



INGLEWOOD UNIFIED SCHOOL DISTRICT

BID #25.108 Site Improvements at Bennett Kew Vol 2

Procurement Timeline

BID Issued and Posted	June 5, 2025	
Legal Advertisement	June 5, 2025 June 12, 2025	The Daily News
Mandatory Job Walk	June 20, 2025	10 AM at Bennett Kew located at <u>11710 S Cherry Avenue, Inglewood, CA 90303</u> . Please RSVP by 2 PM on June 18, 2025 to <u>christopher.diaz@inglewoodusd.com</u>
Deadline - Request for Clarification	June 25, 2025	Via email to <u>christopher.diaz@inglewoodusd.com</u> by 12 PM
Prequalification Applications Due	June 24, 2025	
Respond to Request for Clarifications	July 2, 2025	
Prequalification Notice to Contractors/MEP Subs	July 11, 2025	
Electronic BID Submission Deadline	July 16, 2025	Electronic Bids must be submitted via PQbids by 2 PM. BIDs will be opened and publicly read aloud online at To join the video meeting, click this link: <u>https://meet.google.com/gpd-dzn-n-rsi</u> Otherwise, to join by phone, dial +1 216-930-9049 and enter this PIN: 476 563 227#

Note: Please review all addenda for changes to this schedule.

TABLE OF CONTENTS

DIVISION 1 - GENERAL REQUIREMENTS

District/BMT

011100 Summary
011216 Phasing of Work
012100 Allowances
012500 Substitution Procedures
012600 Contract Modification Procedures
012900 Payment Procedures
012973 Schedule of Values
013100 Project Management and Coordination 013130
PMIS
013119 Progress Meetings
013210 Construction Schedule
013233 Photographic Documentation
013300 Submittal Procedures
013527 Site Safety
014000 Quality Requirements
015000 Construction Facilities and Temporary Controls
016010 Materials and Equipment
017000 Execution Requirements
017417 Cleaning and Site Appearance
017419 Construction Waste Management
017700 Closeout Procedures
017823 Operation and Maintenance Data
017836 Warranties
017839 Project Record Documents
017900 Demonstration and Training

END OF TABLE OF CONTENTS

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work under separate contracts.
5. Owner-furnished products.
6. Access to site.
7. Coordination with occupants.
8. Work restrictions.
9. Specification and drawing conventions.

- B. Related Section:

1. Division 1 Section "Construction Facilities and Temporary Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.03 PROJECT INFORMATION

- A. Project Identification: Site Improvements at Bennett Kew

1. Project Location: 11710 S Cherry Ave, Inglewood, CA 90303.

- B. Owner: Inglewood Unified School District, 401 S. Inglewood Ave., Inglewood, CA 90301. P: (310) 419-2700

- C. Owner's Representative: Noel DeCastro, Program Director – Bond Management Team (BMT). Phone: (310) 357-3393

- D. Architect: HED Architects.

1. Architect's representative: Bill McCarthy.

1.04 WORK COVERED BY CONTRACT DOCUMENTS

- A. The furnishing of all labor, materials, equipment, services, and incidentals necessary for Work of Site Improvements at Bennett Kew located at 11710 S Cherry Ave, Inglewood, CA 90303, as set forth in the Construction Documents which include, but are not limited to, the Drawings, Addenda and Specifications.
- B. Type of Contract
 - 1. Project will be constructed under a single prime contract.

1.05 PHASED CONSTRUCTION

- A. The Work may require to be completed in multiple phases so as not to disrupt current operations as outlined in the general conditions.

1.06 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.07 OWNER-FURNISHED, CONTRACTOR - INSTALLED PRODUCTS

- A. Equipment and fixtures noted in the drawings as OFCI.
- B. For existing O.F.C.I. (Owner Furnished Contractor Installed) equipment: Contractor is responsible for the relocation of the existing equipment from it's original location, including the work to uninstall the equipment, remove anchorage, etc. When relocating the existing equipment in it's new location, the DBE shall install/ attach the equipment to match how it was placed or attached in it's previous condition to achieve the district's intended use for the equipment.

1.08 ACCESS TO SITE

- A. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated. Contractor to coordinate with the BMT on site access.
 - 1. Limits: Confine construction operations to areas indicated on Drawings.
 - 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations and prevent disruption to the District, especially during exam times.

- b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- c. All deliveries through public spaces, including parking lots, should be escorted to and from the site by two (2) flag men at the front and rear of the vehicle.

B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.

1.10 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner shall have access to the site and adjacent building(s) during the entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

- 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
- 2. Notify the Owner not less than **72 hours** in advance of activities that will affect Owner's operations. Refer to the General Conditions for a list of notification time-frames.

B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

- 1. Architect/BMT will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 - a. Certificate of Substantial Completion to be sent through the forms tool in Procore
- 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
- 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational and required tests, inspections and commissioning shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
- 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.9 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction. DBE to be especially aware to the Districts academic calendar and ensure no disruption to exam times or any other special events by the District, times and dates for which have not yet been identified.
 - B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, except as otherwise indicated.
 - C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Construction Manager no less than a minimum two (2) weeks of proposed utility interruptions.
 2. Obtain Construction Manager's written permission before proceeding with utility interruptions.
 3. All Utilities cutovers should be performed after-hours or during weekends, unless otherwise indicated.
 - D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Construction Manager no less than a minimum one (1) week in advance of proposed disruptive operations.
 2. Obtain Construction Manager's written permission before proceeding with disruptive operations.
 - E. Nonsmoking Building: Smoking is not permitted within the construction site building or on campus.
 - F. Controlled Substances: Use of tobacco products and other controlled substances on the College Campus is not permitted.
 - G. Employee Identification: Provide identification tags for DBE personnel working on the Project site. Require personnel to utilize identification tags at all times.
 - H. Employee Screening: Comply with Owner's requirements regarding drugs and Background screening of DBE personnel working on the Project site.
 1. Maintain list of approved screened personnel with Owner's Representative.
- 1.10 SPECIFICATION AND DRAWING CONVENTIONS
- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 1 General Requirements: Requirements of Sections in Division 1 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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SECTION 011216 – PHASING OF THE WORK

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Requirements for phasing of the Work include logistics, phasing, and completion of designated phases prior to commencement of subsequent phases.

1.02 RELATED SECTIONS

- A. Section 011100: Summary of Work
- B. Section 013100: Project Management and Coordination
- C. Section 013210: Construction Schedule
- D. Section 013300: Submittal Procedures
- E. Section 015000: Construction Facilities and Temporary Controls
- F. Section 017700: Closeout Procedures
- B.

1.03 SUBMITTALS

- A. Contractor shall submit a Project site logistics plans in accordance with and as required by this Section.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 LOGISTICS

- A. Prior to commencement of the Work, Contractor shall prepare and submit, through Procore, to the District Representative, a detailed Project site logistic plan, in the same size and scale of the Drawings, setting forth Contractor plan of the Work relative to the following, but not limited to, items:
 - 1. In accordance with local ordinances a truck access route to and from the Project
 - 2. The identification of any overhead wire restrictions for power, street lighting, signal, and/or cable.
 - 3. Local sidewalk access and street closure requirements.
 - 4. Protection of sidewalk pedestrians and vehicular traffic.
 - 5. Project site fencing and access gate locations.
 - 6. Construction parking.
 - 7. Material staging and/or delivery areas.
 - 8. Material storage areas.

9. Temporary trailer locations.
10. Temporary service location and proposed routing of all temporary utilities.
11. Location of temporary and/or accessible fire protection.
12. Trash removal and location of dumpsters.
13. Concrete pumping locations.
14. Crane locations.
15. Location of portable sanitary facilities.
16. Mixer truck wash out locations.
17. Traffic control signage.
18. Perimeter and site lighting.
19. Stockpile and/or lay down areas.
20. Emergency Vehicle Access Routes

- B. A revised Project site logistic plan may be required by the District Representative for separately identified phases of file Work as set forth in this Section.
- C. Contractor is responsible for securing and/or obtaining all approvals and permits from authorities having jurisdiction relative to logistic plan activities.

3.02 PHASING OF THE WORK:

- A. Project will be constructed in separate Milestone increments, as identified or as described in this Section and/or the Contract Documents. Phasing will also delineate Work to be completed in each designated phase. Unless otherwise approved or directed by the District Representative, each phase shall be completed according to the approved Construction Schedule prior to the commencement of the next subsequent phase. Contractor shall incorporate and coordinate the Work of Separate Work Contracts relative to this Project into the Phasing and Construction Schedule.
- B. Contractor shall install all necessary Work for phased Work before completion of the designated phase.

3.03 PHASING OF THE WORK – GENERAL:

- A. Contractor shall prepare the Milestone Schedule in order to complete the Work and related activities in accordance with the phasing plan. Contractor shall include all costs to complete all Work within the Milestones and/or Contract Time.
- B. Owner will be seriously damaged by not having all Work completed within the Milestones and/or Contract Time. It is mandatory the Work be complete within the Milestones and/or Contract Contractor shall install all necessary Work for phased Work before completion of the designated phase.

END OF SECTION 011216

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. An Allowance has been established for conditions that may be encountered during the course of Construction.
- B. Related Sections:
 - 1. Divisions 2 through 33 Sections for items of Work covered by allowances.

1.3 SUBMITTALS

- A. Submit proposals for proposed changes designated as allowances, in the format specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 ALLOWANCE COST PROPOSALS

- A. Allowance cost proposals shall include cost to Contractor of specific products and materials ordered by District or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's cost proposals shall be inclusive of all material and labor, overhead and profit, and other costs, as included in the General Conditions for Change Orders.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No.1: Lump-Sum Allowance: Include the sum of \$650,000 for unforeseen conditions including, but not limited to, abandoned or active utility lines, irrigation lines, etc., not shown in record drawings, or any item determined by the District at their discretion. This Allowance is strictly to be used at the District discretion and should not be consider part of the Contractors basic services.
 - 1. This allowance includes material cost, receiving, handling, and installation, and Contractor overhead and profit.

END OF SECTION 012100

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Sections:
 - 1. Division 1 Section "Allowances" for products selected under an allowance.
 - 2. Division 1 Section "Alternates" for products selected under an alternate.
 - 3. Division 1 Section "Materials and Equipment" for requirements for submitting comparable product submittals for products by listed manufacturers.
 - 4. Divisions 2 through 33 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or District that are not required in order to meet other Project requirements but may offer advantage to Contractor or District.

1.4 SUBMITTALS

- A. Product Substitution Submittal: Submit request for consideration of each product to be substituted. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Submittal Form: Use CSI Form 13.1A or Contractor's comparable form.
 - 2. Substitution Submittal to be sent through Procore
 - 3. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

- a. Statement indicating why specified products, fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by District and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and Districts.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES or another model code organization acceptable to authorities having jurisdiction.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, is compatible with related materials, and is appropriate for applications indicated.
 - m. 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.
4. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a product substitution submittal. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of submittal, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.
 - 1. Contractor is responsible for providing products and construction methods compatible with products and construction methods previously selected.
 - 2. If a dispute arises over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PROCEDURES

- A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit product substitution submittal immediately upon discovery of need for change, but not later than thirty-five 35 days following the date of the District's Award of Contract to the Contractor by action of the Board of Trustee's.
 - 1. Conditions: Architect will consider Contractor's product substitution submittal when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Substitute product offers District a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities District must assume. District's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by District, and similar considerations.
 - b. Substitute product is consistent with the Contract Documents and will produce indicated results.
 - 1) Use of proposed product does not require revisions to the Contract Documents.
 - c. Product substitution submittal is fully documented and properly submitted.
 - 1) Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

- 2) List of similar installations for completed projects with project names and addresses and names and addresses of architects and Districts, if requested.
 - 3) Samples, if requested.
 - d. Use of proposed product will not adversely affect Contractor's construction schedule.
 - e. Substitute product has received necessary approvals of authorities having jurisdiction.
 - f. Substitute product is compatible with other portions of the Work.
 - g. Use of proposed product has been coordinated with other portions of the Work.
 - h. Substitute product provides specified warranty.
 - i. If use of proposed product involves more than one contractor, use of proposed product has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider product substitution submittals if received within 35 days after the Notice of Award unless otherwise indicated. Requests received after that time may be considered or rejected at discretion of Architect.
 1. Conditions: Architect will consider Contractor's product substitution submittal when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Substitute products offer District a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities District must assume. District's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by District, and similar considerations.
 - b. Substitute product is consistent with the Contract Documents and will produce indicated results.
 - 1) Use of proposed product does not require revisions to the Contract Documents.
 - c. Product substitution submittal is fully documented and properly submitted.
 - 1) Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 2) List of similar installations for completed projects with project names and addresses and names and addresses of architects and Districts, if requested.
 - 3) Samples, if requested.

Inglewood Unified School District – BID# 25.108 Site Improvements at Bennett Kew

- d. Use of proposed product will not adversely affect Contractor's construction schedule.
- e. Substitute product has received necessary approvals of authorities having jurisdiction.
- f. Substitute product is compatible with other portions of the Work.
- g. Use of proposed product has been coordinated with other portions of the Work.
- h. Substitute product provides specified warranty.
- i. If use of proposed product involves more than one contractor, use of proposed product has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections:
 - 1. Division 1 Section "Section 012500 - Substitution Procedures" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 ADDENDA

- A. Addenda shall be signed by Architect and approved by DSA.

