues expeditiously.
4. Value Opportunity Tracking Log - using % probability factors to prioritize collaborative ideas and clearly identifying the reliable costs and organizing decision process.

Sample A3 Analysis



XL Construction - A3 Report
DIRTT Walls vs. Glazing
DIRTT Walls vs. Metal Stud/Drywall

1	Baseline	<p>The current budget has the interior office fronts constructed with a traditional glazing system and the surrounding walls built with metal studs and drywall. Ford wishes to compare this system to a DIRTT system on glazed offices fronts (as shown in permit drawings) as well as an extended scope that replaces metal stud/drywall walls on interior office spaces.</p>
2	Analysis	<p>At glazed walls and GWB partitions, scenarios to analyze: 1) Glass & glazing office front construction vs. DIRTT wall office fronts 2) Metal stud framing office walls vs. DIRTT walls at office walls w/o glass</p> <ul style="list-style-type: none"> • XL to get Ford/HED with acoustic ratings of DIRTT office front systems from Scenario 1

RELEVANT INFORMATION
 WHY IS THIS A PROBLEM? WHAT HAPPENS IF UNSOLVED?
 Ford RIC favors the look of the DIRTT system and wants to do a cost analysis. Timing of this decision is crucial to maintaining current project schedule.

WHAT IS ROOT CAUSE?
 N/A

MUST CRITERIA The solution must have the characteristics below (no variance can be tolerated):
 a. Meet code
 b. Not increase project cost
 c. Not extend the schedule

SHOULD CRITERIA The solution should have the characteristics below (some latitude can be tolerated):
 a.

OTHER FACTS, ASSUMPTIONS AND UNKNOWN:
 a. Office front option already priced by OneWorkplace.
 b. In Scenario 1 there will be drywall headers regardless of which system is selected.

Author: Vierra	Participants: Ford/XL/HED	Reviewed: PM Est PX
A3 No.: 00xxx	Doc Date: 12/8/16	File: XLC-A3-FORD - DIRTT WALLS Final 12.08.16.docx

Scenario 1				Scenario 2			
DIRTT office fronts		Glass & glazing office fronts		DIRTT office wall		Metal Stud/Drywall office walls	
3	Advantages	ADVANTAGES <ul style="list-style-type: none"> • Pre-manufactured product provides good quality control • Less expensive than glass & glazing installation • Tax benefit as cost may be depreciable as furniture purchase 	ADVANTAGES <ul style="list-style-type: none"> • Slightly better acoustic performance DISADVANTAGES <ul style="list-style-type: none"> • Glazing contractors very busy. Manpower issues in this trade • Higher cost. • Architectural re-design time & cost 	ADVANTAGES <ul style="list-style-type: none"> • Pre-manufactured product provides good quality control • Provides modern, open design aesthetic. • Most flexibility for re-orienting rooms in the future. • Tax benefit as cost may be depreciable as furniture purchase • Architectural re-design time & cost 	ADVANTAGES <ul style="list-style-type: none"> • Less expensive than DIRTT walls DISADVANTAGES <ul style="list-style-type: none"> • Not the same aesthetic as DIRTT • Less flexibility for reorienting rooms 	4	Proposal
		DISADVANTAGES <ul style="list-style-type: none"> • Slightly inferior acoustic performance 	SCHEDULE <ul style="list-style-type: none"> • Frames 2-3 weeks • Glass 1-2 weeks after installation of frames and field measure. • 4-8 weeks for storefront doors 	DISADVANTAGES <ul style="list-style-type: none"> • More expensive than metal stud framing & drywall • 15' wall heights add to lead time 	SCHEDULE <ul style="list-style-type: none"> • Material order placed with balance of project. No schedule impact 		
		SCHEDULE <ul style="list-style-type: none"> • 3-4 weeks from approved shop drawings for entire system. 	DIRECT CONSTRUCTION COST: <ul style="list-style-type: none"> • Includes window film <p style="text-align: center;">\$1.2M</p>	SCHEDULE <ul style="list-style-type: none"> • 5-7 weeks from approved shop drawings for entire system. 	DIRECT CONSTRUCTION COST: <ul style="list-style-type: none"> • Metal stud framing • Drywall • Paint/Idea Paint • Resilient base • Electrical <p style="text-align: center;">\$1.1M</p>		
		DIRECT CONSTRUCTION COST: <ul style="list-style-type: none"> • Includes window film <p style="text-align: center;">\$1.8M</p>	SCHEDULE <ul style="list-style-type: none"> • 6-7 weeks from approved shop drawings for entire system. 	DIRECT CONSTRUCTION COST: <p style="text-align: center;">\$3.3M</p>			

Scenario 1: Recommend using DIRTT system on the glazed office fronts due to significant cost savings, quality and ability to maintain schedule.

Scenario 2: Recommend using traditional metal stud framing and drywall at in lieu of DIRTT at non-office front walls due to cost savings and easy integration into construction schedule.

Ford has accepted the recommendations noted above. See 2 Analysis for follow up items

APPROVAL SIGNATURES (Please initial and date) Change "First Last" to actual name and remove this text			
First Last _____	First Last _____	First Last _____	First Last _____
First Last _____	First Last _____	First Last _____	First Last _____

Sample Value Opportunity Log



XL		Risk and Opportunity Log					
CONSTRUCTION™							
Item #	Column1	Date Entered	RISK OPPORTUNITY -- Description	Probability	ROM Cost	Assessed Risk / Opportunity	Final Amount Approved (transferred)
T - Transferred X - Closed O - Open							
1	T	6/8/2016	Water heater selection refined	100%	\$ (7,000)	\$ (7,000)	\$ (7,000)
2	T	6/8/2016	Re-use exterior VAV boxes	100%	\$ (15,000)	\$ (15,000)	\$ (15,000)
3	T	6/12/2016	Remove 2 VAV zones (35 vs. 33). From base cost (only 33 shown)	100%	\$ (25,000)	\$ (25,000)	\$ (25,000)
4	O	6/12/2016	Tie bathroom exhaust in to combo EF at roof.	30%	\$ (10,000)	\$ (3,000)	\$ (3,000)
5	X	6/13/2016	Re-use high side duct work (need field verify)	0%	\$ (10,000)	\$ -	\$ -
6	T	6/15/2016	JCI controls, adjustment from original PLUG	100%	\$ (10,000)	\$ (10,000)	\$ (10,000)
7	X	6/15/2016	Point of use heaters in lieu of upsizing water heater	0%	\$ (5,000)	\$ -	\$ -
8	T	6/18/2016	Telecom deduct based on further ICE document review	100%	\$ (30,000)	\$ (30,000)	\$ (30,000)
9	T	6/8/2016	Security deduct (based on updated documents from KP)	100%	\$ (15,000)	\$ (15,000)	\$ (15,000)
10	T	6/18/2016	Light fixture (\$200/fixture vs. \$400/fixture)	100%	\$ (75,000)	\$ (75,000)	\$ (75,000)
11	O	6/20/2016	SMUD rebate	50%	\$ (50,000)	\$ (25,000)	\$ (25,000)
12	T	6/22/2016	Group shell space (modified plan) with leaving shell spaces in their designed location but placing POC's for future and eliminate interior walls. Open studs, basic build.	100%	\$ (300,000)	\$ (300,000)	\$ (300,000)
13	T	6/28/2016	Surface mounted door drops	100%	\$ (10,000)	\$ (10,000)	\$ (10,000)

E. CONSTRUCTION PLANNING, BIDDING STRATEGIES AND PERFORMANCE

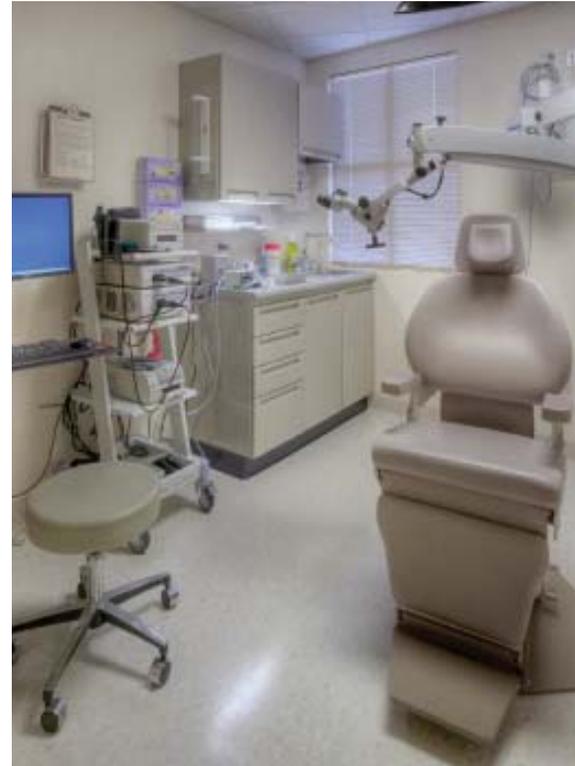
Precon

Our collective goal through implementing the Target Value Design (TVD) Process, is to organize and manage the preconstruction approach. XL's TVD process will ensure that your project is completed on time and within budget. The process is repeatable, reliable, and extremely successful at driving innovation and the design towards the client's cost model.