1.4 MINOR CHANGES IN THE WORK

- A. Architect/BMT will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.5 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect /BMT will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. Request will be generated, and must be responded to, within Procore. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect /BMT are not instructions either to stop work in progress or to execute the proposed change.
 - 2. **Within 10 days**, unless indicated otherwise, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change. Refer to the General Conditions for additional requirements.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

- b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use CSI Form 13.6B "Proposal Worksheet Summary" and 13.6C "Proposal Worksheet Detail" or Contractor's comparable forms.
 - B. Contractor Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to the BMT and Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Division 1 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 - 7. Proposal Request Form: Use CSI Form 13.6A "Change Order Request (Proposal)" with attachments CSI Form 13.6B "Proposal Worksheet Summary" and 13.6C "Proposal Worksheet Detail" or Contractor's comparable forms.
- 1.6 ADMINISTRATIVE CHANGE ORDERS
- A. Allowance Adjustment: Refer to Division 1 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- 1.7 CHANGE ORDER PROCEDURES
- A. On Owner's approval of a Proposal Request, the BMT will issue a Change Order, through Procore, for signatures of Owner, Architect, and Contractor.
 - 1. Change Orders shall be signed by the Architect, Contractor, Owner and BMT.
 - 2. Previous change orders and change order execution status can be viewed within Procore

1.8 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: BMT may issue a Construction Change Directive, through Procore, to instruct the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections:
 - 1. Division 1 Section "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Division 1 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Division 1 Section "Construction Schedule" for administrative requirements governing the preparation and submittal of Contractor's Contractor schedule.
 - 4. Division 1 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of submittal schedule.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's Contractor schedule.
 - 1. Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Schedule of Values submittal to be sent through the
 - d. Items required to be indicated as separate activities in Contractor's Contractor schedule.

2. Submit the schedule of values to the BMT at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 3. Sub-schedules for Phased Work: If at any time the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
 4. Sub-schedules for Separate Elements of Work: Where the Contractor's Contractor schedule defines separate elements of the Work; provide sub-schedules showing values correlated with each element.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Name of IOR.
 - d. Name of BMT.
 - e. Project Number.
 - f. Contractor's name and address.
 - g. Date of submittal.
 2. Arrange schedule of values consistent with format of AIA Document G703.
 3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of Contract Sum.
 - a. Include separate line items under Contractor and principal subcontracts for project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
9. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate District payments or deposits, if any, and balance to be paid by Contractor.
10. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
11. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by District. A history of each payment application may be viewed within Procore.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between District and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
 1. Contractor shall provide a draft of the Payment Application on the 25th of the month proceeding the end of the period for review by BMT, the IOR and the Architect.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. BMT and Architect will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under District-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to District, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Materials previously stored and included in previous Applications for Payment.
 - b. Work completed for this Application utilizing previously stored materials.
 - c. Additional materials stored with this Application.
 - d. Total materials remaining stored, including materials with this Application.
- F. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit required waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. District reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to District.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of principal suppliers, fabricators, and subcontractors.
 2. Certified Schedule of Values.
 3. Contractor's Contractor schedule (preliminary if not final).
 4. Products list (preliminary if not final).
 5. Copies of building permits.
 6. Certificates of insurance and insurance policies.
 7. Performance and payment bonds.
 8. Data needed to acquire District's insurance.
 9. Construction Schedule
 10. Submittal Schedule (Design Schedule)
 11. Certified Payroll
 12. Storm Water Pollution Prevention Plan (SWPPP)
- I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for District occupancy of designated portions of the Work.
- J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Occupancy permits and similar approvals by authorities having jurisdiction over Work.
 3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 4. Updated final statement, accounting for final changes to the Contract Sum.
 5. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 6. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
 7. AIA Document G707, "Consent of Surety to Final Payment."
 8. Evidence that claims have been settled.
 9. Removal of temporary facilities and services.
 10. Testing, adjusting and balance records.
 11. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when District took possession of and assumed responsibility for corresponding elements of the Work.
 12. Start-up performance reports.
 13. District training and orientations.
 14. Operating and maintenance instruction manuals.
 15. Preliminary Warranties, guarantees and maintenance agreements
 16. Delivery of extra materials, products and/or stock.

Inglewood Unified School District – BID# 25.108 Site Improvements at Bennett Kew

17. Final liquidated damages settlement statement.
18. Retention Escrow Deposit Request Form (if applicable)
19. Consent of Surety to Final Payment
20. Conditional Waiver and Release Upon Final Payment (Contractor/Subcontractor)
21. Unconditional Waiver and Release Upon Final Payment (Contractor/Subcontractor)
22. Notice of Project Completion & Recommendation of Acceptance (w/required attachments)
23. Final Punch List
24. Certification Re Insurance
25. Certification Re Satisfaction of Indebtedness
26. Guarantee Form
27. Asbestos and Other Hazardous Materials Certification
28. SWPPP and NPDES District Requirements for Maintenance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 012973 - SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Submit to the District, one (1) copy of an accurate and realistic Schedule of Values (Schedule) allocated to the various portions of the work, at least 15 days prior to the date of the Contractor's first application for payment. Submittal shall be completed through Procore.
- B. The Schedule of Values, unless objected to by the District, shall become the basis for the Contractor's application for payment.
 - 1. Upon request by the BMT, support values given with data that will substantiate their correctness.
 - 2. Payment for materials stored shall be limited to those materials approved by the BMT and is only at the District's discretion.
- C. Related requirements specified elsewhere.
 - 1. Project General Requirements.
 - 2. Construction Schedule, Section 013210.

1.02 FORM OF SUBMITTAL

- A. Identify schedule with:
 - 1. Title of project and location.
 - 2. Specification number.
 - 3. Name and address of Contractor.
 - 4. Date of submission.
- B. Schedule shall list the value of the component parts of work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Use the Construction Schedule (Section 013210) of the project specifications as a basis for the format for listing component items.
- D. List sub-values of major products or operations for each line item. Additional sub-values may be requested by the BMT.
- E. Costs for the various portions of the work:
 - 1. Each item shall include a directly proportion amount of the Contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored products, list the total installed value, including Contractor's overhead and profit.
- F. A similar detailed schedule, itemizing costs and/or credits in a form satisfactory to the BMT shall accompany all quotations for changes in the work or for extra work.

- G. Round off figures to nearest ten dollars whenever possible.
- H. The sum of all values listed in the schedule shall equal the total contract sum.
- I. Schedule of Values submittal to be sent through the Procore

1.03 REVIEW AND RESUBMITTAL

- A. After review by the BMT, revise and resubmit Schedule as required. Resubmit revised Schedule in same manner.
- B. Progress payments will not be made until Schedule has been approved.

END OF SECTION 012973

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Administrative and supervisory personnel.
 - 3. Coordination drawings.
 - 4. Requests for Information (RFIs).
 - 5. Project meetings.
- B. Related Sections:
 - 1. Division 1 Section "Construction Schedule" for preparing and submitting Contractor's construction schedule.
 - 2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.
 - 4. Division 1 Section "Electric Project Management Information System" for coordinating with District's Electronic Project Management Information System (PMIS).

1.3 DEFINITIONS

- A. RFI: Request from District, BMT, Architect, or Contractor seeking information from each other during construction.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for District and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
 9. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as District's property.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Execution: The mechanical subcontractor shall prepare ductwork fabrication drawings and BIM model for review and coordination with the architect and other design consultants, the electrical, plumbing, sprinkler and other relative subcontractors. Drawings shall be in sufficient detail to show overall ductwork dimensions, clearances, and relative locations of work in allotted spaces. Ductwork routing and sectional elevations shall be provided for congested areas. The mechanical subcontractor will disseminate the ductwork drawings and will

direct and expedite review by the various trades. Each trade shall indicate where conflicts or clearance problems exist for their work and subsequently seek resolution from the Architect/Engineer via General Contractor. Final coordinated drawings shall be produced by the mechanical subcontractor, who shall obtain approval for any changes to duct or pipe sizes and significant changes in routing. Electrical, sprinkler, and other relative subcontractors are required to participate in and cooperate fully with the coordination process.

a. The mechanical subcontractor to include the GC, District and Architect in BIM coordination meetings.

2. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

- a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
- b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
- c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
- d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
- e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
- f. Indicate required installation sequences.
- g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Construction Manager and the Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.

5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Construction Manager and Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Construction Manager and Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Construction Manager and Architect will so inform the Contractor, who shall make changes as directed and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Division 1 Section "Submittal Procedures."

1.6 KEY PERSONNEL

- A. Key Personnel Names: Within **15 days** of starting construction operations, submit, through Procore a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.7 REQUESTS FOR INFORMATION OR INTERPRETATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
 - 2. RFIs to be sent through Procore
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of BMT
 - 6. Name of Architect.
 - 7. RFI number, numbered sequentially.
 - 8. RFI subject.
 - 9. Specification Section number and title and related paragraphs, as appropriate.
 - 10. Drawing number and detail references, as appropriate.
 - 11. Field dimensions and conditions, as appropriate.
 - 12. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 13. Contractor's signature.
 - 14. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716, CSI Form 13.2A, or Contractor's comparable form. The Contractor is to use Procore for all RFI coordination, See General Conditions.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 - 1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify the BMT and Architect within seven days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Use CSI Log Form 13.2B or Contractor's comparable form. Include the following:
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify the BMT and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: The BMT will record significant conference discussions, agreements, and disagreements, including required corrective measures and actions. Distribute the meeting minutes to each party present, to parties who should have been present, and to other parties requiring information within three days of the meeting. Historical meeting data will be available through Procore.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to District, BMT and Architect.
 1. Conduct the conference to review responsibilities and personnel assignments.

2. Attendees: Authorized representatives of District, BMT, Architect, and their consultants; Contractor and its superintendent; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building(s).
 - n. Work restrictions.
 - o. Working hours.
 - p. District's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.
 - v. Office, work, and storage areas.
 - w. Equipment deliveries and priorities.
 - x. First aid.
 - y. Security.
 - z. Progress cleaning.
 4. Minutes: The BMT will record significant conference discussions, agreements, and disagreements, including required corrective measures and actions. Distribute the meeting minutes to each party present, to parties who should have been present, and to other parties requiring information of the meeting. Historical meeting data will be available through Procore.
- C. Pre-installation Conferences: The Contractor shall conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction, or prior to a new subcontractor is about to start on site, so their scope can be understood by all parties.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

- a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 3. Minutes: The Contractor is responsible for conducting meeting will record significant conference discussions, agreements, and disagreements, including required corrective measures and actions. Distribute the meeting minutes to each party present, to parties who should have been present, and to other parties requiring information within three days of the meeting. Historical meeting data will be available through Procore.
 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a Project closeout conference, at a time convenient to District, BMT, IOR and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of District, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.

- c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for demonstration and training.
 - f. Preparation of Contractor's punch list.
 - g. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - h. Submittal procedures.
 - i. District's partial occupancy requirements.
 - j. Installation of District's furniture, fixtures, and equipment.
 - k. Responsibility for removing temporary facilities and controls.
4. Minutes: The BMT will record significant conference discussions, agreements, and disagreements, including required corrective measures and actions. Distribute the meeting minutes to each party present, to parties who should have been present, and to other parties requiring information. Historical meeting data will be available through Procore.
- E. Progress Meetings: The BMT will conduct progress meetings at weekly intervals or at intervals approved by District.
- 1. Contractor shall coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of District, BMT, Project Inspector and Architect, each contractor, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.

- 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
4. Minutes: The BMT will record significant conference discussions, agreements, and disagreements, including required corrective measures and actions. Distribute the meeting minutes to each party present, to parties who should have been present, and to other parties requiring information of the meeting. Historical meeting data will be available through Procore.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013119 - PROGRESS MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

Scheduling and administration of progress meetings.

1.02 RELATED REQUIREMENTS

- A. Instructions to Bidders
- B. Project General Requirements
- C. Construction Schedules
- D. Shop Drawings, Product Data and Samples
- E. Quality Control
- F. Temporary Facilities

1.03 PROGRESS MEETINGS

- A. The CONTRACTOR will schedule Construction Progress Meetings, coordination meetings and pre-installation conferences throughout the progress of work. BMT will be responsible for the administrating and distributing meeting minutes from the weekly site meetings with the CONTRACTOR, but the CONTRACTOR is responsible to minute and distribute all other weekly subcontractor coordination and pre-installation meeting minutes.
- B. The BMT will set dates and times, make physical arrangements, prepare agenda and distribute notice of each meeting to Contractor, Architect, and Inspector of Record (IOR) in advance of or at meetings. Agenda, along with all historical meeting data, will be distributed through Procure.
- C. The BMT will preside at the weekly construction meeting with the CONTRACTOR; record minutes and distribute copies to participants.
- D. Location of meetings: Project's field office, Construction Site, or BMT's office.
- E. Attendance: BMT, IOR, Contractor or his authorized representative, and job superintendent, CONTRACTOR Architect. Subcontractors, suppliers and others shall attend as appropriate to agenda; Design Engineers and others shall attend when appropriate.
- F. Minimum Agenda:
 - 1. Approval of minutes of previous meetings.
 - 2. Review of work progress.
 - 3. Field observations, problems and decisions.

4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Review, maintenance, and adjustment of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.
14. Site safety.

END OF SECTION 013119

SECTION 013130 - ELECTRONIC PROJECT MANAGEMENT INFORMATION SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This Section is in addition to the Contract General Conditions.
- B. The Contractor shall be required to use the District's Electronic Project Management Information System (PMIS), Procore, for electronic construction management document control and communications between the District, Architect of Record, Inspector of Record, other project-related consultants, and Contractor. The system will be maintained and owned by the District but operated collaboratively by the Project Team.
- C. The PMIS will contain the following information available to the contractor and project team:
 - 1. Change Orders (CO) and Logs
 - 2. Construction Change Directives (CCD) and Logs
 - 3. Daily Reports
 - 4. Field Observations and Reports
 - 5. Final Completion
 - 6. Incident Reports and Logs
 - 7. Inspection Requests (IR) and Logs
 - 8. IOR Daily Reports
 - 9. Meeting Minutes
 - 10. Notices to Proceed (NTP)
 - 11. Payment Applications
 - 12. Potential Change Orders (PCO) and Logs
 - 13. Requests for Information (RFI) and Logs
 - 14. Submittals and Logs

15. Substantial Completion

16. Project FTP Site

17. Electronic Drawings, Sketches, and Architect's Supplemental Instructions (ASI)

18. Other Documentation as determined by the District's Representative.

D. All Daily Reports, Incident Reports, IRs, Payment Applications, PCOs, RFIs, and Submittals shall be submitted electronically, via the Procore Website. The District will NOT accept faxed and/or computer generated documentation and/or hand written documentation of these documents.

1. The Contractor shall be solely responsible for data entry via the Procore Website.
2. The Contractor shall be solely responsible for the scanning of sketches / drawings as necessary for the electronic submittal and attachment of required information.
3. The Contractor shall supply field personnel all necessary computer equipment required for electronic data entry.
4. Submittals shall be submitted via Procore, with hard copies provided per Section 013300 Submittal Procedures.

1.2 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor shall have sufficient computer(s) with capabilities to access the system at their on-site and off-site project offices. At the pre-construction meeting, the Contractor shall provide to the District's Representative the email address of all up to two-Contractor representative(s) that the Contractor designates to have access to the PMIS. This representative(s) shall have sufficient computer skills required to access the Internet, log on to the PMIS, and utilize the PMIS. The District shall provide training and technical support to the Contractor's personnel for use of the PMIS. The Contractor shall plan on an average of 4-hours training for the Contractor's representative(s) who will be using the system. Each representative shall complete the Procore Certification: Project Manager at GC (Project Management), and provide a copy of the completion certificate to BMT, prior to utilizing the PMIS. Having the above capability in place on-site is a condition precedent to processing the Contractor's first payment request.

1.3 OFFICIAL RECORDS

A. The documentation and records maintained on the PMIS will be the "Official Records" for the project. This documentation shall be the records for the adjudication of any and all disputes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013130

SECTION 013210 - CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Required procedures, preparation, submittals, reviews, updates, and revisions to the cost/schedule integrated construction schedule. The purpose of this section is to:
 - 1. Ensure adequate planning and execution of the Work by CONTRACTOR.
 - 2. Establish a standard against which satisfactory completion of the Project can be measured by DISTRICT.
 - 3. Assist CONTRACTOR and the BMT in monitoring progress.
 - 4. Aid in assessing the impact of any changes to the Contract.
 - 5. Provide justification for progress payments.

1.02 RELATED SECTIONS

- A. General and Special Conditions
- B. Section 012900: Payment Procedures
- C. Section 013100: Project Management and Coordination
- D. Section 013300: Submittal Procedures
- E. Section 012973: Schedule of Values
- F. Section 014523: Testing and Inspection
- G. Section 015000: Construction Facilities And Temporary Controls
- H. Section 017700: Closeout Procedures

PART 2 – PRODUCTS

2.01 SCHEDULING SOFTWARE

- A. CONTRACTOR shall utilize Primavera P6 software (latest version) by Primavera Systems, Inc., or equivalent scheduling software to employ the Critical Path Method (CPM) in the development and maintenance of the construction schedule network using the Precedence Diagram Mode (PDM). The scheduling software shall be capable of being resource loaded with manpower, costs and materials. It shall also be capable of generating time-scaled logic diagrams, resource histograms and profiles, bar charts, layouts and reports with any and/or all activity detail.

- B. All schedule calculation rules, auto cost rules and resource calculation rules shall be in a format acceptable to BMT. When schedule calculations are performed, the “Retained Logic” setting shall be used. CONTRACTOR shall use the zero (0) “Decimal Places” setting.

PART 3 – EXECUTION

3.01 SUBMITTALS

- A. CONTRACTOR shall retain a construction scheduler to work in enough capacity to perform all of the requirements outlined in this Section. CONTRACTOR shall submit, through Procore, a resume of the proposed Scheduler for review and acceptance prior to the preparation of any Schedule. The resume shall demonstrate the proposed scheduler’s capability to plan, coordinate, execute, and monitor a cost/resource loaded CPM schedule as required for this Project and have a minimum of five (5) years direct experience using Primavera P6. Scheduler will cooperate with BMT and shall be available on site for monitoring, maintaining and updating schedules in a timely manner. BMT has the right to refuse to accept the Scheduler based upon a lack of experience as required by this Section or based on lack of performance and timeliness of schedule submittals/fragnets on past projects. If the BMT does not accept the proposed Scheduler, CONTRACTOR shall within one (1) week of disapproval, propose another scheduler who meets the experience requirements stated above.
- B. CONTRACTOR shall submit, through Procore, the Preliminary Construction Schedule within 10 days after Notice to Proceed (NTP).
- C. CONTRACTOR shall submit, through Procore, the Proposed Baseline Schedule as required by the date stipulated in Section 013210-3.04.
- D. CONTRACTOR shall submit the Monthly Schedule Updates, Four-Week Rolling Schedules, and Recovery Schedules as required.

3.02 PRELIMINARY CONSTRUCTION SCHEDULE

- A. The purpose of the cost-loaded Preliminary Construction Schedule is to provide a mechanism in which to measure performance on individual activities and to validate the CONTRACTOR’S monthly Application for Payment on work performed (starting with month 1) during the first three months of the job until the complete Baseline Schedule is approved by the BMT.
- B. CONTRACTOR shall develop and submit, through Procore, a cost loaded Preliminary Construction Schedule as required by this Section. It shall be submitted in computer generated network format and shall be organized by Activity Codes representing the CONTRACTOR’S intended sequencing of the Work. CONTRACTOR shall set dates and times for working meetings with BMT to review the Preliminary Construction Schedule. The Preliminary Construction Schedule shall include activities for the first 90 calendar days following the NTP such as mobilization, preparation of submittals, specified review periods, procurement items, fabrication items, milestones, and detailed construction activities.

- C. Upon BMT's acceptance of the Preliminary Construction Schedule, CONTRACTOR shall update the accepted Preliminary Construction Schedule each month (beginning with month 1) and submit these updates until CONTRACTOR'S Baseline Schedule is fully developed and accepted. Since updates to Preliminary Construction Schedule are the basis for payment to CONTRACTOR during the first three-month period, submittal and acceptance of such updates shall be a condition precedent to making of monthly payment, as referenced in General Conditions.
- D. Provide a written narrative describing CONTRACTOR'S approach to mobilization, procurement, and construction during the first 90 calendar days including crew sizes, equipment and material delivery, site access, submittals, and permits.
- E. Submit Bar Charts, Tabular Reports, a Cost flow Histogram, Electronic Data, and Plots in accordance with Section 013210.

3.03 SCHEDULE OF VALUES

- A. CONTRACTOR shall cost load activities in the Preliminary Construction Schedule and allocate costs to the cost accounts of all activities. The cost accounts shall match the CSI subsections listed in the Table of Contents of the Specifications. The format shall be coordinated with Article 8.3 (Progress Payment).
- B. Submit a computer generated tabular report from the Preliminary Construction Schedule using the P6 scheduling software. The report shall contain the following data for each activity: Cost Account Number (by CSI subsection), Cost Account Description, Cost Account Budget, Cost to Date, Cost this Period, and Cost to complete. Total costs shall be organized and totaled by CSI subsection. This tabular report shall be the source of the data CONTRACTOR reports on the Schedule of Values.
- C. The cost loading associated with the activities shall be based on CONTRACTOR estimates of costs that CONTRACTOR will incur performing the specific activities. If BMT determines that the costs are front loaded and/or the distribution of costs is unreasonable, CONTRACTOR shall revise accordingly and resubmit the Schedule of Values within five (5) days for BMT's review.

3.04 BASELINE SCHEDULE CPM NETWORK

- A. Within thirty (30) days of the Notice to Proceed, CONTRACTOR shall submit, through Procore, a detailed Proposed Baseline Schedule that covers the entire duration of the Project. This schedule shall convey CONTRACTOR'S plan for organizing, managing, and executing the Work.

- B. The Proposed Baseline Schedule shall include activity descriptions, sequencing, logic relationships, duration estimates, cost loading by CSI subsection, resource loading, and other information as set forth in this Section.
1. The Proposed Baseline Schedule shall include all Milestones stipulated in General Conditions, as well as all activities required to achieve timely completion of the Milestones.
 2. The Proposed Baseline Schedule shall include activities for: all construction activities, the NTP, Milestones, submittals, coordination drawings, re-submittals, procurement of materials and equipment, manufacturing, fabrication & delivery, District furnished contractor installed items (OFCI), access restrictions, work restrictions, phased occupancy, testing, start-up, and contract closeout activities. The Proposed Baseline Schedule shall allow a period for BMT and ARCHITECT to review each submittal, as required by General Conditions Article 7.3 and other sections which require additional time for DISTRICT reviews and deferred submittal reviews by Division of State Architects (DSA).
 3. The Proposed Baseline Schedule shall include start and completion dates for: temporary facilities, construction of mock-ups, prototypes, samples, punch list, DISTRICT interfaces and furnishing of items, separate work contracts, regulatory agency approvals, and permits required for performance of the Work.
 4. The Proposed Baseline Schedule shall allow for all foreseeable factors and risks which affect performance of the Work. Include allowances for weather conditions, applicable laws, transportation, traffic, air quality, noise, or any other applicable regulatory requirements, regulations or collective bargaining agreements pertaining to labor.
 5. CONTRACTOR shall not use any float suppression techniques such as preferential sequencing or logic, special lead/lag constraints or unjustifiable over-estimating of activity durations in preparing the Proposed Baseline Schedule except that Finish No Later Than constraints are permitted for Milestones. No "Zero Free Float" constraints, No "Early" Constraints, and No "Mandatory Finish" constraints shall be utilized.
 6. The Proposed Baseline Schedule shall include activity durations based on the crew sizes and equipment utilization that CONTRACTOR will maintain during the Project. No activity durations shall exceed twenty (20) working days unless approved by the BMT. Non-construction activities such as procurement, fabrication, delivery, or submittal activities are exempted.
 7. CONTRACTOR shall include with the Proposed Baseline Schedule a written narrative report sufficiently comprehensive to explain the rationale behind CONTRACTOR'S approach to the Work including but not limited to: activity durations, manpower flow, average crew sizes, equipment requirements, production rates, constraints, holidays and other non-work

days, potential problem areas, permits, coordination with regulatory authorities, utilities, separate work contracts and other parties, and long lead delivery items requiring more than thirty (40) days from the date of order to delivery to the Project site.

- C. At the BMT request, furnish a detailed written explanation of CONTRACTOR'S basis for specific durations, logic, phasing, or other information. Such an explanation shall include CONTRACTOR'S rationale for selecting the number of crews, crew composition, number of shifts per day, number of hours in a shift, number of work days per week, construction equipment, and/or similar factors.
- D. The Proposed Baseline Schedule activities shall contain the following data:
 - 1. Activity ID numbers shall consist of no more than eight (8) alphanumeric characters. Following BMT acceptance of the Baseline Schedule, Activity ID numbers shall not be changed.
 - 2. Activity Descriptions shall provide adequate information that readily identifies each activity, work scope, and location.
 - 3. Activity codes specified in section 013210-3.04-G shall be applied to each activity.
 - 4. Cost accounts (in CSI subsection format) and Resource accounts shall be applied to each activity. They shall include lump sum costs, and man-hours/man-days (where applicable).
- E. At BMT's request, furnish a written explanation for each lead or lag relationship and each constrained date. Unjustifiable leads, lags, and constraints will result in BMT rejection of the Proposed Baseline Schedule.
- F. Calendar Identification: In the scheduling software, identify all activities that will require overtime shifts, double shifts, and work on weekends or holidays. Identify non-work days and holidays in the schedule calendar. All milestones stipulated in General Conditions shall be placed on a calendar with seven (7) days per week. No holiday or non work-day restrictions are permitted on this calendar.
- G. Activity Codes: As a minimum, the Activity Codes shown in the Table 1 below shall be assigned to each activity and/or be identifiable in the schedule Work Breakdown Structure (WBS).

Table 1

Name	Length	Description
TYPE	2	Type of activity (mobilization, submittals, procurement/fabrication, construction, milestones, etc.)
AREA	2	Area and/or Building (General Conditions, Site, Basement, 1 st Floor, 2 nd Floor, Site Work, Elevators, Roof, etc.)
RESP	7	Responsible Party (subcontractor and/or trade)
SPEC	6	CSI Division and Specification number for Schedule of Values

The BMT may require additional coding of activities. The mandatory activity code requirements listed in Table 1 are not to be construed as setting limits on CONTRACTOR'S management and coordination responsibilities, but are intended to guide CONTRACTOR in the administration of its contractual responsibilities.

- H. Milestones are designated dates as set forth in General Conditions in which Work or portions thereof are required to start and/or complete in accordance with the Contract Documents.
 - 1. Where the term completion or similar terms are used in regards to a Milestone, it shall be construed to mean all portions of the Work in the indicated phase, area, and/or zone are complete and acceptable to BMT. Where the term start or similar terms are used in the designation of a Milestone, it shall be construed to mean a portion of the Work in the indicated phase, area, and/or zone is required to be commenced.
 - 2. A Proposed Baseline Schedule extending beyond the Milestones and/or Contract Time will not be acceptable.
 - 3. Finish Milestones shall be constrained with Late Finish (Finish No Later Than) type constraints in accordance with the dates stipulated in General Conditions.
 - 4. In the scheduling software, in the "Project Overview" menu, assign the "Finish on or Before" " date to match the Substantial Completion and Contract Completion Milestone dates stipulated in General Conditions.
 - 5. A Proposed Baseline Schedule indicating Work completed in less time than the Milestones and/or Contract Time will not be acceptable. Rather, CONTRACTOR shall show any unused contract time as float.
 - 6. Milestones shall be placed on a calendar with seven (7) days per week No Holiday or non work-day restrictions are permitted on this calendar.
 - 7. Schedule shall also include work milestone activities including, but not limited to: Demolition Complete, Foundation Complete, Sitework Complete, Elevator Complete, Building Weather Tight, Electrical Equipment Energized, Basement Complete,
- I. The Critical Path shall be clearly indicated on all schedules submitted. An activity is defined as critical when its Total Float is less than or equal to zero (0) days. The critical path is defined as the longest path.