Reviewing design documents: XL will study existing conditions, as-builts, facility sensitivities along with programing reports for the South San Francisco Campus Project. This provides the opportunity to identify important project specific knowledge that is relevant for design and cost, and will enhance the reliability of our cost management. We will generate an early project baseline estimate using our extensive knowledge of current costs. This estimate will ensure that costs are in sync with design. All iterations of design movements are compared to the initial baseline estimate.

Some of the major tools that we will use in the preconstruction process encompassing not only project costs through construction but also relevant life cycle costs are:

1. A3's will be used for all cost studies. The A3 format will include relevant study types such as model information and analysis, cost comparisons, energy model and cost drivers depending on the most reliable study required to provide an accurate forecast. (See example on prior page.)
2. The Value Opportunity Log (VOL) will be the master organizing tool for all value added and cycle costs. (See example of prior page.) The team will utilize the VOL to ensure the correct study approach is being performed, who is leading the study and identifies time-lines for task completions.
3. The Project Master Scope Matrix will be utilized to identify efficient scope delineations including items (e.g. FF&E) the County would like in the Master TVD Estimate, as well as to track inter relational scope direction thereby eliminating duplications or omissions.
4. Early involvement of selected Trade Contractors provides key input in developing project schedules that meet the needs of the Owner as well as reducing claims.
5. A thorough review of site conditions, user needs and construction sequencing will be developed. Working closely with the CHS, PDU, design team, and user groups XL will develop a complete understanding of the project's needs—needs that cannot always clearly illustrated on the project documents. This information will be incorporated into Project Phasing Plans, detailed Bid Instructions and the Master Project Schedule which will be issued to all Trade Partners to provide for an inclusive bid responses. This effort results in accurate pricing, minimized project disruptions and increased project satisfaction.



"XL Construction is extraordinarily well organized, with clear processes and communication. All team members have such positive attitudes, answering any challenges with "We can do that!" and then making it happen. It gives us great confidence in the success of our projects to have an organization working with us that we can trust to get it done right."

- Jeff Teel

Palo Alto Medical Foundation

Construction

XL's Construction services are a continuation of our preconstruction services. The key team members are in place and knowledgeable of the project from the preconstruction effort through construction, which expedites the overall project schedule process. XL's team will use all the tools that are available including BIM to model how the work will be constructed, create digital mock-ups and fully develop site logistics plans.

In working with the design team, South San Francisco Campus Project and PDU, XL will develop a clear understanding of the needs of the facility during the active construction schedule. With our considerable history of working on occupied facilities and campuses, we are adept to the proper planning and execution of work in and around occupied facilities. XL understands that accurate and timely communication, planning and executions is the key to success in avoiding disruptions to ongoing operations.

XL employs an effective claim avoidance strategy on all our projects and it starts the moment we are engaged on the project. Our team will develop a thorough understanding of the project and working closely with South San Francisco Campus Project, PDU, design team and the respective AHJ representatives to develop detailed work plans, phasing diagrams and a detailed project schedule. These documents along with the detailed Instructions to Bidders will form the basis of the Bid Packages issued to the Trade Contractors. Project uncertainty is eliminated by clearly communicating project expectations to the bidders. XL's post bid review process will ensure that the prospective Trade Contractors understand and include these scopes, clarifications and documents in their price. Finally, utilizing the pull scheduling process allows XL to execute the plan collaboratively with the trade contractors.

At XL Construction, we will work diligently to ensure that trade contractors are aware of the South San Francisco Campus Project and will be active in its pursuit. XL's standing in the subcontractor community as well as our active solicitation will ensure that there are ample subcontractors in the bidding process. A more detailed outline of this process is:

Step 1: We will use our SmartBidNet database of over 600+ trade contractors and compile a list of qualified bidders.

Step 2: Survey by email and telephone our regional, quality, experienced subcontractors and suppliers.

Step 3: Our public bidding advertisements in regional focus and trade papers will include a request for subcontractors and suppliers.

Step 4: If Step 3 reveals subcontractors and suppliers with which XL is not familiar we will host a special pre-bid meeting to ensure the bidders understand the site logistics, schedule, safety requirements and scope of the project, as well as review XL's prequalification process and project performance expectations.

To prevent impacts to the ongoing operations of the Cordilleras, XL Construction will employ the following best practices:

1. Development and implement detailed phasing plans
2. Utility disruption protocols
3. Noise abatement strategies as required
4. Site security to ensure the integrity of ongoing operations
5. Engage existing clients/staff on processes and operation, and keep them informed on project phasing



F. BUDGET MANAGEMENT AND COST CONTROL

Cost Per Square Foot

Our Cost per Square Foot for comparable facilities is listed on the Project Profile Sheets located in Tab 5.

Cost Estimate Details

Project Name, City	<i>Final Cost Estimate</i>	<i>Bid Amount</i>	<i>Difference</i>
John Muir MOB, Concord, CA	\$33 Million *	\$32 Million *	3%
UC Davis Midtown Clinic, Sacramento, CA	\$27 Million *	\$24 Million *	12%
Kaiser MOB, San Ramon, CA	\$25.5 Million *	\$23.3 Million *	9.3%
Bayer Healthcare Quality Control Lab, Berkeley, CA	\$65 Million	\$65 Million	1%
Gilead NRB, Foster City, CA	\$42 Million *	\$42 Million *	2%

* Values provided in 2019 dollars

The projects referenced were structured that the fee was established at the time of the GMP. Variations between the Final Cost Estimate and Bid (GMP) Amount resulted in movement, either up or down, of the project fee. In the case of El Camino Hospital Behavioral Health and Bayer Healthcare Quality Control Lab the variance between the estimate and the bid was the result of additional scope that was added to the project at the request of the respective clients.

Cost Estimating Methods

XL believes that the Target Value Design (TVD) approach to developing a cost model for this project will provide cost certainty and is a proven method for effective cost delivery. XL will provide team decision makers with relevant, reliable, and timely information needed to aid design and predict reliable costs and schedule.

Early in our preconstruction process, we produce a project Master Target Value Design (TVD) Estimate. The Master TVD Estimate always maintains the most current state and reflects decisions made through the collaborative preconstruction process. This keeps the owner and the pre-con team informed of “true north” from day one. The Master TVD estimate is the tool that maintains certainty in cost and schedule projections. As value opportunities are discovered and priorities are understood, the team will use expedited cost feedback which include cause and effect pricing, A3s along with estimates as tools for efficient decision making. As a means of providing production analysis, work flow and schedule feasibility studies, VDC will leverage BIM. During A3 studies, option cost analysis, along with quantity validation of the BIM model will be used in quantitative function to aid in estimate validation along with A3 illustrations. Reliable and timely summaries will be used to inform design decisions.

Elements of the TVD Process

- Preconstruction and design pull schedule sessions set intensity and identifies team needs, and results in precise identification of “what” is required “when.” This ensures cost, design, and schedule are always in sync.
- Establishing a common understanding of project-specific values and goals of the owner and team members. The preconstruction and design team are unified with the owner’s vision and project needs.
- Creating the master TVD estimate. Our preconstruction will have certainty and the project costs are shared continually during design to enable productive and informed decision making
- Exploring options and considerations within cross-functional teams to inform design. The project team is continually pushed to leverage knowledge and seek innovations.
- Understand design options using our A3 (11x17) Reports. We Use A3’s to deliver precise information to team and owner decision makers. These tailored reports help the decision-making process—saving time and enhancing cost predictability.
- Organize and prioritize the team using our Value Opportunity Log (VOL). We use the VOC to track innovation, challenges, and optimized design solutions
- Trade partner involvement and timing. Our team will leverage the knowledge of the trade professionals. We will embrace the experience and emphasize new ways of thinking to ensure the owner achieving best value.
- Optimization studies for constructability, prefabrication, production and design for safety. We will think beyond preconstruction and develop protocol for efficiencies in quality, production and schedule.
- Developing BIM execution plan that includes production probability studies and quantitative analysis. This we enable the team to think ahead to construction production efficiencies and allow for preplanning that maintain certainty and explores better ways to build than the accepted norm.
- Understanding Life cycle study protocols required by facility management for any feasibility studies. This will consider beyond construction and will give a comprehensive understanding of design decisions in a systemic way.
- Passion for the Process: Our enthusiasm and expert knowledge are strong contributors to the reliable outcomes of your project.