- J. CONTRACTOR shall allow for inclement weather in the Proposed Baseline Schedule by incorporating an activity titled "Rain Day Impact Allowance" as the last activity prior to the Substantial Completion Milestone. No other activities may be concurrent with it. The duration of the Rain Day Impact Allowance activity will be based on Table #2 below, and will be calculated from the Notice to Proceed until the original date of Substantial Completion.

Table 2: Cumulative Calendar Days "Rain Day Impact Allowance": This Project will have a total of twenty (20) Rain days for the duration of the Construction.

When inclement weather at the Project site impacts Critical Path activities, CONTRACTOR may provide the BMT with a written request for a weather impact day describing the inclement weather delay on the Critical Path activities. The inclement weather delay must be clearly indicated by a 70% decrease in the field labor workforce hours on Critical Path activities on the day in question as indicated by CONTRACTOR'S Daily reports from the day in question and the scheduled work days prior to the day in question. Upon the BMT's independent confirmation of the amount of rainfall and impact, BMT will authorize CONTRACTOR to reduce the duration of the Rain Day Impact Allowance by one (1) day.

Inclement weather on non-scheduled workdays shall not be granted as weather impact days. If CONTRACTOR asks to work a specific weekend or holiday and gives BMT advanced, written notification of critical path work to be performed and a substantial amount of precipitation occurs that prevents the work from being performed, then that day can be claimed as a weather impact day. If the effects of inclement weather from a non-scheduled work day carry forward to a scheduled work day and impacts the Critical Path as noted above, then the scheduled work day will be considered impacted by weather. Any unused rain day allowance at the end of the project will be shown as available float to the Substantial Completion Milestone. Excusable, non-compensable time extensions will be granted for inclement weather to Substantial Completion milestone only after the weather impact area affecting the critical path work has exhausted the allotted cumulative Rain Day Impact Allowance.

- K. Cost loaded Activities:

1. Each activity included in the Proposed Baseline Schedule shall be assigned the cost CONTRACTOR estimates it will incur performing that activity. Each activity's assigned cost will be inclusive of overhead and profit so CONTRACTOR'S total overhead and profit is distributed over all activities on a pro rata basis. The sum of the costs assigned to activities shall equal the total contract value. No activity costs shall be assigned to manufacturing or delivery activities unless approved by BMT. If the BMT finds that the costs are front loaded and the distribution of costs is unreasonable, CONTRACTOR shall re-distribute the costs and resubmit the revised Schedule of Values within five (5) days for The BMT back check.
2. CONTRACTOR shall cost load activities in the Proposed Baseline Schedule and allocate costs to related resource/cost accounts associated with each activity. The cost accounts shall match the CSI subsections

listed in the Table of Contents of the Specifications. All cost-loaded activities shall roll-up to their designated CSI subsections and shall be the basis for the data reported in the Schedule of Values.

3. Submit computer generated tabular reports using the scheduling software which will be the basis for the approved Schedule of Values. The reports shall contain the following data for each activity: Cost/Resource Account Number (by CSI subsection), Cost/Resource Account Description, Cost/Resource Account Budget, Material Quantities and Unit Costs, Cumulative Quantities and Cost to Date, Material Quantities and Cost this Period, and Estimated Material Quantities and Cost at Completion. Total Material Quantities and Total Costs shall be organized and totaled by CSI subsection.
 4. Submit a Cost Flow Histogram in accordance with specification Section 013210, 3.04-L-3.
- L. CONTRACTOR shall submit computer generated reports and plots with the Proposed Baseline Schedule submittal package. Format shall display the following columns: Activity ID, Activity Description, Original Duration, Remaining Duration, Percent Complete, Early Start, Early Finish, Late Start, Late Finish, and Total Float.
1. Bar charts shall be generated separately for:
 - a. Milestones only.
 - b. All activities sorted by Early Start date and organized by Project, Area, Stage, & Sub-stage. (The network shall show continuous flow of all activities from left to right).
 - c. All activities sorted by Responsibility.
 - d. Summary level of all activities sorted by craft/trade and area.
 2. Tabular Reports:
 - a. Total Float sorted low to high.
 - b. Predecessors and Successors sorted by Activity ID.
 3. Cost Flow Histogram
 - a. Using the costs assigned to each activity, develop a Histogram that projects the estimated invoice amounts by month for the Project duration. The histogram shall be produced from the scheduling software on 11x17 size paper (landscape mode). It shall contain both a monthly bar histogram and a cumulative cost curve on the same graph. The Total Costs shall be based on the Early Dates option.

4. Man Power Histogram

- a. Submit a planned man-power graphic bar histogram produced from the scheduling software on 11x17 size paper (landscape mode) that displays total man-hours based on Early Dates. Show both a weekly bar histogram and a cumulative curve on same graph. Upon the Construction Manger request, provide manpower broken down by trade.

5. Provide a written narrative as required by Section 013210-3.04-B-7.

6. Electronic data: Provide electronic P6 files in “.XER” type format.

M. BMT will notify CONTRACTOR of any adjustments that are required for the Proposed Baseline Schedule to be accepted. CONTRACTOR shall perform any required adjustments to the Proposed Baseline Schedule and resubmit it for acceptance certifying in writing that all information contained therein complies with the Contract Documents. The BMT will review the Proposed Baseline Schedule for accuracy, reasonableness, and conformance with the Contract Documents and shall provide comments within ten (10) days of receipt. Within five (5) days after receiving BMT comments, CONTRACTOR shall both incorporate changes to address BMT concerns and resubmit the Proposed Baseline Schedule for BMT back-check. This process will continue until the Proposed Baseline Schedule is accepted as the Baseline Schedule. Once accepted by Construction Manger, the Baseline Schedule will be the basis upon which CONTRACTOR shall prepare updates that record and report actual performance and progress. The accepted Baseline Schedule and subsequent Monthly Updates (reference Section 013210 – 3.04 and 3.05 respectively) shall be the basis for consideration and analysis of requests for time extensions and CONTRACTOR progress payments.

N. BMT acceptance of the Baseline Schedule or CONTRACTOR’S failure to identify and/or include any element of the Contract, shall not release CONTRACTOR’S obligation to complete all required Work in accordance with the Contract Documents.

3.05 REQUIREMENTS FOR MONTHLY/WEEKLY SCHEDULE UPDATING

A. Once the Baseline Schedule is accepted by BMT, CONTRACTOR shall submit Monthly Schedule Updates beginning with month No. 1. The current month’s schedule update cannot be accepted until the previous Monthly Schedule Update has been accepted by BMT.

B. Monthly Schedule Update Format

1. Initially, the Contractor shall status a current Monthly Schedule Update with actual Work progress only. No logic ties shall be modified. Status all Actual Start and Finish dates, adjust Remaining Durations where needed, and update Percent Completion of cost and resource loaded activities. No activity Original Durations or Logic shall be changed unless authorized by BMT. No new activities shall be added unless authorized by the BMT.

2. Once the schedule is status in accordance with Section 013210-3.05-B1, CONTRACTOR shall print (and submit with Monthly Schedule Update) a report of “out-of-sequence” logic that results from the updating process. CONTRACTOR shall then correct all “out-of-sequence” logic to reflect CONTRACTOR’S actual Work sequence. If CONTRACTOR chooses to modify logic or add activities (other than out-of-sequence corrections), it shall be done in accordance with Section 013210-3.07 (Fragnets & Time Extensions Request).
3. During construction, CONTRACTOR may desire to break down specific activities into greater detail. If greater detail is necessary, then CONTRACTOR shall identify expanded activities such that the Baseline Schedule activities that the expanded activities originated from are readily apparent. CONTRACTOR shall not allow the aggregate duration of the expanded activities to exceed the duration assigned to the Baseline Schedule activity unless permitted by BMT in writing.
4. Autocost rules shall link Remaining Duration and Percent Complete.
5. The Data Date for the Monthly Schedule Updates shall be the last day of the month. At a minimum, three (3) days prior to the submission of the Monthly Schedule Update, CONTRACTOR shall meet in person with BMT to present the proposed Percentages of Completion and Actual Start and Actual Finish dates. Once percentages of completion and actual dates have been agreed to, they shall be the basis of the Monthly Schedule Update.
6. CONTRACTOR shall submit a Manpower Histogram that overlays a planned curve from the Baseline Schedule and a planned curve from the current Monthly Schedule Update.
7. Written Narrative Report: CONTRACTOR shall include a written report to explain the Monthly Schedule Update. The narrative shall, at a minimum include the following headings with appropriate discussions of each topic:
 - a. Introduction
 - b. A Summary of Work which was on-going This Pay Period
 - c. Problem Areas and Proposed Solutions
 - d. Critical Path
 - e. Current and Anticipated Delays
 - f. Coordination of Work with Others
 - g. Milestone Status
8. In updating the Schedule, CONTRACTOR shall not modify Activity ID numbers, schedule calculation rules/criteria, or the Activity Coding Structure required.

9. Submit bar charts, tabular reports, a cost flow histogram, man-power histogram, written narrative, electronic data, and plots in accordance with Specification Section 013210-3.04-L.
 10. Submit a cost-loaded report (progressed monthly) produced from the scheduling software that displays all of the activities organized by the CSI subsection cost/resource accounts. This report shall be in compliance with Section 013210-3.04-K, Section 012973 (Schedule of Values) and Section 012900 (Payment Procedures).
- C. Three-Week Look Ahead Schedule: At each Weekly Progress Meeting, CONTRACTOR shall present a Three-Week Schedule in Bar Chart format. It shall show one (1) week of actual and three (3) weeks of forecasted progress. The Three-Week Rolling Schedule shall be used as a basis for discussing progress and work planned during the three (3) weeks.
1. The Three-Week Look Ahead Schedule shall be based on the most recent BMT Accepted Monthly Schedule Update. It shall include weekly updates to all construction, submittal, fabrication/procurement, and separate work contract activities. CONTRACTOR shall ensure that it accurately reflects the current progress of the Work.
 2. CONTRACTOR shall discuss actual dates and any variances to critical or near critical activities.
 3. Upon request by Construction Manager, CONTRACTOR shall provide the Three-Week Look Ahead Schedule in electronic format.
 4. If the Three-Week Look Ahead Schedule indicates activities are behind schedule, CONTRACTOR shall provide a Recovery Schedule in accordance with Section 013210-3.06.

3.06 RECOVERY SCHEDULES

- A. If a Monthly Schedule Update indicates negative float greater than ten (10) days on a critical path as result of events not predicated by Article 7.4 of the General Conditions CONTRACTOR shall prepare a Proposed Recovery Schedule demonstrating CONTRACTOR'S plan to regain the time lost. The Recovery Schedule shall be submitted either in advance of or concurrent with the Monthly Schedule Update and CONTRACTOR progress request. Both the Monthly Schedule Update and the Proposed Recovery Schedule shall be based on the same percentages of completion and actual dates accepted by BMT under Section 013210 – 3.05 B (Monthly Schedule Update Format).
- B. The Proposed Recovery Schedule shall be based on a copy of the Monthly Schedule Update for the calendar month during which the negative float first appears.
- C. The Proposed Recovery Schedule shall include a narrative that identifies the causes of the negative float on the critical path and provides CONTRACTOR'S proposed corrective action to ensure timely completion of all Milestones and the Substantial Completion Date. CONTRACTOR'S corrective actions shall include

but are not limited to increasing concurrent operations, increasing labor, adding multiple shifts in a 24-hour period, and adding overtime.

- D. During any period of time when CONTRACTOR is found to be behind schedule by BMT, the Monthly Schedule Update described in Section 013210 – 3.05 shall become a weekly requirement to provide a greater degree of focus on the timely completion of the Work. These Updates shall be submitted to BMT every Monday morning. When CONTRACTOR is deemed by the BMT to be back on schedule, CONTRACTOR may revert to submitting the schedule monthly.
- E. CONTRACTOR'S progress payment may not be processed until the BMT accepts the Proposed Recovery Schedule. Following such an acceptance, the Proposed Recovery Schedule will be known as the Recovery Schedule and future Work will be performed by CONTRACTOR in accordance with it.

3.07 FRAGNETS & TIME EXTENSION REQUESTS

- A. Float is not for exclusive use or benefit of either DISTRICT or CONTRACTOR but is an expiring resource available to both parties on a non-discriminatory basis. If required to meet specified Milestones, either party may utilize float. Adjustments to Milestones and/or Contract Time will only be authorized by Change Order and only to the extent the claimed adjustments exceed total float along the most critical path of the current Monthly Schedule Update in effect at the time of the claimed adjustments. The claimed adjustments to the Milestones and/or Contract Time must also cause the Substantial Completion Date to exceed that currently indicated in the Monthly Schedule Update. CONTRACTOR claimed adjustments to an existing negative float path will not receive consideration until the activity with the highest negative float is driven even further negative.

Claimed adjustments to the Milestones and/or Contract Time will be administered in conjunction with those set forth in the General Conditions.

- B. Pursuant to the float sharing requirements of this Section, the use of float suppression techniques such as preferential sequencing or logic, special lead / lag logic restraints, and extended activity times or durations are prohibited. The use of float time disclosed or implied by the use of alternate float suppression techniques shall be proportionally shared to benefit DISTRICT and CONTRACTOR. The use of any technique solely for the purpose of suppressing float will result in DISTRICT rejection of the submitted Monthly Schedule Update.
- C. In the event CONTRACTOR believes the Project has suffered an adverse impact arising from events predicated by Article 7.4 of the General Conditions, CONTRACTOR may prepare a Time Extension Request by submitting a Schedule Fragnet and a written narrative outlining the detail of the impact. A Schedule Fragnet must demonstrate a critical path delay. Such a delay must adversely impact the Substantial Completion Date for CONTRACTOR to receive a time extension. To demonstrate such an impact successfully, CONTRACTOR shall prepare a Schedule Fragnet based on a copy of DISTRICT accepted Monthly Schedule Update for the calendar month during which the adverse impact occurred. This "copy" of the DISTRICT accepted Monthly Schedule Update shall however first be updated (by DISTRICT and CONTRACTOR jointly)

with both Percentages of Completion and Actual Dates up to the day the delay commenced. This process will provide the “pre-delay” project status. Once DISTRICT and CONTRACTOR have agreed to the “pre-delay” project status, CONTRACTOR should make a copy of this “pre-delay” schedule and this copy is to be the starting point for CONTRACTOR’S Schedule Fragnet development. DISTRICT will evaluate the activities, logic, durations, etc... in the Schedule Fragnet and will evaluate if the adverse impact arose from events described by Article 7.4 of the General Conditions. The Fragnet shall also include CONTRACTOR-caused delays that affect the critical or near critical path in the network and should be accounted for in the Time Impact Analysis if overlapped at any point in time with DISTRICT-caused delay. If rain impact days were granted between the Start and Finish of DISTRICT-caused delay period, they should be accounted for in the Time Impact Analysis as well. Provided DISTRICT determines such an impact occurred, CONTRACTOR may be due a time extension equal to the number of proportioned days of variance/delay that resulted to the Substantial Completion Date.

- D. All activities added into a Schedule Fragnet to demonstrate the impact of adverse event shall be assigned a unique activity code. The Schedule shall be organized by this unique activity code.
- E. The Schedule Fragnet shall incorporate logic that accurately ties reflective of the adverse event to pre-event predecessor activities and post event successor activities.
- F The format and components of a Schedule Fragnet submittal shall be in accordance with Section 013210 and Article 7.4 of the General Conditions. It is crucial for the Fragnet to be submitted within the same month of discovery so it can be resolved during the monthly schedule update review. The notice shall be transmitted to BMT within the stipulations outlined in Article 9 of the General Conditions.
- G. If DISTRICT accepts CONTRACTOR’S Schedule Fragnet and an extension is granted, a Change Order will be prepared. DISTRICT will advise what change order number the time extension will become. When CONTRACTOR receives this Change Order number, all the activities added to the Schedule Fragnet shall be given Activity Identification Numbers that corresponds with the Change Order number. CONTRACTOR shall cost load and resource-load the activities if required by DISTRICT. If resource loading is required, the resource loading shall include a breakdown of labor, material, and equipment quantities.
- H. If DISTRICT rejects CONTRACTOR’S Schedule Fragnet in part based on improper forecast logic or activity tasks then it shall be revised accordingly to conform to the DISTRICT’S review comments and resubmitted. If the forecast logic and activity tasks cannot be agreed to then the pre-delay schedule outlined in Section 013210-3.07-C shall be compared to the actual as-built data in the succeeding month of the encountering issue, event, condition, circumstance, and/or cause. The variance to the project between the pre-delay and post delay schedules shall be discussed in CONTRACTOR’S written narrative and proportioned between the different parties involved in the delay.

- I. If DISTRICT rejects CONTRACTOR'S Schedule Fragnet in whole then CONTRACTOR may follow the procedures set forth in Article 16 of the General Conditions.

3.08 PAYMENT FOR SCHEDULING

- A. The Work in Section 013210 will be included as part of the bid price.
- B. Preparation, revising, maintenance, and compliance with Section 013210 is an integral part of the Contract Documents and is specified to have a minimum value equal to 2% of the original Contract Amount or \$150,000, whichever is less. This amount shall be cost loaded into an activity titled "Construction Schedule" in both the Proposed Baseline Schedule and the Schedule of Values described in Section 012973.
 1. CONTRACTOR may bill twenty percent (20%) of the amount cost- loaded in the "Construction Schedule" activity when the BMT accepts the Proposed Baseline Schedule as the Baseline Schedule.
 2. The remaining eighty percent (80%) may be billed in equal monthly increments. The amount of those increments is determined by dividing the remainder of the amount cost-loaded in the "Construction Schedule" activity divided by the total number of months in the Contract Time. Payment of these incremental amounts is contingent upon BMT acceptance of CONTRACTOR Monthly Schedule Updates, Recovery Schedules, Three-Week Look Ahead Schedule and the updated Log of Required Submittals.

3.09 FAILURE TO COMPLY WITH REQUIREMENTS

- A. At any time during the project if CONTRACTOR fails to comply with the specified requirements, DISTRICT reserves the right to engage independent estimating and/or scheduling consultants to fulfill these requirements. Upon notice to CONTRACTOR, DISTRICT shall assess against CONTRACTOR, all incurred costs for these additional services.
- B. In such an event, DISTRICT will require, and CONTRACTOR shall participate and provide all requested and/or required information to ensure the resulting Milestones Schedule accurately reflects CONTRACTOR plan to execute the Work in compliance with the Contract Documents. If it becomes necessary for DISTRICT to recommend logic and/or duration revisions as a result of CONTRACTOR failure to furnish acceptable data, and if CONTRACTOR has objections to the recommendations, CONTRACTOR shall provide notice to DISTRICT within three (3) days and CONTRACTOR shall provide an acceptable alternate plan. If CONTRACTOR fails to so note any objections and provide an acceptable alternate plan, or if CONTRACTOR implements the recommendations of DISTRICT without so noting any objections, CONTRACTOR will be deemed to have waived all objections and concurred with the recommended logic/duration revisions provided by ARCHITECT and/or DISTRICT.

- C. Submittal of any Monthly Schedule Updates is subject to review and acceptance by DISTRICT. DISTRICT retains the right, including, but not limited to Article 8 of the General Conditions, to withhold progress payments in whole or part until CONTRACTOR submits a Monthly Schedule Update acceptable to DISTRICT.

3.10 CONTRACTOR RESPONSIBILITY

- A. Nothing in this Section shall be construed to be a usurpation of CONTRACTOR authority, responsibility, and obligation to plan and schedule Work as CONTRACTOR deems necessary, subject to all other requirements of the Contract Documents.
- B. CONTRACTOR shall involve the subcontractors, manufacturers, and suppliers in the development and periodic updating of the schedule.

3.11 RECORD DOCUMENTS

- A. Prior to Contract Completion of the Work, CONTRACTOR shall submit, through Procore, an as-built time-scaled network diagram reflecting the actual dates of all activities.

END OF SECTION 013210

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Preconstruction videos.
 - 4. Periodic construction videos.
- B. Related Sections include the following:
 - 1. Division 1 Section "Submittal Procedures" for submitting photographic documentation.
 - 2. Division 2 Section "Selective Demolition" for photographic documentation before selective demolition operations commence.
 - 3. Division 1 Section "Demonstration and Training" for submitting videos of demonstration of equipment and training of District's personnel.

1.3 SUBMITTALS

- A. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.
 - 1. Format: Submit a complete set of digital image electronic files with each submittal of prints on CD-ROM, or other electronic storage device. All photos shall be uploaded to Procore within the Contractor's Photographs folder. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, un-cropped. Pictures within the CD-ROM should have reference to the following information.
 - a. Name of Project.
 - b. Name of Construction Manager.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier.

- B. Digital Video: Submit two copies of each digital video with protective sleeve or case within seven days of recording. Remove safety tab to prevent accidental re-recording.
 - 1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Construction Manager.
 - d. Name of Architect.
 - e. Name of Contractor.
 - f. Date video was recorded.
 - g. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - h. Weather conditions at time of recording.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.
- B. Digital Video Format: Provide high-quality, high definition color digital video at an image resolution of not less than 1920 x 1080 pixels.
 - 1. Video quality shall be adequate to create photographic prints to be made from individual frames.

PART 3 - EXECUTION

3.1 GENERAL

- A. Contractor shall document preconstruction conditions using photographs or video, including condition of underground utilities, as required. All site documentation photos shall be uploaded to the Contractor's Site Documentation folder within Procore.
- B. Contractor may use photographs or video.

3.2 CONSTRUCTION PHOTOGRAPHS

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

- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in filename for each image.
 - 2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.
- C. Preconstruction Photographs: Before commencement of excavation, commencement of demolition, and starting construction, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as necessary to document existing conditions.
 - 1. Flag excavation areas and construction limits before taking construction photographs.
 - 2. Take photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of Work.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
 - 5. Show protection efforts by Contractor.
- D. Monthly Construction Photographs: Take color, digital photographs to show existing conditions uncovered as work progresses. Select vantage points to show status of construction and progress since last photographs were taken.

3.3 CONSTRUCTION VIDEOS

- A. Narration: Describe scenes on video by audio narration by microphone while video is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.
 - 1. Confirm date and time at beginning and end of recording.
 - 2. Begin each video with name of Project, Contractor's name, videographer's name, and Project location.
- B. Preconstruction Video: Before commencement of excavation, commencement of demolition, and starting construction,, record video of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as necessary to document existing conditions.
 - 1. Flag excavation areas and construction limits before recording construction videos.
 - 2. Show existing conditions adjacent to Project site before starting the Work.
 - 3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of Work.
 - 4. Record additional video as required to record settlement or cracking of adjacent structures, pavements, and improvements.

- 5. Show protection efforts by Contractor.
- C. Monthly Construction Videos: Record video to show existing conditions uncovered as work progresses. Select vantage points to show existing construction or condition, status of construction and progress since last video was taken.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 RELATED SECTIONS

- A. Other Division 1 Specification Sections.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require District Project Manager's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require District Project Manager's responsive action. Submittals may be rejected for not complying with requirements.

1.4 QUALITY ASSURANCE

- A. Perform no portion of Work requiring an Action Submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until respective Action Submittal has been approved by Architect/Engineers of Record and reviewed by District Project Manager. All Work shall be in accordance with Accepted/Accepted As Noted Submittals.
- B. Contractor shall not be relieved of its sole responsibility for deviations from requirements of Contract Documents by review or acceptance by District Project Manager of Shop Drawings, Product Data, Samples or similar Submittals.
- C. Contractor shall not be relieved of its sole responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar Submittals by District Project Manager's review thereof.
- D. Direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar Submittals, to revisions (other than those requested by District Project Manager on previous Submittals).
- E. Informational Submittals upon which District Project Manager is not expected to take responsible action may be so identified in Contract Documents.
- F. When professional calculations or certification of performance criteria of materials, systems or equipment is required by Contract Documents, District and District Project Manager shall be entitled to rely upon accuracy and completeness of such calculations and certifications.
- G. Submittals may be rejected for not complying with requirements of Contract Documents.

1.5 SUBMITTAL SCHEDULE

- A. Submittal Schedule. Ten (10) days prior to starting construction at the site, the Contractor shall prepare and submit, within Procore and in accordance with the Contract Documents, a Submittal Schedule. The Submittal Schedule shall be coordinated with the Contractor's Construction Schedule and allow the District Project Manager such time for review of

Submittals as may be required by the Contract Documents, or if none is required, an average time of 21 days for such review. The Contractor shall keep the Submittal Schedule current and updated in accordance with the requirements of the Contract Documents.

1. Coordinate Submittal Schedule with Work of Sub-contractors, Schedule of Values and list of products, as well as Contractors Construction Schedule.
- B. Include scheduled activities for all Fabrication, BIM Models, Shop Drawings, Product Data, Samples and similar Submittals, including without limitation, coordination drawings, and certificates of compliance, manufacturer's certificates, warranties, operations and maintenance manuals, attic stock (extra Material), demonstration and training (including video documentation), as-built plans, transfer of keys, and all other types of documents that are required to be submitted by Contractor under the Contract Documents.
- C. Coordinate preparation of Submittal Schedule with District Project Manager, allowing more than 21 days of review time for complicated or lengthy Submittals and less time than 21 days for those less complicated and less lengthy Submittals. Allow time for separate review by Architect/Engineer of Record prior to submittal to review by District Project Manager.
- D. Schedule Submittals to avoid concurrent Submittals to maximum extent possible.
- E. Where Submittal is concurrent with or overlaps Submittals currently being reviewed, indicate priority of each outstanding Submittals.
- F. Prepare schedule in chronological order. Provide following information:
 1. Schedule date for first Submittal.
 2. Related Section number.
 3. Submittal category.
 4. Name of Sub-contractor.
 5. Description of part of Work covered.
 6. Scheduled date for re-submittal.
 7. Number of Contractor's shop drawings, coordination drawings or other drawings anticipated within each submittal.
 8. Review time by Contractor's team, prior to submission to District Project Manager.
- G. Distribution of Submittal Schedule: Following comments resulting from District Project Manager's response to initial submission, print and distribute copies to District Project Manager, Contractor's team, Sub-contractors, and other parties required to comply with Submittal dates indicated.
 1. Post copies in Project meeting room and temporary field office.
 2. When additional revisions are made, distribute to same parties and post in same locations. Delete parties from distribution when they have completed their assigned part of Work and are no longer involved in construction activities.
 3. Adhere to accepted schedule except when specifically otherwise permitted.
- H. Schedule Updating: Revise Submittal Schedule every month and after each meeting or other activity where revisions have been recognized or made. Issue updated Submittal Schedule concurrently with report of each meeting.

1.6 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Digital Data Files: Electronic copies of digital files of the Contract Drawings will be provided and/or produced by Contractor and Sub-Contractors for use as background only in preparing submittals. Current drawings can also be found in the Drawings tool of Procore.

1. Contractor shall use Digital CAD files and drawings for submission of shop drawings.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. District Project Manager reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for reviews by District Project Manager and applicable District's Manager's receipt of submittal. No extension of the Contract time will be authorized because of failure to transmit submittals enough in advance of the Work to permit reasonable processing, including re-submittals.
 1. Initial Review: Allow an average review time of 21 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. District Project Manager will advise Contractor when a submittal is being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate review is necessary, process it in the same manner as initial submittal.
 3. Re-submittal Review: allow an average review time of 14 days for review of each re-submittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect/Engineers of Record, and by District Project Manager.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. DSA Approval Number.
 - c. Date.
 - d. Name of Architect/Engineers of Record.
 - e. Name of District Project Manager.
 - f. Name of Contractor.
 - g. Name of Sub-contractor.
 - h. Name of supplier.
 - i. Name of manufacturer.
 - j. Submittal number or other unique identifier, including revision identifier.
 1. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g. 06100.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01A).
 - k) Number and title of appropriate Specification Section.
 - l) Drawing number and detail references, as appropriate.
 - m) Location(s) where product is to be installed, as appropriate.