A relevant example of the effectiveness of this process can be seen in the recent completion of the Howe Avenue Behavioral Health Project for Kaiser Permanente. The executive summary below of the completed project illustrates how the TVD process increased project value while achieving the initial project budget.

Proposed Methodology in Decision Tracking and Corresponding Cost Updates

Our Value Opportunity Log (VOL) will be the master decision tracking tool. The VOL is used as a proactive cost awareness tool. It is the home of all ideas and priorities. All items in the log include probability factors and rough order magnitude costs. Furthermore, the VOL identifies the appropriate analysis path that best fits each specific item ensuring decisions are well informed. The Value Opportunity Log is designed to generate certainty. Our methodologies aid the team to stay cost aware and organized while promoting “out of the box thinking” for good of the project.

Sample Value Opportunity Log



XL		CONSTRUCTION™						Risk and Opportunity Log	
Item #	Column1	Date Entered	RISK OPPORTUNITY -- Description	Probability	ROM Cost	Assessed Risk / Opportunity	Final Amou Approved (transferre		
T ~ Transferred X ~ Closed O ~ Open									
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2	T	6/8/2016	Re-use exterior VAV boxes	100%	\$ (15,000)	\$ (15,000)	\$ (16,		
3	T	6/12/2016	Remove 2 VAV zones (35 vs. 33). From base cost (only 33 shown)	100%	\$ (25,000)	\$ (25,000)	\$ (27,		
4	O	6/12/2016	Tie bathroom exhaust in to combo EF at roof.	30%	\$ (10,000)	\$ (3,000)	\$		
5	X	6/13/2016	Re-use high side duct work (need field verify)	0%	\$ (10,000)	\$ -	\$		
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7	X	6/15/2016	Point of use heaters in lieu of upsizing water heater	0%	\$ (5,000)	\$ -	\$		
8	T	6/18/2016	Telecom deduct based on further ICE document review	100%	\$ (30,000)	\$ (30,000)	\$ (88,		
9	T	6/8/2016	Security deduct (based on updated documents from KP)	100%	\$ (15,000)	\$ (15,000)	\$ (63,		
10	T	6/18/2016	Light fixture (\$200/fixture vs. \$400/fixture)	100%	\$ (75,000)	\$ (75,000)	\$ (78,		
11	O	6/20/2016	SMUD rebate	50%	\$ (50,000)	\$ (25,000)	\$		
12	T	6/22/2016	Group shell space (modified plan) with leaving shell spaces in their designed location but placing POC's for future and eliminate interior walls. Open studs, basic build.	100%	\$ (300,000)	\$ (300,000)	\$ (211,		
13	T	6/28/2016	Surface mounted door drops	100%	\$ (10,000)	\$ (10,000)	\$ (9,		

Cost Control Methods During Construction

XL Construction uses Viewpoint to track costs and issue budget updates. This system is based on a database platform that minimizes repetitive steps in the financial management of a project. XL has the ability with Viewpoint to manage the costs for a project even if there are substantial changes in scope. Viewpoint enables us to track these costs and accurately forecast the final projected costs for a project in a timely manner.

XL's project manager will review the Project Cost Report (PCR) monthly with the client's project manager. The PCR will identify the forecasted project costs against budget by CSI division and give a very accurate financial picture of the project. In addition to Viewpoint, XL utilizes Timberline estimating and accounting software to establish the project control estimate and track project costs. The Timberline software imports and exports into the Viewpoint to allow for a flexible real time cost reporting system.

Working with the Architect

Our preconstruction processes, team culture and tools are designed to generate certainty. Our methodologies aid the team to stay cost aware, organized while promoting "out of the box thinking" for good of the project. We are a service and partner to the architect's vision. A systemic and detailed cost analysis will be developed early in the planning stage. Current state is regularly updated with latest design iterations. We will commit to a proactive approach to estimating as opposed to reactive. Through communication the team will be in a continual awareness mode as the ideas are vented and value options are studied and agreed to by the "Whole" team. We will demonstrate consideration to complete "through-put" pricing and all cause and effect. The detailed estimate will track the team's costs relative to goals, often and continuous. The estimate will be formatted to reliably inform the team of costs from early in preconstruction thru completion of construction.



"The XL team was great- they provided solutions and made things happen. Their expertise in MEP systems was pivotal in helping us achieve occupancy on our project. Overall, their professionalism and honesty truly impressed me. They are really just the kind of people you want to work with."

*- Tina O'Brien
UCSF Medical Center*

23

Number of projects
completed with
Smith Group

G. SCHEDULE MANAGEMENT

A Comprehensive Schedule Will Save Time and Money

Maintaining a Project Schedule

Schedule Management starts on the first day of our projects. During the design process, we are identifying the long lead items reviewing all of the products and materials to ensure we are providing input to help expedite schedule activities during construction. We will provide alternative solutions or strategies through the design process to mitigate scheduling issues in the field. XL is a practitioner of Lean Scheduling Techniques and will be employing Last Planner and Pull Scheduling to ensure timely completion of the project design and construction.

Timely Project Completion

The Team's desire to create collaborative environments extends to the subcontractor community as well. We work diligently to ensure that the project-specific knowledge gained through our direct interaction with the Design Team is relayed effectively to the tradesmen responsible for putting the work in place. A tool we find effective in ensuring subcontractor buy-in to our schedule and sequencing is a Pull Schedule. This method of scheduling allows for all stakeholders to have a say in the sequencing and durations provided for specific tasks. We have found that it both reduces the duration of our projects and gives subcontractors a feeling of inclusion and ownership of the schedule. Utilizing the results of the Pull Schedule, XL and our Trade Partners will employ the Last Planner to develop weekly work plans which is the daily roadmap to quantifiable schedule measurement. A specific case study of how this approach was used and the results of that effort at the Kaiser Arques MOB.



XL uses pull planning to ensure the project schedule requirements are achieved.

XL IN ACTION



Pull Scheduling Shaves Eight Weeks Off Schedule

On a Kaiser Arques project, XL employed Lean Construction principles to improve efficiency and minimize waste. To do this, the XL Project Team led a five-hour pull schedule planning session with approximately 30 project stakeholders.

Ultimately, the pull schedule process helped us understand what the trade partners' constraints were. With this understanding, we were able to reduce the RFP schedule of 26 weeks down to a construction schedule of only 18 weeks.

H. QUALITY CONTROL AND PROBLEM SOLVING

Example of a Constructability Program

XL was tasked with delivering a minimum STC 44 wall assembly for speech privacy. In an effort to meet the assembly STC performance and reduce cost, Coffey Builders and XL proposed a CD Pro-Stud 25ga wall assembly that saved approximately \$200,000.

Another example of a constructibility program was at the Kaiser Permanente Med-Surg Expansion. XL's project team created a scale mock-up of the patient headwall system. Utilizing this mock-up XL, Kaiser, and its user groups were able to establish the exact configuration for the layout of the headwall. This effort established that the original configuration would not function as needed by the users. The result was that the prefabricated headwalls were ordered correctly and in time to meet framing schedules, saving time, and significant costly re-work.

Quality Control Program

XL's goal is to promote and deliver the highest quality construction projects, from conception and feasibility, through construction, client move-in, and the final post construction walk-through. We believe that in order to achieve the best possible outcome, an organization must continuously implement, monitor, and improve every aspect of its operation. Therefore, our teams are not only encouraged to use this QA/QC plan, but to continuously improve upon it.

XL consistently provides the highest quality products with exceptional customer service by:

- Creating project-specific quality control plans in addition to the overall QA/QC plan
- Monitor the quality on each and every project
- Address conditions that are substandard or in the least bit concerning to our clients
- Understand and learn from past projects and situations, continuously improving our operation
- Eliminate any defect and promptly address issues if they occur

The implementation of these practice has proven very effective on our El Camino Hospital Behavioral Health Project. Two Specific tools that the XL Team has employed is the Observation Log and Inspection Tracking. Our team is continually observing the project and identifying work items that require correction. These items are tracked and reviewed with our trade partners on a weekly basis to ensure that corrections are implemented. Inspections are a critical component of all OSHPD projects, both in the overall quality of the project and in the efficiency as well. XL's team will leverage our Procore Project Management Software to ensure that all inspections are tracked, pre-inspected and successfully completed.

The XL Way
Understand
Plan
Collaborate
Execute
Finish



XL's goal of delivering the highest quality construction on the South San Francisco Campus Project will be accomplished through:

1. Complete a thorough constructibility Review of the documents to address constructability issues
2. Collaborate with Cordilleras, PDU, Cannon Design and user groups to develop a detailed project Quality Control Plan
3. Implement the Project Observation Log and encourage weekly team reviews of the work
4. Establish a real-time feedback loop to ensure expectations are met or exceeded
5. XL's Quality Control Manager will provide continuous monitoring of project quality

Printed on Fri Dec 15, 2017 at 06:33 am PST

Job #: 3882 B Camino Hospital BHS / CUP
2500 Grant Road
Mountain View



XL Construction

Draw #	Title	Description	Category	Type	Location	Date Created	Date Due	Priority	Status
72	SOH RW#12: Item #02 - 12" Rebar at Slipped Footing	At a stop in the concrete footing, we observed an inside and outside corner condition. We did not observe the corner reinforced with a 12 in. strip of Situbone 4000. In addition, we did not observe liquid membrane (Sikaflex) at the leading edge of the footing. See attached photos for details. Apply 12 in. wide base strips centered at corners. Cover all protruded corners with a full sheet of membrane to ensure full coverage. Seal all terminations of the Situbone 4000 with Liquid Membrane.	Quality	Waterproofing	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
77	SOH RW#12: Item #02 - Damaged Situbone 4000 at Site Wall	On site location, we observed damage to the Situbone 4000. See attached photos for details. Repair damaged Situbone 4000 in accordance with the Project Requirements. See attached photos for details.	Quality	Waterproofing	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
78	SOH RW#12: Item #04 - Vertical Curvature of Situbone Down Edge of Footing	We observed that the Situbone waterproofing is less than 1/2 in. and terminate Situbone 12-473326-888. A 3 in. to be achieved.	Quality	Waterproofing	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
79	SOH RW#12: Item #05 - Infiltration Penetration at Waterproofing	We observed a penetrable penetration with red latex.	Quality	Waterproofing	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
88	SOH RW#12: Item #06 - Termination Bar at Top of Site Wall	We observed that it is still in progress. Set-top edge of requirements.	Quality	Waterproofing	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
88	SOE RW#11, 14, 17 - Thermal damage to anchor rod threads at the northern base plate of GFD-1	A hair net on GFD-1 was a general of the anchor rod threads at the northern base plate of GFD-1.	Quality	Concrete	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
82	Rebar Spacing at Line 0.2 Foot Boundary	Vertical spacing of rebar at amount at 0.2 line. The 4 rebar spacing is still in progress.	Quality	Concrete	BHS Sec. 2- Site Constant	10/20/2017	12/14/2017	Medium	Not Accepted
78	ORL - Item #85 - Rebar Clearance from Finish Wrap on Plumbing	Rebar clearance from finish wrap on plumbing. Adjust rebar to maintain clearance.	Quality	Concrete	BHS Sec. 2- Site Constant	11/17/2017	12/14/2017	Medium	Initiated
3	Sack and Patch at Grading Part	Sack and patch at grading part.	Quality	Concrete	BHS Sec. 2- Site Constant	06/20/2017	12/14/2017	Medium	Initiated
61	Missing Conduit Stub Up to Kitchen Table	Power and data conduit approval prior to concrete pour. Concrete down to top of pipe & prior to install place back as concrete sets.	Quality	Concrete	BHS Sec. 2- Site Constant	10/20/2017	12/14/2017	Medium	Initiated



XL Construction
851 Buckley Court
Millbrae, California 94035
Phone: (408) 240-8000
Fax: (408) 240-8001

Inspection

Project: 3882 - El Camino Hospital BHS / CUP
2500 Grant Road
Mountain View,

3240 - Concrete Slab on Grade #6

116/116	70	5	41
Items Inspected	Passed	Failed	N/A

TYPE: OSHPD STATUS: Closed

TRADE: LOCATION:

SPEC SECTION: 033000 - Cast-In-Place Concrete LINKED DRAWINGS:

DESCRIPTION: Healthcare OSHPD Quality Control Checklist and Inspection Template/Concrete Lab on Grade. Updated 9/31/17

ATTACHMENTS:

INSPECTION DETAILS

INSPECTION DATE: 9/9/2017 INSPECTORS: Ben Acuna, Dan Pawlowski, Sonny Granados, Ramiro Padilla

RESPONSIBLE CONTRACTOR: Bradley Concrete RESPONSIBLE PARTY: Tony Erfurt

SECTION B - 3RD PARTY TESTING AGENCY

1.1 Concrete CBC 1705A.3, 1903A.6 & 1910A.1, ACI 318 1.9.1 & 26.4 Cementitious materials
Data: P F NA

Activity: 3 Status Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

Ben Acuna changed the status to NA on September 14th, 2017 at 09:51 AM PDT

Ben Acuna changed the status to Pass on September 14th, 2017 at 06:31 AM PDT

Ben Acuna changed the status to NA on August 31st, 2017 at 11:45 AM PDT

1.2 Concrete CBC 1705A.3, 1903A.5, ACI-318 1.9.1 & 26.4 Aggregated/Reactive aggregates
Data: P F NA

Activity: 1 Status Change, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

Ben Acuna changed the status to NA on August 31st, 2017 at 11:45 AM PDT

1.3 Concrete CBC 1705A.3, ACI-318 26.4.1.3 Water
Data: P F NA

Relationship with the Local Subcontracting Community

There is significant opportunity for a 'win-win-win' with your local community. The community will experience a positive economic impact, you will gain long terms support from the community, and environmental impacts from travel can be minimized.

The key to generating market interest and attracting qualified subcontractors in this market is strong relationships. Our long partnerships with top tier trade contractors benefit your project as we communicate with them early and ensure their participation in bidding your project. With a goal to facilitate the best possible bids with the fewest contingencies, we focus on:

- Efficiency
- Clear bidding documents
- Adequate bid timeframes
- Precise bid instructions

We have a database of 600+ prequalified subcontractors, and have a reputation in the industry for treating them fairly and ethically. This benefits the project by attracting the most qualified subcontractors who bid the work with the least contingencies, ensuring a best value for their scope.

Communicating constructability, phasing, bid package strategy, value engineering, and other budget options in a format that will quickly facilitate the Owner's decision-making as well as decision-tracking.

During preconstruction XL's team will use A3 Reports to deliver precise information to team and owner decision makers. These tailored reports help the decision-making process and understand constructability issues in a simple single page format. Utilizing the resources of XL's VDC group we will work closely with South San Francisco Campus Project and PDU to develop detailed phasing models. This information will be distributed to the Trade Contractors during the bid phase. This provides a clear roadmap of the sequence of the work. The Value Opportunity Log will track the team's decisions and ensure that project decisions are consistent and implemented. Key Owner decision points both in design and construction will be incorporated into the Master P6 Project Schedule. During weekly team meetings, the 6-week look-ahead schedule will be reviewed providing the Owner time to respond to key decision points.



"I wanted to thank the XL team again for the extra effort during the rain storm. The fact that you had already arrived to check the enclosure before I even had the chance to call you was incredible. I really appreciate the way XL took personal ownership by stopping by to check it because of the high winds. The XL team made a difficult situation much better for our patients. It is a real pleasure to see that level of dedication."
- John Folk
El Camino Hospital

Issues and Conflicts Encountered with the Owner, Consultants, Architect/Engineer, or Subcontractors

With XL's approach of Alignment, conflicts are very rare. Open Communication and a Team Approach for all Project Team Members reinforces the strength of the team and avoids issues. XL currently has no open conflicts with Owner's, Architect/Engineers and Subcontractors because of that openness with the team. The most effective tool to resolve potential conflicts is to address them as soon as they arise. At XL Construction, our team members work diligently to keep lines of communication open and prevent conflicts from arising.

Conflict Resolution in Action - One example has to do with intumescent paint that was specified on a particular project. After careful consideration and examination, XL questioned the use of the intumescent paint despite the owner and design team insisting on its use. The product was specified on concealed structural elements with the idea that the intumescent paint would allow for the framing around columns and beams to be closer to the structure, thus reducing the impact to the floor space. The design did not take into consideration that the intumescent paint expands when heat is applied. Although the details showed framing tight against the structure, we pointed out that the spacing required to allow the intumescent paint to expand would be similar in thickness to spray applied fireproofing, which is less expensive and can be applied in conditions open to the environment. The use of intumescent paint was going to be costly and require extensive costs and a longer schedule duration to apply the product in an un-acclimated building. We worked closely with the owner and the design team to provide solutions which resulted in eliminating a significant portion of the product thus providing the owner with added value at less cost.