- n) Other necessary identification.
4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless District Project Manager observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- a. If, in addition to review by District Project Manager, the Submittal is being reviewed concurrently by other District Consultants, submit one copy of submittal to each concurrent reviewer in addition to specified number of copies to District Project Manager.
5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. District Project Manager will return without review submittals from sources other than Contractor.
- a. On attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by District Project Manager on previous Submittals, and deviations from requirements of Contract Documents, including minor variations and limitations. Include same label information as related Submittal.
 - b. Include Contractor's certification stating that information submitted complies with requirements of Contract Documents.
 - c. Transmittal Form: Use sample form provided by District Project Manager.
 - d. Transmittal form for Paper Submittals: Provide locations on form for the following information:
 - 1. Project name.
 - 2. DSA Approval Number.
 - 3. Date.
 - 4. Destination (To:).
 - 5. Source (From:).
 - 6. Name and address of Architect/Engineers of Record.
 - 7. Name of District Project Manager.
 - 8. Name of Contractor.
 - 9. Name of firm or entity that prepared submittal.
 - 10. Names of Sub-contractor, manufacturer, and supplier.
 - 11. Category and type of submittal.
 - 12. Submittal purpose and description.
 - 13. Specification Section number and title.
 - 14. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 15. Drawing number and detail references, as appropriate.
 - 16. Indication of full or partial submittal.
 - 17. Transmittal number, numbered consecutively.
 - 18. Submittal and transmittal distribution record.
 - 19. Remarks.
 - 20. Signature of transmitter.
- E. Electronic Submittals: Where required per paragraph 1.6.A above. Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect/Engineers of Record, and by District Project Manager.
4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to District Project Manager, containing the following information:
 - a. Project name.
 - b. DSA Approval Number.
 - c. Date.
 - d. Name and address of Architect/Engineers of Record.
 - e. Name of District Project Manager.
 - f. Name of Contractor.
 - g. Name of firm or entity that prepared submittal.
 - h. Names of Sub-contractor, manufacturer, and supplier.
 - i. Category and type of submittal.
 - j. Submittal purpose and description.
 - k. Specification Section number and title.
 - l. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - m. Drawing number and detail references, as appropriate.
 - n. Location(s) where product is to be installed, as appropriate.
 - o. Related physical samples submitted directly.
 - p. Indication of full or partial submittal.
 - q. Transmittal number, numbered consecutively.
 - r. Submittal and transmittal distribution record.
 - s. Other necessary identification.
 - t. Remarks.
5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 - a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.
 - d. Product name.
- F. Deviations: Highlight, encircle, or otherwise identify deviations from Contract Documents on Submittals clearly designating those portions as deviating from the Contract Documents and include separate written notification.
- G. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmissions are subject to same terms and conditions as original Submittal.
 4. Should more than 1 resubmission be required, Contractor may, at the sole discretion of the District, reimburse District for time spent by District Project Manager, District Consultants or other reviewers in processing additional resubmissions at either the agreed rates as established by contract, or if none is established, at the rate of 2.5 times the reviewer's Direct Personnel Expense (DPE). For purposes of this Paragraph, "Direct Personnel Expense: is defined as direct salaries of the reviewer's personnel engaged on Project and portion of costs of mandatory, and customary contributions and benefits related thereto, including employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, pensions and similar contributions and benefits.
 5. Resubmit submittals until they are marked with approval notation from Architect/Engineers of Record's and District Project Manager's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, Sub-contractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect/Engineers of Record's and "Accepted or Accepted As Noted" from District Project Manager.
1. Fabrication Models shall be visually presented to District Project Manager demonstrating full coordination with other systems prior to use for fabrication and installation.

PART 2 – PRODUCTS

2.1 SUBMITTAL PROCEDURES

1. General Submittal Procedure Requirements:
 - a. General Contractor to submit all submittals electronically and store all submittals in a cloud based storage system for the duration of the project.
 - b. District Project Manager will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - c. Markups and screen captures shall be included within the provided fabrication models, where appropriate.
2. Action Submittals: For Product Data, Shop Drawings and Samples, and other actions requiring review by the District Project Manager. Submit seven copies of each submittal unless otherwise indicated.
 - a. If additional copies are needed for distribution to District Consultants or others not listed below, they shall be provided as required by the Contract Documents or as requested by District Project Manager.
 - b. District Project Manager will, upon initial receipt of a submission or resubmission of a Submittal, retain 5 copies and forward 1 copy to the Program Manager.

- c. District Project Manager will, following review and action by reviewers on a submission or resubmission of a Submittal, distribute signed and stamped copies as follows: 1 to CPM, 1 to Program Manager, 1 to Inspector of Record and 2 to Contractor.
 - d. Contractor shall retain returned copy as Record Document and using it prepare copies for distribution to Sub-Contractor.
- 3. Informational Submittals: for submittals not requiring responsive action by the District Project Manager and other action required by Specifications. Submit three paper copies of each submittal unless otherwise indicated. District Project Manager will not return copies.
- 4. Certificates and Certifications Submittals: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- 5. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - a. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - b. Mark each copy of each submittal to show which products and options are applicable.
 - c. Include the following information, as applicable:
 - 1) Manufacturer's catalog cuts.
 - 2) Manufacturer's product specifications.
 - 3) Manufacturer's installation instructions.
 - 4) Mill reports.
 - 5) Standard product operating and maintenance manuals.
 - 6) Manufacturer's written recommendations.
 - 7) Manufacturer's standard product warranty.
 - 8) Standard color charts.
 - 9) Statement of compliance with specified referenced standards, and recognized trade association standards.
 - 10) Testing by recognized testing agency.
 - 11) Application of testing agency labels and seals.
 - 12) Approval numbers of organizations or agencies as required by Governmental authorities having jurisdiction.
 - 13) Notation of dimensions verified by field measurement.
 - 14) Notation of coordination requirements.
 - 15) Availability and delivery time information.
 - 16) Complete training demonstration video: Prepare electronic version in a format satisfactory to the District of all training demonstrations.
 - 17) Inventory Listing: Inventory of tools, spare parts, extra material, keys, and similar items.

- 18) Manuals: Operations & Maintenance (O&M) manual, Warranties manual, Extended Warranties manual (if applicable), other demonstration and training documents including demonstration and training video documentation.
 - d. For equipment, include the following in addition to the above, as applicable:
 - 1) Wiring diagrams showing factory-installed wiring.
 - 2) Printed performance curves.
 - 3) Operational range diagrams.
 - 4) Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - e. Submit Product Data before or concurrent with Samples.
- C. Shop Drawings: Prepare Project-specific information, drawn or modeled accurately to scale. Use reproductions of the contract Documents or standard printed data as background only for insertion of specific data and design required by each trade.
1. Preparation: Fully illustrate requirements in the Contract documents. Include the following information, as applicable:
 - a. Identification of Products.
 - b. Dimensions.
 - 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. Design calculations.
 - i. Schedules.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - m. Notation of as-built conditions.
 - n. Relationship and attachment to adjoining construction clearly indicated.
 - o. Seal and signature of professional engineer if 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 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that include the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.

- c. Sample source.
 - d. Number and title of applicable Specification Section.
3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the work, or otherwise designated as District's property, are the property of Contractor.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
7. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect of Record's exemplar where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
8. Additional Information: On attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations.
 - b. Compliance with recognized standards.
 - c. Availability.
 - d. Compliance with Applicable Laws.
 - e. Statement of acceptable uses or statement indicating suitability of product specified for proposed use.
 - f. Delivery time.
9. Submit Samples for review of kind, color, pattern, and texture for final check of these characteristics with other elements and for comparison of these characteristics between final Submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in product represented by Sample, submit at least 3 sets of paired units that show approximate limits of variations.

- b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
- 10. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into Work are indicated in individual Specification Sections. Such Samples must be in undamaged condition at time of use.
 - b. Samples not incorporated into Work, or otherwise designated as District's property, are property of Contractor.
- E. Product List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product.
 - 2. Number and name of room or space.
 - 3. Location within room or space.
- F. Coordination Drawings Submittals: Comply with requirements specified in General Conditions.
- G. Contractor's Construction Schedule: Comply with requirements specified in General Conditions.
- H. Application for Payment and Schedule of Values: Comply with requirements specified in General Conditions.
- I. Subcontract List: Prepare written summary identifying individuals or firms proposed for each portion of work, including those who are to furnish products or equipment fabricated to special design. Use CSI Form 1.5A or other form acceptable to District Project Manager. Include following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Sections covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- J. Test and Inspection and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- K. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- L. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- M. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Design Consultants and Districts, and other information specified.
- N. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

- O. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- P. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the contract documents. Include evidence of manufacturing experience where required.
- Q. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- R. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- S. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- T. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluations of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- U. Research/Evaluation Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- W. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
- X. Preconstruction Test Reports: Submit reports written by a qualified agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- Y. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- Z. Field Test Reports: Submit written reports 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 requirements in the Contract Documents.
- AA. Design Data: Prepare and submit written and graphic information, including, but not limited to performance and design criteria, list of applicable codes and regulations and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

BB.Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Section 017823.

CC. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

DD. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include 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 requirements.
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 statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to District Project Manager.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 – EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review and approve each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Obtain Architect/Engineers of Record's approval and mark with approval stamp prior to submission to District Project Manager.
 - 1. Submittals that do not bear Contractor's approval stamp and Architect/Engineers of Record's approval stamp as required herein will be returned without actions.
- B. Architect/Engineers of Record's Action: Approval is for purpose of checking for conformance with the Contract Documents.
 - 1. Where action and return of Submittals is required, Architect of Record will review each Submittal, mark to indicate action taken, and return.
 - 2. Compliance with Contract Documents is Contractor's responsibility.
 - 3. Review of separate item shall not indicate acceptance of assembly of which item is part.
- C. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- D. Approval Stamp: Stamp each submittal with a uniform, approval stamp that has been reviewed and approved by Contractor. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval.

3.2 DISTRICT PROJECT MANAGER'S ACTION

- A. General: District Project Manager nor Architect/Engineer of Record will not review submittals that do not bear Contractor's approval stamp will return them without action.
- B. District Project Manager review is for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 1. Purpose of Submittal is to demonstrate for those portions of Work for which submittals are required, manner in which Contractor proposes to conform to information given and design concept expressed on Contract Documents.
 - 2. Review is not conducted for purpose of determining accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain responsibility of Contractor.
- C. Except for Submittals for record or for information, where action and return of Submittals is not required, District Project manager will review each Submittal, mark to indicate action taken, and return.
 - 1. Compliance with specified characteristics is Contractor's responsibility and is not considered part of District Project Manager's review.
 - 2. Acceptance of Submittals with deviations from the Contract Documents that have been noted in the manner required by the Contract Documents shall not relieve Contractor from its sole responsibility for additional costs and delays associated with changes required to accommodate such deviations. Deviations included in Submittals, including those that have been noted as such by Contractor, are deemed rejected and exempt from any review of Submittal by District Project Manager.
 - 3. Review of separate item shall not indicate acceptance of assembly of which item is part.
 - 4. Make those revisions required by District Project Manager.
 - 5. Notations by District Project Manager which, if implemented, would require Contractor to perform Extra Work or cause Delay shall be brought to District Project Manager's

attention, in writing in the manner required by the General Conditions, before proceeding with Work.

6. When professional certification of performance criteria of materials, systems or equipment is required by Contract Documents, District Project Manager shall be entitled to rely upon accuracy and completeness of such calculations and certifications.
- D. Action Submittals: Architect or Engineer of Record will review each submittal, make marks to indicate acceptance, corrections or revisions required, and return it. District Project Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action as follows:
1. Accepted: Means fabrication, manufacturer, or construction may proceed provided that the Submittal complies with Contract Documents.
 2. Accepted as Noted: Means fabrication, manufacture, or construction may proceed provided that Submittal complies with the Contract Documents and incorporates reviewer's notations. If Contractor cannot comply with such notations, Contractor shall make revisions and resubmit.
 3. Revise and Resubmit: Means fabrication, manufacture, or construction may NOT proceed. In resubmitting, Contractor shall limit corrections to items marked.
 4. Rejected: Means Submittal does not comply with expressed design intent of Contract Documents. Do not reuse Submittals stamped "Rejected.". Prepare Submittal again and resubmit.
- E. Informational Submittals: District Project Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. District Project Manager will forward each submittal to appropriate party.
- F. Incomplete submittals are unacceptable, will be considered non responsive, and will be returned for re-submittal without review.
- G. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 013527 - SITE SAFETY

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Requirements for compliance with OSHA, Cal-OSHA, and other safety requirements

1.02 JOBSITE SAFETY

- A. The Contractor shall be solely responsible for ensuring that all work performed under the Contract is performed in strict compliance with all applicable Federal, State and Local occupational safety regulations. The Contractor shall provide at its expense all safeguards, safety devices and protective equipment, and shall take any and all actions appropriate to providing a safe jobsite.
- B. A multi-employment worksite, as defined by Cal-OSHA, is one in which many employers occupy the same site. The District considers the Contractor to be the “controlling authority” for all work site safety and health of the sub-contractors.