Examples of Pre-construction Services

Three primary elements of preconstruction services that lead to improvement in overall budget, schedule and quality. These elements are effective with all trade contractors.

Alignment.....alignment on scope and client goals. We will not separate into "Design" and "Construction" camps. As a team, we collectively understand client goals, and craft the scope to suit those goals, while avoid waste in areas that aren't important to our client.

Buy Out.....effective subcontractor buyout. The majority of the scope of most construction projects are subcontracted, so our focus on getting the right prequalified subcontractor to maintain schedule and quality, and crafting detailed bid instructions to avoid bid contingencies, allows us to maximize budget, schedule and quality.

Solutions.....creative and innovative solutions. These happen every day. A few examples:

1. On a past project XL working closely with the Design Team and the Owner revised the foundation system from driven piles to over excavation and re-compaction reduced the project cost by \$1M.
2. Changing the structure and system type from structural steel and metal framed exterior walls to tilt up construction on a recent school project allowed the owner to meet their aggressive cost targets.
3. During a Target Value Design process on another project , shell spaces were combined into a single area and partitions types were modified to provide the same sound values while minimizing cost, again allowing the owner to meet aggressive budget goals.
4. Utilizing the A3 decision tools on a recent project XL studied the use of Therma-Fusers on the project. The result of this study showed Therma-Fusers were not in the best interest of the project. Kaiser adopted this recommendation saving the project costs and time.

XL IN ACTION

Budget Management Success Story

A major skilled nursing and memory care facility, currently in XL preconstruction, has achieved aggressive cost goals totaling a project cost decrease of \$23 million dollars. The process was challenging and rewarding. The building, being set in a hillside with a 30% change in grade meant finding the right massing configurations and efficient positioning into the hillside was responsible for 10% of the \$23 million efficiency savings. Continuous brainstorming, “what if” sessions, a systemic understanding of cost, resulted in an efficient building design with maximum usable space utilization. The design progression was in sync with the owner’s goals and their programming needs.

Our process never jeopardized the end goal of building the facility for the resident/clients.

I. TECHNOLOGICAL EXPERIENCE INCLUDING BIM

Three new construction projects (public or private) over \$50 million in construction volume where the Proposer utilized technological tools including BIM to support the design process, coordinate multiple trades and facilitate the management of budget and schedule.

El Camino Hospital

Completion Date: Feb 28, 2019

How Long: 3 Years

Value: \$73M

Contact: Laura Reyes

laura_reyes@elcaminohospital.org

650/962-5761

PDL

Completion Date: Nov 2007

How Long: 11 month

Value: \$105 Million

Contact: Bruce Laprade

(Now with Genentech, Inc)

laprade.bruce@gene.com

707/454-1000

Bayer QC

Completion Date: November 1, 2016

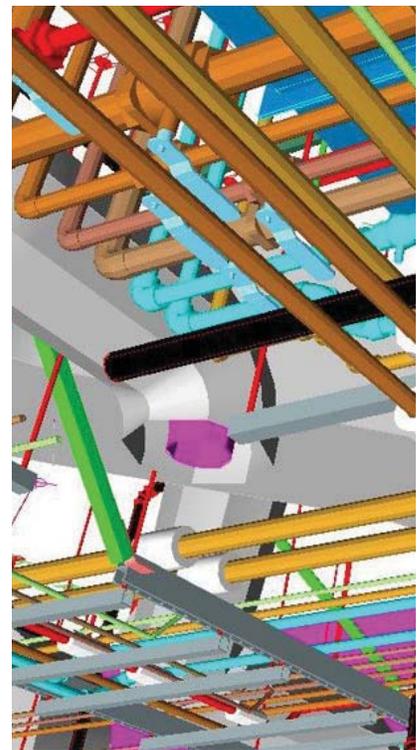
How Long: 1.5 Years

Value: \$64M

Contact: David Wood

david.wood@bayer.com

510/705-5813



XL Building Information Modeling (BIM) professionals use BIM to help minimize project costs during both pre-construction and construction.

XL IN ACTION



XL + Net Zero

Achieving net zero energy is a balance between reducing energy demand and supplying a renewable energy source. Key to reducing energy use is installing and commissioning systems to work as modeled and desired based on program requirements.

Though much of the Net Zero effort is based on design, XL takes on the responsibility of getting building systems online and at peak performance. Through detailed BIM coordination, careful oversight throughout installation, and active participation in the commissioning and training of building users, XL aims to achieve this high standard of energy efficiency from start of operation. We also work with Facilities staff on an ongoing basis to help pass on our knowledge of building systems, to reduce behavioral and operational issues that could undermine the net zero energy target.



Courtney Lorenz
Sustainability Expert

XL's Onsite Sustainability Program

XL learns lessons from each project that it builds, and works that into a process of continual sustainability improvement. Our program take the best practices from onsite management and green building techniques, and focuses on early planning for your project. From project kick-off, through design and on to construction, we will integrate your project goals with our experience to deliver an environmentally, economically, and socially responsible facility.

J. INNOVATIVE TECHNIQUES

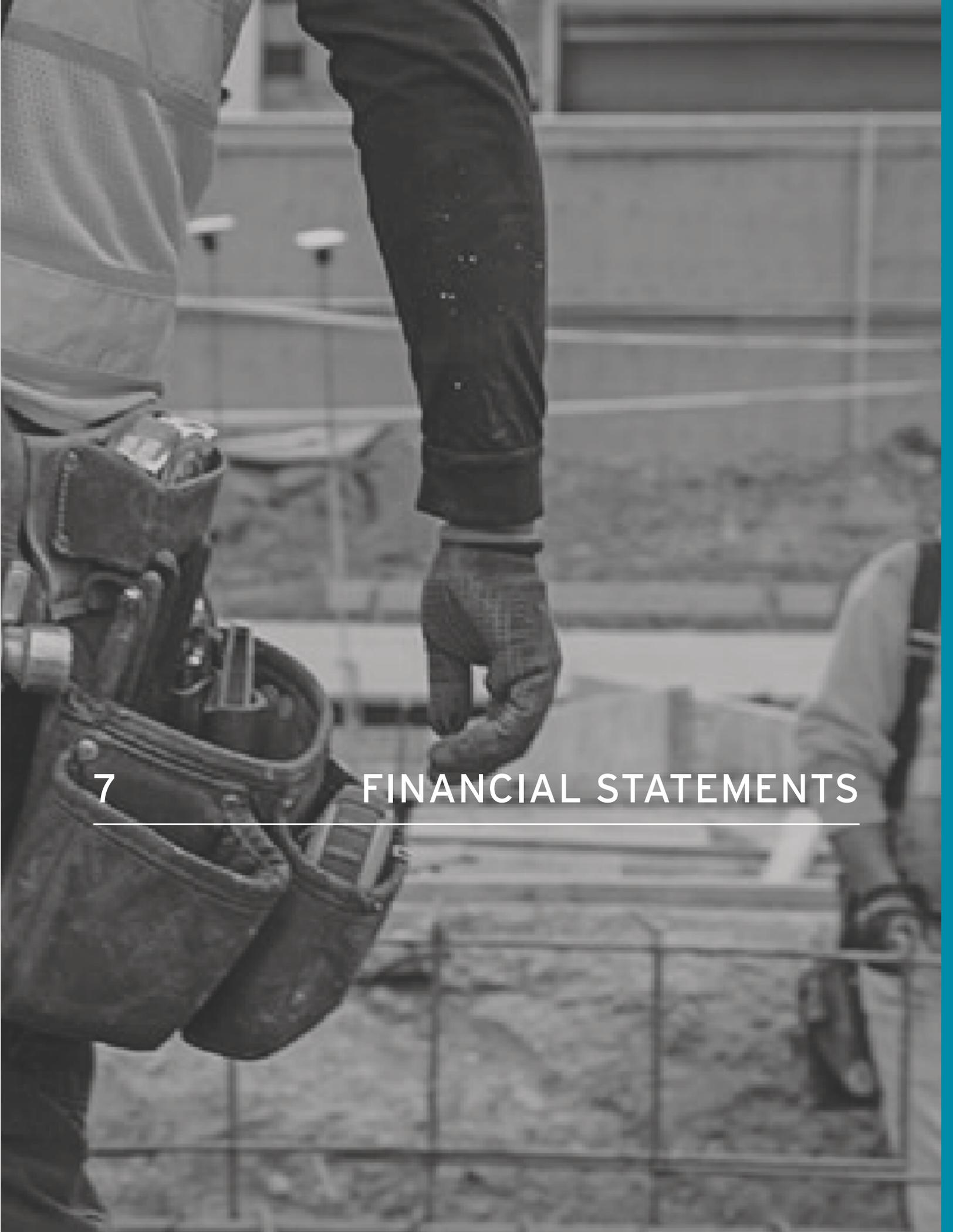
XL Construction embraces and employs innovative techniques on our projects. Our experience in utilizing these have benefited all project team members as well as the project. For the South San Francisco Campus, we would employ the TVD Process, conduct Alignment Sessions and utilize the Last Planner.