1.03 PROJECT SAFETY OFFICIAL (PSO)

- A. The Contractor shall designate in writing a Project Safety Official (PSO). The PSO must be a competent person capable of identifying existing and predictable hazards in the surroundings of working conditions which are unsanitary, hazardous, or dangerous to employees and must have previous experience on similar types of projects. The PSO shall be thoroughly familiar with the Contractor’s INJURY AND ILLNESS PREVENTION PROGRAM (IIPP). The PSO shall be available at the work site at all times work is in progress to promptly abate any potential safety hazards and shall have the authority and responsibility to shut down an operation, if necessary. Failure by the Contractor to provide the required PSO or grant the PSO due authority are grounds upon which the BMT Construction Manager (BMT.) may direct the cessation of all work activities and operations at no cost to LBCC until such time as the Contractor is in compliance.
- B. The Contractor through the PSO shall oversee and be responsible for the provision and maintenance of, including but not limited to the following:
 - 1. A log of safety inspections performed.
 - 2. A proper and adequate First Aid kit shall be maintained on site for one time treatment of minor cuts, scratches, burns, splinters and the like.
 - 3. All applicable Material Safety Data Sheets shall be on site prior to the use of said materials.
 - 4. Display in clear view of the on-site personnel all applicable Federal, State and local regulations dealing with safety including a map denoting the route to the nearest emergency care facility with emergency phone numbers.
 - 5. Maintain an adequate Fire Protection and Prevention plan.
 - a. Fire fighting equipment must be well maintained and freely accessible on site in conspicuous locations at all times.

- b. Fire extinguishers must comply with all applicable Cal - OSHA specification.
 - c. Work shall be carried out complying with the California Fire Code, latest edition as applicable to construction work.
- 6. Employee Safety Training including but not limited to:
 - a. All equipment operators must be trained and certified as per Contractors INJURY AND ILLNESS PREVENTION PROGRAM (IIPP):
 - b. Training in the use of fire extinguishers.
 - c. Flaggers must be trained.
 - d. Safe Scaffolding usage.
- 7. Lock-out and block-out procedures for machinery, equipment, electrical and tool related hazards.
- 8. Heavy equipment procedures and standards.
- 9. Excavation and trenching hazards.
- 10. Job site must be fenced adequately (see Section 015000-Construction Facilities and Temporary Controls) to protect Public, including gates to be kept secured at all times. In the rare cases when fences must be temporarily opened to public areas to facilitate construction or the work area can not be effectively fenced, Flaggers must be provided. Job site must be fully secured by the end of the workday with no remaining hazards or obstacles in the public areas.
 - a. Flaggers must be placed in locations so as to give effective warning.
 - b. Flaggers must wear orange or strong yellow-green warning garments, such as vests, jackets, shirts, or rainwear.
- 11. Electrical hazards and safe procedures.
- 12. Musculoskeletal hazards.
- 13. Hazards causing chronic illness, such as exposure to lead, asbestos, and other cancer-causing products.
- 14. A severe weather plan including ceasing or modifying on-site operations during high temperature, lightning, or high wind velocities, etc.
- 15. No damaged or hazardous tools will be tolerated on site including but not limited to frayed or damaged electric cords, any tools with missing or altered original safety devices or switches, ladders without proper slip-resistant feet, etc.
- 16. Any work done using ladders must conform to original proper use of said ladders and all OSHA guidelines. (i.e. including but not limited to top rung of a step ladder is not to be used as a step, extension ladders must extend three rungs above the proposed use height, etc.)

17. All employees must wear proper Personal Protective Equipment (PPE) and abide by safety work ethics included but not limited to hard hat, proper shoes, long pants, and clothing including gloves, protective eyewear and respirators, no loose clothing, long hair must be restrained, etc.
- C. Provide a site specific written review of potential or predictable Fall Protection Hazards from heights of six (6) feet or greater. The review should address the need for Fall Protection Systems to mitigate hazards and include equipment and methods employed, responsibilities, training requirements, and monitoring methods. The erection and dismantling operations of scaffolds as well as the fall zones around scaffolds must be included as well.
1. All Fall Protection systems must be properly implemented and maintained.
 2. Fall Protection Plan must be implemented when a Fall Protection System is required but cannot be used. A Fall Protection Plan must be written by a qualified person identified in the plan and actively responsible for the implementation.
- D. Job site safety practices found by County representatives to be in violation of any of Contractors INJURY AND ILLNESS PREVENTION PROGRAM (IIPP) or applicable Federal, State and local occupational safety regulations including any Cal-OSHA issued materials shall be grounds for LBCC to direct the cessation of all work activities and operations affected by this violation at no cost to LBCC until such time as the Contractor notifies LBCC in writing that the Contractor is in compliance.
- E. Safety Indemnification. To the extent allowed by law, the Contractor agrees to defend, indemnify and hold harmless LBCC and its officers, employees and agents including PI, AOR, AOR's consultants, and BMT from and against any and all investigations, complaints, citations, liability, expense (including defense costs and legal fees), claims and/or causes of action for damages of any nature whatsoever, including but not limited to injury or death to employees of the Contractor or its subcontractors or Agency, attributable to any alleged act or omission of the Contractor or its subcontractors which is in violation of any cal/OSHA regulation. The obligation to defend, indemnify and hold harmless includes all investigations and proceedings associated with purported violations of Section 336.10 of Title 8 of the California Code of Regulations pertaining to multi-employer work sites. The Agency may deduct from any payment otherwise due the Contractor any costs incurred or anticipated to be incurred by the Agency, including legal fees and staff costs, associated with any investigation or enforcement proceeding brought by cal/OSHA arising out of the Project.

END OF SECTION 013527

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SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, District, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections:
 - 1. Division 1 Section "Construction Schedule" for developing a schedule of required tests and inspections.
 - 2. Division 1 Section "Testing and Inspection" for required tests and inspections and testing and inspection criteria.
 - 3. Divisions 2 through 26 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. DSA: State of California, Division of the State Architect.
- B. AOR: Architect of Record
- C. IOR: Inspector of Record.
- D. BMT: Bond Management Team/CM-Construction Manager
- E. Contractor – General Contractor

- F. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- G. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- H. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Laboratory Mockups: Full-size, physical assemblies constructed at testing facility to verify performance characteristics.
 - 2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on the project site, consisting of multiple products, assemblies and subassemblies.
 - 3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- I. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- J. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- K. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- L. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- M. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- N. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.

- O. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to the Bond Management Team and Architect for a decision before proceeding.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to DSA, District, BMT, Architect, IOR, structural engineer, and Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at the Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed, unless otherwise indicated.

1.6 QUALITY CONTROL

- A. District Responsibilities: Where quality-control services are indicated as District's responsibility, District will engage a qualified testing agency to perform these services.
 1. District will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to District are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by District, unless agreed to in writing by District.
 3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report of each quality-control service to DSA, District, BMT, Architect, IOR, structural engineer, and Contractor.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation,

including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

1. Submit written report to District, BMT, and Architect.
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
1. Submit written report to District, BMT, Architect, and Contractor.
- E. Retesting/Reinspection: Regardless of whether original tests or inspections were District's or Contractor's responsibility; Contractor shall provide quality-control services, including retesting and reinspection, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect, IOR, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify the BMT, Architect, IOR, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report of each test, inspection, and similar quality-control service to DSA, District, BMT, Architect, IOR, structural engineer, and Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.

- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 - 1. Distribution: Distribute schedule to District, Construction Manager (BMT), Architect, IOR, structural engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.7 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: District will engage a qualified testing agency and special inspectors to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of District, and as follows:
 - 1. Verify that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 - 2. Notify Architect, IOR, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 3. Submit a certified written report of each test, inspection, and similar quality-control service to DSA, District, BMT, Architect, IOR, structural engineer, and Contractor.
 - 4. Submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 5. Interpret tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 6. Retest and re-inspect corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.

- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's and IOR's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 1 Section "Execution Requirements."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities, construction facilities and controls to be provided, maintained, relocated, and removed by CONTRACTOR

1.02 RELATED SECTIONS AND DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Section 011000: Summary
- C. Section 012973: Schedule of Values
- E. Section 015723: Storm Water Pollution Control Measures
- F. Section 013210: Construction Schedule
- G. Section 014523: Testing and Inspection
- H. Section 018620: Test and Balance
- I. Section 017700: Closeout Procedures

1.03 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, District's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Pay water service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Pay electric power service use charges for electricity used by all entities for construction operations.

1.04 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1.05 QUALITY ASSURANCE

- A. CONTRACTOR shall comply with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building Code requirements
 - 2. Division of State Architect
 - 3. Health and safety regulations
 - 4. Utility company regulations
 - 5. Police, fire department and rescue squad requirements
 - 6. Environmental protection regulations
- B. CONTRACTOR shall arrange for the inspection and testing of each temporary utility prior to use. Obtain required certifications and permits and transmit to BMT.
- C. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with California Electrical Code (CEC).
- D. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- E. Accessible Temporary Egress: Comply with applicable provisions in the California Building Code (CBC), the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, and ICC/ANSI A117.1.

1.06 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before District's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.01 QUALITY ASSURANCE

- A. CONTRACTOR provided facilities are to be in place and available for DISTRICT use and occupancy within **ten (10)** calendar days following the date of issue of the Notice to Proceed and shall remain in place and available for DISTRICT use and occupancy throughout the full term of the Contract.
- B. Interior Air Quality (IAQ) During Construction:

1. Referenced Standards include:
 - i. ASHRAE 62.1 – 2004.
 - ii. ASHRAE 52.2 – 1999.
 - iii. CHPS Best Practices Manual – Volume III (2006 Edition).
2. Interior Air Quality (IAQ) During Construction Plan: CONTRACTOR is required to develop and submit to the DISTRICT for review and approval a Construction Indoor Air Quality (IAQ) Plan using the blank form provided as Appendix A of this Specification. Plan shall be submitted within 120 days of NTP. Implementation of the approved (IAQ) Plan will be included in the project construction schedule.
3. Construction Photos Requirement: CONTRACTOR shall submit photographs that demonstrate the Construction Ventilation, Preconditioning, Sequencing, and Protection measures taken during the project for complying with the IAQ plan, applicable specifications and referenced standards.

3.02 TEMPORARY UTILITIES

- A. CONTRACTOR shall submit to BMT reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.
- B. CONTRACTOR shall coordinate with the appropriate utility company to install temporary services. Where the utility company provides only partial service, CONTRACTOR shall provide and install the remainder with matching compatible materials and equipment.
- C. Temporary Water:
 1. CONTRACTOR shall furnish, install and pay for all necessary permits, inspections, move ins/out, temporary water lines, connections & fees, extensions and distribution, metering devices and use charges, deliveries/pick-ups, rentals, storage, transportation, taxes, labor, insurance, bonds, material, equipment and all other miscellaneous items for the temporary water system, and upon Substantial Completion of the Work, removal of all such temporary water system devices and appurtenances.
 2. CONTRACTOR shall provide and maintain temporary water service, including water distribution piping and outlet devices of the size and required flow rates in order to provide service to all areas of the Project site.
 3. CONTRACTOR shall provide and pay for all potable water needed for construction and all other uses associated with the Work.
 4. CONTRACTOR shall at their expense and without limitation, remove, extend and/or relocate temporary water systems as rapidly as required in order to provide for progress of the Work.

D. Temporary Electric:

1. CONTRACTOR shall furnish, install, maintain and pay for all necessary permits, inspections, temporary wiring, metering devices and use charges, move ins/outs, connections & fees, service, extension and distribution, deliveries/pickups, rentals, storage, transportation, taxes, labor, insurance, bonds, materials, equipment and all other required miscellaneous items for the temporary electric systems and upon Substantial Completion of Work, removal of all such temporary electric systems and appurtenances.
2. CONTRACTOR shall furnish, install, maintain, extend and distribute temporary electric area distribution boxes, so located that individual trades can obtain adequate power and artificial lighting, at all points required for the Work, for inspection and for safety.
3. CONTRACTOR shall provide temporary electric for construction, temporary facilities, and connections for construction equipment requiring power or lighting, at all points required for the Work, for inspection and safety.
4. CONTRACTOR shall provide 20 foot candles minimum lighting levels inside building(s) and 5 foot candles outside for safety and security.
5. CONTRACTOR shall ensure welding equipment is supplied by electrical generators.
6. CONTRACTOR shall at their expense and without limitation remove, extend and/or relocate temporary electric systems as rapidly as required in order to provide for progress of the Work.

E. Temporary Gas:

1. CONTRACTOR shall furnish, install, maintain and pay for all necessary permits, inspections, metering devices and use charges, move ins/out, extension and distribution, deliveries/pickups, rentals, storage, transportation, equipment and piping, rentals, taxes, labor, material, insurance, bonds, and all other required miscellaneous items for the temporary gas systems necessary to perform the Work, and upon Substantial Completion of the Work, removal of all such temporary gas system devices and appurtenances.
2. CONTRACTOR shall at their expense and without limitation remove, extend and/or relocate temporary gas systems as rapidly as required in order to provide for progress of the Work.

F. Temporary Heating, Ventilation and Air Conditioning:

1. CONTRACTOR shall furnish, install, maintain, and pay for all necessary permits, inspections, move ins/out, extensions and distribution, connections and fees, use charges, metering devices and use charges, equipment, rentals, deliveries/pick-ups, storage, transportation, taxes,

labor, insurance, bonds, material, equipment and all other required miscellaneous items for temporary heat and ventilation needed for proper installation of the Work and to protect materials and finishes from damage due to weather. Upon Substantial Completion of the Work, CONTRACTOR shall remove all such temporary heating and ventilating system devices and appurtenances.

2. CONTRACTOR shall provide, maintain and pay for all temporary ventilation of enclosed Work areas to cure materials, disperse humidity, remove fumes, and to prevent accumulation of dust, irritants, or gases.
3. DISTRICT will not accept utilization of the permanent HVAC system for temporary HVAC until Substantial Completion.
4. CONTRACTOR shall maintain manufacturer required levels of room and/or space temperature, humidity and ventilation necessary to install products, materials and/or systems of the Work.
5. CONTRACTOR shall at their expense and without limitation, remove, extend and/or relocate temporary heating and ventilating systems as rapidly as required in order to provide for progress of the Work.