Alignment Sessions, conducted early with all project stakeholders improves communication and fosters a team approach to the project. This Team Alignment streamlines and opens the communication with the project team which results in collaborative responses

Through employing the TVD process the Owner is provided cost certainty early in the process and ensure the team is working towards the project cost goal.

In utilizing the Last Planner including Pull Planning and Daily Check-ins on all aspect of the project we are able to establish collaborative schedules that consistently meet or exceed project delivery milestones.

Implementing pre-fabricated analysis along with 3D modeling of canyon construction means and methods to help inform the team of construction methodologies.



7

FINANCIAL STATEMENTS

07 Financial Statements

XL is in good financial standing, having completed over \$2 Billion of work in the last 5 years. Confidential Financial Statements for the past three available years (2017, 2016, and 2015) are enclosed under separate cover.

Year	Volume of Construction
2018	\$482 M
2017	\$480 M
2016	\$522 M
2015	\$374 M
2014	\$301 M
2013	\$237 M
2012	\$257 M

FINANCIAL REFERENCES

Bridge Bank

Contact: Ryan Banta, Vice President

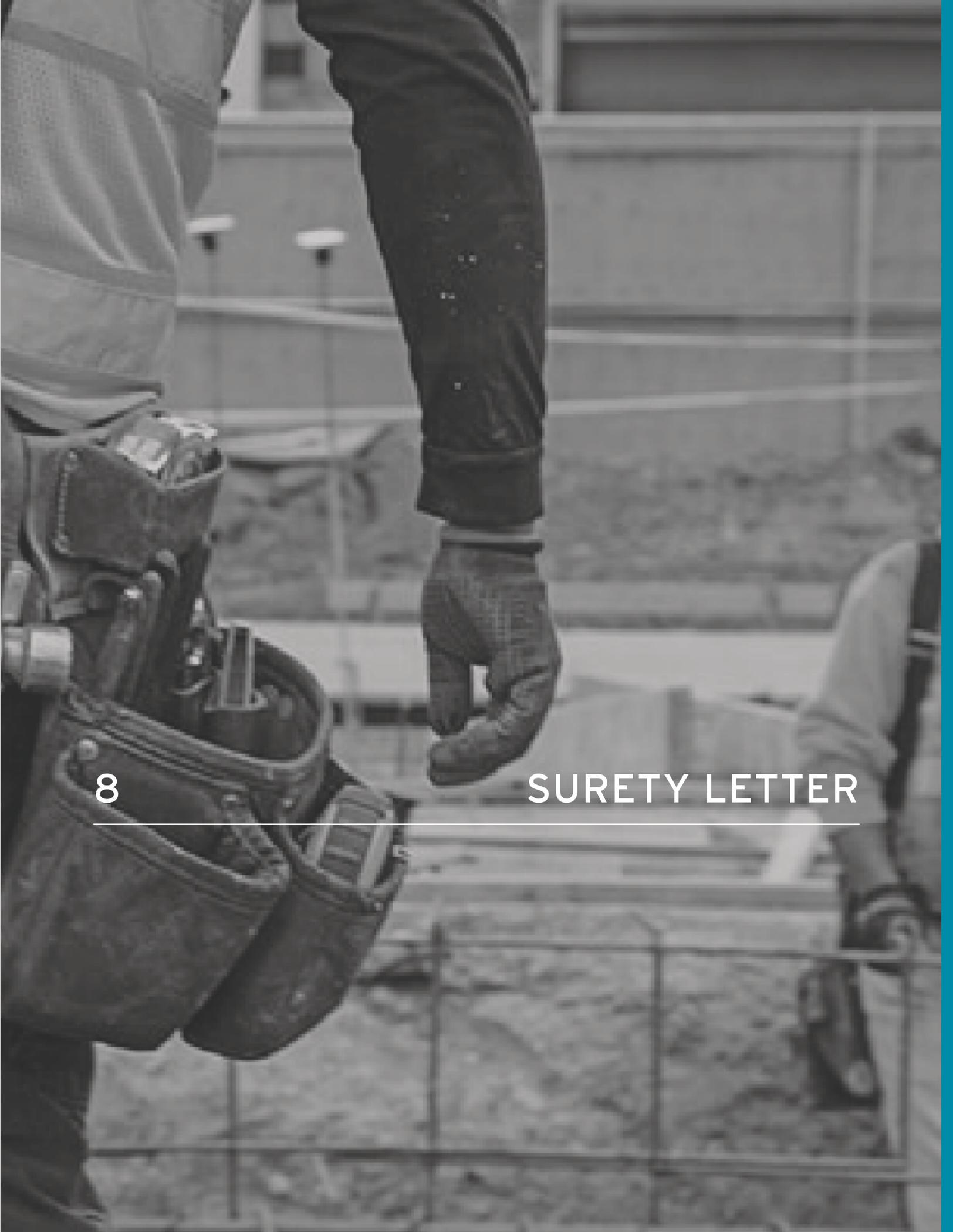
925/249-4908

Ryan.Banta@bridgebank.com

55 Almaden Boulevard

San Jose, CA 95113

XL has worked exclusively with Bridge Bank over the last four years therefor we are only providing one reference.



8

SURETY LETTER

08 Surety Letter

CHUBB

2603 Camino Ramon, Suite 300
San Ramon, CA 94583-9137

February 25, 2019

To: County of San Mateo

Re: Prequalification Letter - XL Construction Corporation
Project: South San Francisco Campus Project

To Whom It May Concern:

XL Construction Corporation ("XL") has asked us to provide you with information relating to our experience and relationship with them as their surety.

Federal Insurance Company has participated in the surety program of XL for the past 16 years. We have had a most favorable experience with XL, and developed a high regard for them as a surety customer. We support XL with a surety program with a total current bonding capacity in excess of \$400,000,000 and a single project bonding capacity of approximately \$200,000,000 with an available bonding capacity in excess of \$300 million.

If XL Construction is awarded the Contract, we will provide XL Construction a 100% performance and payment bond. Our support is conditioned upon and subject to the completion of our underwriting process, including, but not limited to, our review of and satisfaction with the underlying contract documents, bond forms and financing, and our determination that the proposed bonding arrangement is acceptable to us.

This letter is not an assumption of liability or a commitment to issue bonds. It is solely a contractor prequalification letter for XL, which is being furnished to you at its request. Any arrangement for bonds is strictly a matter between XL and Federal Insurance Company.

Federal Insurance Company is an admitted surety insurer authorized to issue bonds in the State of California. Federal Insurance Company is a U.S. Treasury listed surety with an A.M. Best & Company credit rating of A++ (Superior) XV and is listed on the U.S. Treasury Listing with an underwriting limitation of over \$1.1 billion.

If we can provide any further assurance or assistance, you may contract Kevin Re at Arthur J. Gallagher & Co. located at 1255 Battery Street, Suite 450, San Francisco, CA 94111; phone number: 415.288.1636.

Sincerely,

Federal Insurance Company

By: 
Susan M. Exline, Attorney-in-Fact

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Contra Costa

On February 25, 2019 before me, Julia Ortega, a Notary Public
(insert name and title of the officer)

personally appeared Susan M. Exline
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature *Julia Ortega* (Seal)





Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Susan M. Exline and Kevin Re of Lafayette, California; Virginia L. Black, Brian F. Cooper, Susan Hecker, M. Moody, Maureen O'Connell, Janet C. Rojo, Betty L. Tolentino, Robert P. Wrixon and K. Zerounian of San Francisco, California

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 17th day of August, 2018.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

Stephen M. Haney

Stephen M. Haney, Vice President



STATE OF NEW JERSEY

County of Hunterdon

ss.

On this 17th day of August, 2018, before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with Stephen M. Haney, and knows him to be Vice President of said Companies; and that the signature of Stephen M. Haney, subscribed to said Power of Attorney is in the genuine handwriting of Stephen M. Haney, and was thereto subscribed by authority of said Companies and in deponent's presence.

Notarial Seal



KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2318986
Commission Expires July 16, 2019

[Signature of Katherine J. Adelaar]

Notary Public

CERTIFICATION

Resolutions adopted by the Boards of Directors of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY on August 30, 2016:

*RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
(2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
(3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
(4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
(5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
(ii) the foregoing Power of Attorney is true, correct and in full force and effect.

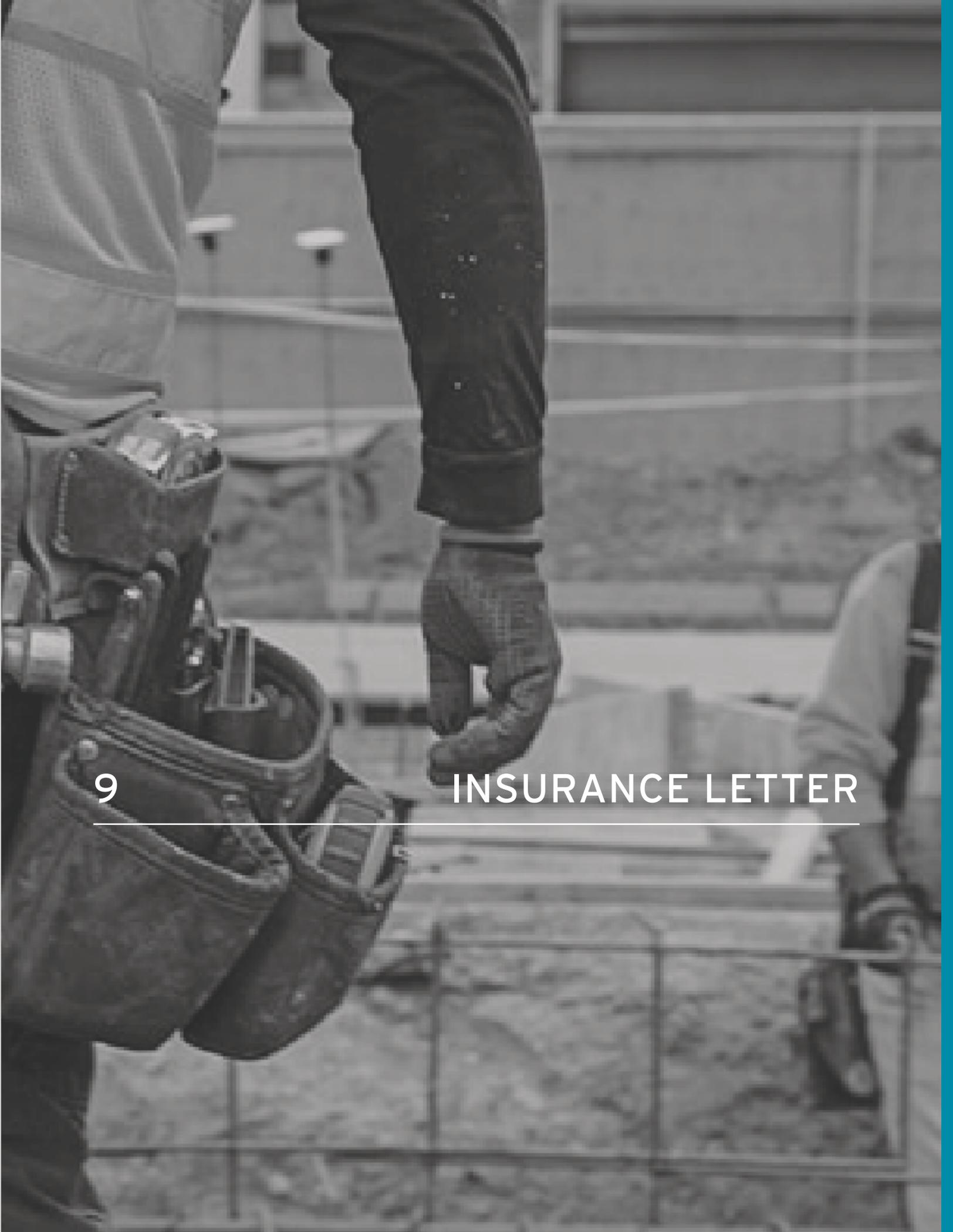
Given under my hand and seals of said Companies at Whitehouse Station, NJ, this February 25, 2019



Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:
Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com



9

INSURANCE LETTER

09 Insurance Letter



Arthur J. Gallagher & Co.

February 25, 2019

XL Construction Corp.
851 Buckeye Court
Milpitas, CA 95035

RE: County of San Mateo Project Development Unit – RFSOQ
South San Francisco Campus Project

To Whom It May Concern:

This letter is to confirm that XL Construction Corp has the following insurance coverages and limits in place with an AM Best Rating of A+ XV. XL Construction Corp. is licensed to operate in the State of California. The following are the insurance coverages currently in place:

General Liability:	\$1,000,000 Each Occurrence \$2,000,000 General Aggregate \$2,000,000 Products Completed Ops Aggregate \$2,000,000 Per Project Aggregate
Automobile Liability:	\$1,000,000 Each Occurrence \$1,000 Compensation/Collision Deductible
Workers' Compensation:	Statutory Limits
Employer's Liability:	\$1,000,000 Each Accident \$1,000,000 Disease/Occurrence \$1,000,000 Disease/Aggregate
Umbrella/Excess Liability:	\$51,000,000 Each Occurrence \$51,000,000 General/Annual Aggregate Coverage is follow form as respects to the General Liability/Employer's Liability and Automobile Liability
Professional and Contractors Pollution Liability:	\$10,000,000 Each Act or Pollution Condition \$10,000,000 Aggregate
Builders Risk:	\$100,000,000 Project Limit Available

Also additional limits and coverage lines may be available should they be required. Should additional coverage information be needed, or if you have any questions, please do not hesitate contact us.

Sincerely,

Carla Colombana
Direct: 925-953-5260

Arthur J. Gallagher & Co. Insurance Brokers of California, Inc.
3697 Mt. Diablo Blvd. Suite 300
Lafayette, CA 94549
CA Lic # 0726293

o 925.299.1112
f 925.299.0328
ajg.com



10

SAFETY PROGRAM AND QUALITY CONTROL PROCEDURES

10 Safety Program and Quality Control Procedures

XL Construction has worked over 11 consecutive years (over 5.8 million straight hours) with zero lost work days. Our commitment to safety will ensure that the project is completed without incident, and that all workers, owners, and the public go home safely at the end of each day.



Importance of Safety

- Peace of mind that your project will be injury and accident free
- Protects your project schedule and budget from impacts caused by safety incidents
- Your people and your neighbors will be protected from construction activities
- No negative press resulting from construction incidents

It Starts with Culture

A true culture of safety empowers employees to stop work when they see something unsafe. It encourages everyone in the company, and everyone on project sites, to **put safety first**, to preplan, to look for better ways to do things, and to think about the ultimate safety of everyone who will inhabit the building - while in construction or after completion.

Our safety and project teams work with your staff to create a safe work environment. It is our responsibility to protect your employees, as well as ours. We strive to prevent injuries and accidents, which can lead to costly delays and have a negative impact on team morale.

Ensuring safety includes requiring all subcontractors onsite to:

- Take a safety exam prior to starting work
- Review the Site-Specific Safety Plan
- Develop Pre-task plans and Job Hazard Analysis for all high hazard activities
- Perform daily safety audits to ensure work is being performed safely

THINKSAFE
WORKSAFE
HOMESAFE

Our Safety Training

All field supervisors are OSHA 30 trained. Several Superintendents are also Safety Trained Supervisor - Construction Certified (STS-C through the Board of Certified Safety Professionals). Our goal is to have ALL superintendents STS-C certified.

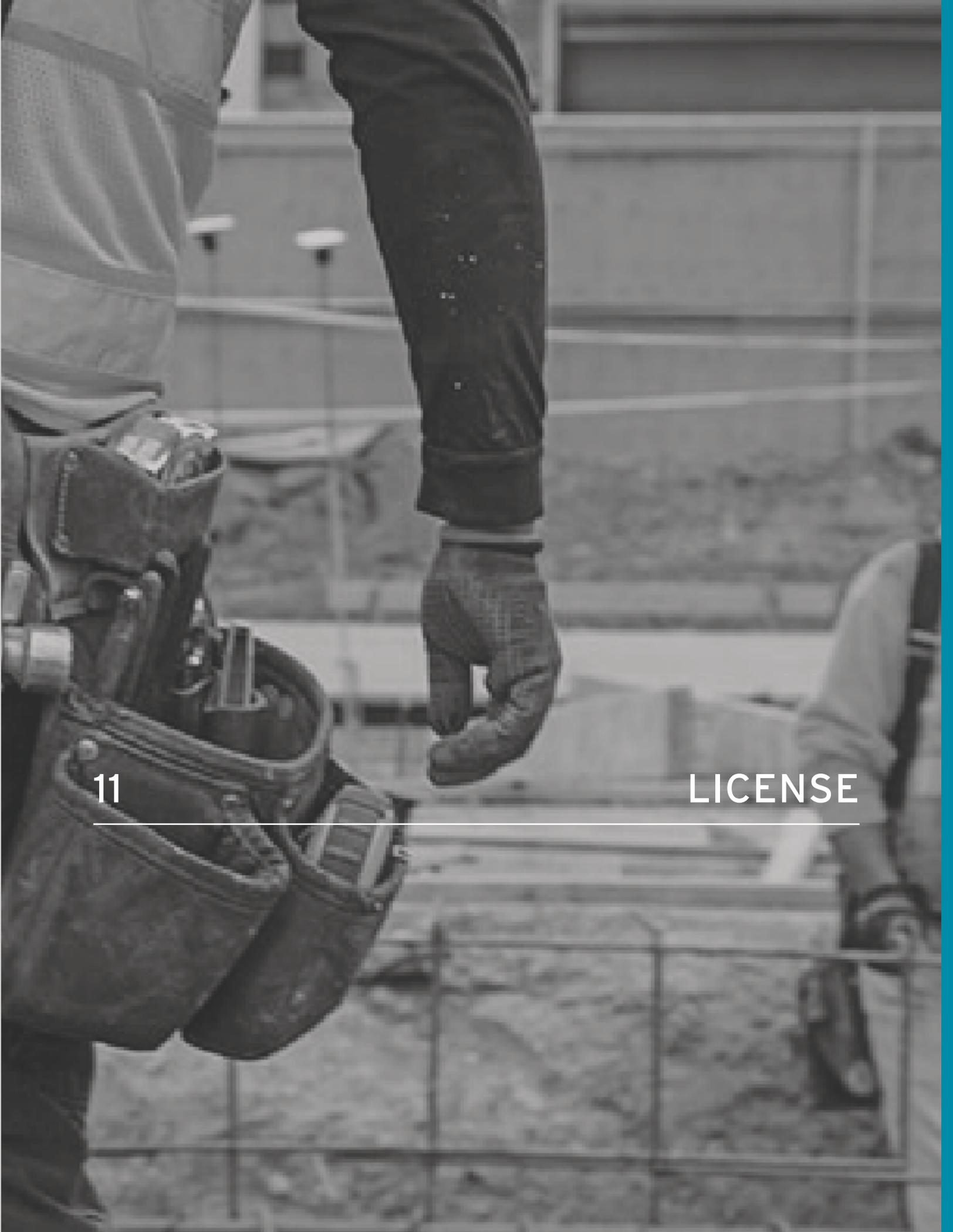
Subcontractors must be trained pertaining to their specific tasks including our Subcontractor Safety Program. This training may consist of:

- Competent Person Training for their scope of work (i.e. Trenching and Excavation, Fall Protection, Scaffold and HAZMAT Removal).
- Specific Tool and Equipment Training Certification, i.e. Aerial Platform, Forklift and Powder Actuated Tool)
- Awareness training for project-specific exposures, i.e. blood borne pathogens, asbestos and lead, infection control, etc.



“Achieving approximately 110,000 contractor hours with no time lost or record-able injuries is worth noting. As the Ford Land Project Manager on the site, I appreciate your dedication to the health and safety of the entire team.”

- Tony Jasser
Ford Research and
Innovation Center



11

LICENSE

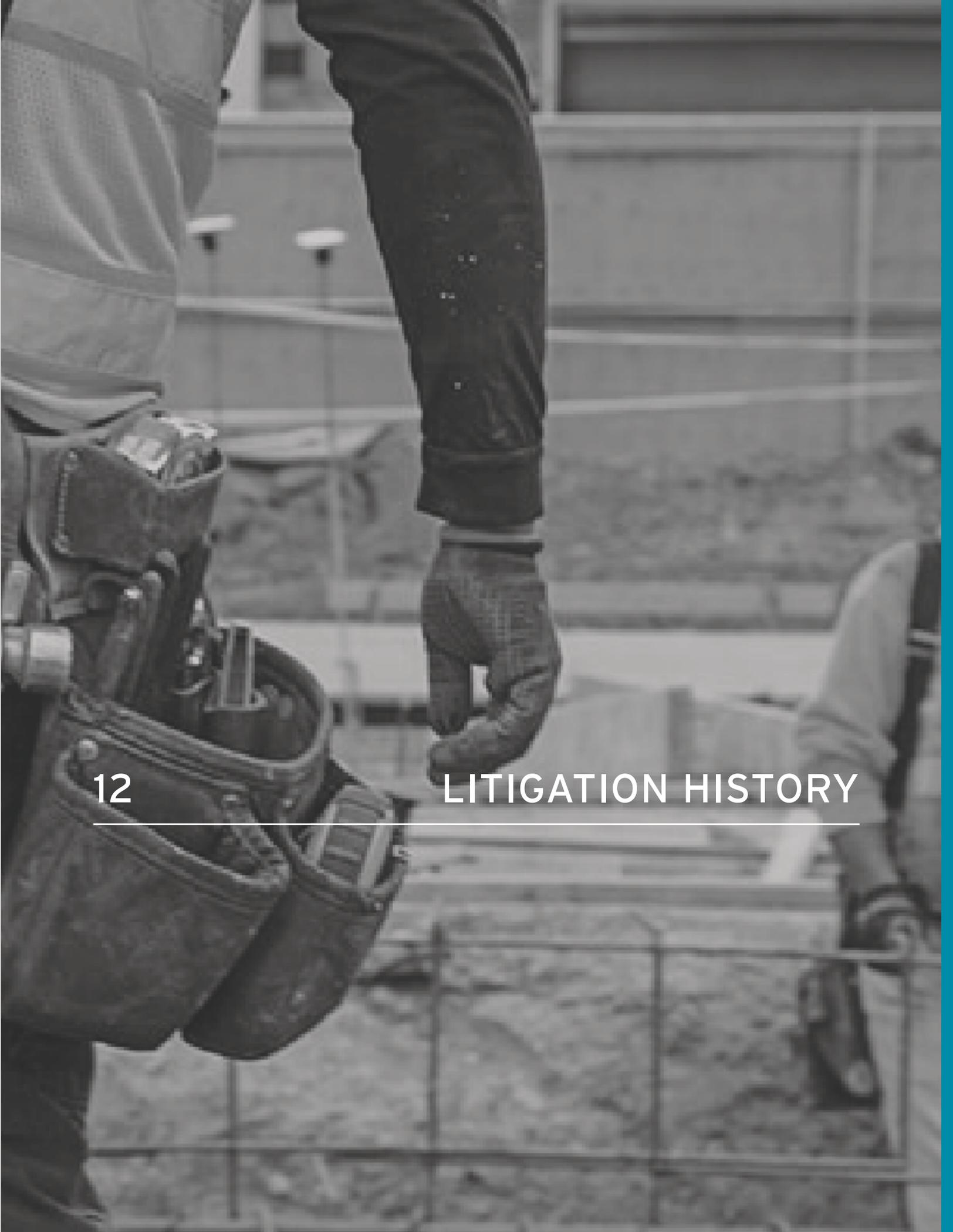
11 License

License Number: 647480

Classification: B, C-8

XL Construction's license has never been suspended or revoked.





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LITIGATION HISTORY

12 Litigation History

In July of 2018, XL Construction was included in a construction defect lawsuit on the Antioch High School Library Project. The claim alleges that the building foundation sub grade was not properly compacted resulting in soil subsidence and building settlement. The project is covered by an OCIP insurance policy in which XL and its subcontractors are respectively enrolled. The OCIP policy in place is insured by Zurich Insurance Corporation. XL Construction and its subcontractors built the Library Building in compliance with the plans and specifications provided by the District. Further, each phase of construction was supervised, inspected, signed off and ultimately certified by the Antioch School District Inspector of Record (IOR) and an onsite geotechnical special inspector. XL Construction and Zurich believe the cause of the building subsidence stems from a geotechnical design deficiency and is not related to the means and methods implemented during construction. Zurich Insurance is providing a defense of this position as the claim moves forward through the legal system.

Claimant (Owner): Antioch Unified School District

Total Amount of Claim: \$5 Million

Phone: 925/779-7500

In the unlikely event that a dispute arises, our approach is simple—we will work diligently and fairly to resolve all disputes in a timely manner. One of our senior executives (not directly involved in the project) will evaluate the issues and impacts, and work with the project team to develop mutually agreeable resolutions based on good logic rather than emotions. Our effort will always be to keep your project on track while resolving the matter without litigation and lawyers. If we cannot solve an issue without help from a third party, we strongly prefer to mediate with a mutually acceptable mediator before any arbitration or litigation.

Our ultimate goal is to work with the County of San Mateo for years to come.