G. Temporary Telephone and Data:

1. CONTRACTOR shall furnish, install, maintain and pay for all necessary permits, inspections, move ins/outs, extensions and distribution, devices, connections and fees, use charges, rentals, deliveries/pickups, storage, transportation, taxes, labor, insurance, bonds, material, equipment and all other required miscellaneous items for temporary phone, data service and distribution to Project site temporary offices as required by this Section and Section 015000, 3.03.
3. CONTRACTOR shall at their expense and without limitation, remove, extend and/or relocate temporary phone service and distribution as rapidly as required in order to provide for progress of the Work.
4. Upon Substantial Completion of the Work, CONTRACTOR shall remove all such temporary phone service, distribution, devices and appurtenances.

3.03 CONTRACTOR PROVIDED FACILITIES

- A. CONTRACTOR shall provide temporary offices, utilities, storage units, fencing, barricades, chutes, elevators, hoists, scaffolds, railings and other facilities or services as required. CONTRACTOR shall be responsible for providing, installation, maintenance, supplying, and all use charges for the items provided under Section 015000.
- B. INSTALLATION, GENERAL

1. Prepare a plan showing location or relocation of temporary facilities for the District's review. District shall approve location of all temporary facilities prior to installation.
2. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
3. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
4. Restore all areas to condition prior to start of construction.

C. Temporary Offices:

1. Field Office for Contractor: Prefabricated or mobile trailer unit(s) with serviceable finishes, temperature controls, and foundations adequate for normal loading. Furnish and equip office as necessary for Contractor's field staff, including the DBE architect and as follows:
 - a. This office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock windows.
 - b. The Contractor shall provide and pay for adequate electric lights, private local telephone services with a loud exterior bell, and an adequate heating and cooling system. For the duration of the Project and coordination with the District.
 - c. Provide a dedicated DSL line-multiple jacks or dedicated wireless internet connection, phone line, desk, office chair, plan rack, Two (2) power surge protectors, a conference room with table and chairs for 12 people. Security pad for the trailer system, mini blinds for the windows, A/C and Heating and a Clock.
 - d. Contractor to provide all entry locks keyed alike, an exterior locking bar device each office to have lockable doors. Offices to be at each end of the trailer with Conference area in the center
 - e. Install a plan reviewing table secured to the wall.
 - f. Provide a plan rolling plan rack and drawing sticks to hold 12 sets of plans on 42" drawing sticks.

2. Temporary Offices: Contractor acknowledges that the building footprint may occupy/occupies the majority of the project site and that the Contractor may have to secure additional areas off-site for the location of temporary office facilities for Contractor parking, lay-down and storage areas.
 3. Field office for Construction Manager and Inspector of Record (IOR): Prefabricated or mobile trailer unit(s) with serviceable finishes, temperature controls, and foundations adequate for normal loading. Furnish and equip as necessary to provide for one (1) Construction Manager office, one (1) IOR office and two (2) field staff workstations.
 - a. Provide dedicated individual office space for IOR and Construction Manager, to include their own desks and chairs and internet connections.
 - b. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
 - c. Conference room of sufficient size to accommodate meetings of 12 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4 foot square tack and marker boards.
 - d. Drinking water and private toilet.
 - e. The Contractor to provide 8 ½x11 Paper and toner for the use by the IOR for the copy machine and fax machine on an as needed monthly basis.
 - f. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 degree F.
 - g. Lighting fixtures capable of maintaining average illumination of 20 foot candles at desk height.
 - h. Install a plan reviewing table secured to the wall.
 - i. Provide a plan rolling plan rack and drawing sticks to hold 12 sets of plans on 42" drawing sticks.
 - j. Contractor to provide dedicated toilet facilities for the IOR use and weekly cleaning service.
 4. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - a. Store combustible materials apart from building.
- D. At CONTRACTOR'S expense and without limitation remove and/or relocate temporary office(s) and related facilities as rapidly as required in order to provide for progress of the Work.
- E. Temporary Storage Units:
1. CONTRACTOR shall provide secure and waterproof storage units for the temporary storage of equipment and other items requiring protection.

3. CONTRACTOR shall be responsible for all delivery charges and will install the storage unit in an appropriate area.
4. CONTRACTOR shall remove the storage unit from the Project site when the storage unit is no longer required for the Work or upon Substantial Completion of the Work.
5. CONTRACTOR shall at their expense and without limitation remove and/or relocate storage units as rapidly as required in order to provide for progress of the Work.

F. Temporary Sanitary Facilities:

1. CONTRACTOR shall provide portable chemical toilet facilities. Quantity of portable chemical toilet facilities shall be based on total number of workers and shall be in accordance with CAL/OSHA standards.
2. Portable chemical toilet facilities shall be maintained with adequate supplies and in a clean and sanitary condition and shall be removed from the Project site upon Substantial Completion of the Work. CONTRACTOR shall keep both DISTRICT chemical toilet facilities and DISTRICT trailer restroom clean and operational at all times.
3. CONTRACTOR employees shall not use District toilet facilities.
4. At CONTRACTOR'S expense and without limitation remove and/or relocate portable chemical toilet facilities as rapidly as required in order to provide for progress of the Work.
5. CONTRACTOR will contain their breaks and lunch periods to the areas designated by BMT or any public area outside the Project site. CONTRACTOR shall provide a suitable container within the break/lunch area for the placement of trash. Areas used for break/lunch must be maintained clean and orderly. Once finish flooring has been installed in a particular area, no food or beverages will be permitted in that area.

G. Temporary Security Fence/Barricade:

1. CONTRACTOR is responsible for providing site enclosure, other fences, and barricades prior to starting construction operations. Install portable chain-link enclosure fence with lockable entrance gates. Locate as required, or enclose entire project site or portion determined sufficient by the Construction Manager to accommodate construction operations. Install in a manner that will prevent people, dogs and other animals from easily entering site except by entrance gates.
2. Where the District has currently or previously installed a perimeter fence to this project, but if the Contractor needs to relocate or temporarily move any of these fence panels, then it is the Contractors responsibility for this work and any subsequent cost. Security of Project site and contents is a continuous obligation of CONTRACTOR.

3. The Contractor is responsible for maintaining the wind screen to the fence Windscreen, all rips, tears, missing sections shall be corrected by the Contractor upon notification by BMT.

At CONTRACTOR'S expense and without limitation remove and/or relocate fencing, fabric and barricades or other security and protection facilities as rapidly as required in order to provide for progress of the Work.

H. Other Temporary Enclosures & Barricades:

1. Provide lockable, temporary weather-tight enclosures at openings in exterior walls to create acceptable working conditions, to allow for temporary heating and for security.
2. Provide protective barriers around trees, plants and other improvements designated to remain. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
3. Temporary partitions shall be installed at all openings where additions connect to existing buildings, and where to protect areas, spaces, property, personnel, students and faculty and to separate and control dust, debris, noise, access, sight, fire areas, safety and security. Temporary partitions shall be as designated on the Drawings or as specified by ARCHITECT. At CONTRACTOR'S expense and without limitation remove and/or relocate enclosures, barriers and temporary partitions as rapidly as required in order to provide for progress of the Work.
4. Since the Work of this Project may be immediately adjacent to existing occupied structures and vehicular and pedestrian right of ways, CONTRACTOR shall, in his sole judgment and in accordance with applicable safety standards, provide all temporary facilities, additional barricades, protection and care to protect existing structures, occupants, property, pedestrians and vehicular traffic. CONTRACTOR is responsible for any damage, which may occur to the property and occupants of the property of DISTRICT or adjacent private or public properties which in any way results from the acts or neglect of CONTRACTOR.
5. CONTRACTOR shall be responsible for cleaning up all areas adjacent to the construction site which have been affected by the construction; and for restoring them to at least their original condition - including landscaping; planting of trees, sod, and shrubs damaged by construction; and raking and disposal of debris such as roofing shingles, paper, nails, glass sheet metal, bricks, and waste concrete. Construction debris shall be removed and properly disposed of. Culverts and drainage ditches with sediment from the construction area shall be cleared routinely to maintain proper drainage and re-cleaned prior to completion of the contract.

6. CONTRACTOR shall ensure sediment does not block storm drains. CONTRACTOR shall be responsible for cleaning storm drains blocked due to erosion or sediment from the work area.
7. CONTRACTOR to ensure all site drive entrances have rumble plates to remove dirt from construction vehicles before leaving the site.
- I. Temporary Storage Yards:
 1. CONTRACTOR shall fence and maintain storage yards in an orderly manner.
 2. Provide storage units for materials that cannot be stored outside.
 3. At CONTRACTOR'S expense and without limitation remove and/or relocate storage yards and units as rapidly as required in order to provide for progress of the Work.
- J. Temporary De-watering Facilities & Drainage: Comply with requirements of authorities having jurisdiction. Maintain project site, excavations, and construction free of water.
 1. For temporary drainage and de-watering facilities and operations not directly associated with construction activities included under individual sections, comply with de-watering requirements of applicable Division 01 sections. CONTRACTOR shall maintain the Work, Project site and related areas free of water.
 2. For temporary drainage and de-watering facilities and operations directly associated with new buildings, additions or other construction activities, comply with Division 01 & 02 Sections. CONTRACTOR shall be responsible for, but not limited to, de-watering of excavations, trenches & below grade areas of buildings, structures, the Project site and related areas.
 3. Dispose of rainwater in a lawful manner and will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
- K. Temporary Protection Facilities Installation:
 1. CONTRACTOR shall not change over from using temporary facilities and controls to permanent facilities until Substantial Completion, except as permitted by BMT
 2. Until permanent fire protection needs are supplied and approved by authorities having jurisdiction, CONTRACTOR shall provide, install and maintain temporary fire protection facilities of the types needed in order to adequately protect against fire loss. Comply with NFPA 241.
 - a. CONTRACTOR shall prohibit smoking in construction areas.

- b. CONTRACTOR shall supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - c. CONTRACTOR shall develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - d. When required, provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
 - 3. CONTRACTOR shall provide, install and maintain substantial temporary enclosures of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security. Where materials, tools and equipment are stored within the Work area, CONTRACTOR shall provide secure lock up to protect against vandalism, theft and similar violations of security. DISTRICT accepts no financial responsibility for loss, damage, vandalism or theft.
 - 4. CONTRACTOR operations shall not block, hinder, impede or otherwise inhibit the use of required exits and/or emergency exits to the public way, except as approved by BMT. CONTRACTOR shall maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fire fighting equipment and/or personnel.
 - 5. With approval of BMT and at the earliest feasible date in each area of the Work, complete installation of the permanent fire protection facilities including connected services and place into operation and use. Instruct DISTRICT personnel in use of permanent fire protection facilities.
 - 6. In the event of an emergency drill or an actual emergency, designated by the sounding of the fire alarm and/or other sounding device, all construction activities must cease. CONTRACTOR shall evacuate the Work area and remain outside the Work area until permitted to return. No Work shall be conducted during the evacuation of a building or during an emergency.
- L. Temporary Security and Safety Measures:
- 1. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - a. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 - b. Install lighting for Project identification sign.
 - 2. During performance of the Work, CONTRACTOR shall provide, install and maintain substantial temporary barriers and/or partitions separating

all Work areas from areas occupied by students, faculty and/or administrative staff.

3. CONTRACTOR shall employ and maintain sufficient security and safety measures to effectively prevent vandalism, vagrancy, theft, arson, and all other such negative impacts to the Work. Any impacts to the progress of the Work of CONTRACTOR, DISTRICT, or DISTRICT'S forces, due to loss from inadequate security, will be the responsibility of CONTRACTOR.
4. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - a. Truck cranes and similar devices for hoisting materials and considered "tools and equipment" and not temporary facilities.
5. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
6. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.
7. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site where hazardous operations may occur overhead. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
 - a. Construct covered walkways using scaffold or shoring framing.
 - b. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
 - c. Paint and maintain appearance of walkway for duration of the Work.

M. Temporary Access Roads and Staging Areas:

1. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - a. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - b. Maintain access for fire-fighting equipment and access to fire hydrants.
3. Provide a minimum of two (2) flagmen on each side of vehicles entering or exiting Site through adjacent drives or parking lots at all times. **IN NO CASE SHALL VEHICLES BE ALLOWED TO PASS THROUGH ADJACENT DRIVEWAYS, WALKWAYS, OR PARKING LOTS UNESCORTED BY MARKED FLAGMEN.**
2. Due to the limited amount of on and off Project site space for the parking of staff and school visitor's vehicles there will be no parking of CONTRACTOR vehicles in areas designated for school use only.

CONTRACTOR shall provide legal access to and maintain CONTRACTOR designated areas for the legal parking, loading, off-loading & delivery of all vehicles associated with the Work. CONTRACTOR shall be solely responsible for providing and maintaining these requirements whether on or off the Project site. CONTRACTOR shall provide and maintain ample on-site parking spaces designated for the exclusive use of DISTRICT. CONTRACTOR shall erect signs as required by DISTRICT each of these spaces and prevent all unauthorized vehicles from parking in the DISTRICT-reserved spaces.

2. Temporary access roads are to be installed and maintained by CONTRACTOR to all areas of the Project site.
3. CONTRACTOR will be permitted to utilize existing facility campus roads as designated by BMT. CONTRACTOR shall only utilize those entrances and exits as designated by BMT and CONTRACTOR shall observe all traffic regulations of DISTRICT.
4. CONTRACTOR shall maintain roads and walkways in a clean condition including removal of debris and/or other deleterious material on a daily basis.

A. MOISTURE AND MOLD CONTROL

1. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
2. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - a. Protect porous materials from water damage.
 - b. Protect stored and installed material from flowing or standing water.
 - c. Keep porous and organic materials from coming into prolonged contact with concrete.
 - d. Remove standing water from decks.
 - e. Keep deck openings covered or dammed.
3. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - a. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - b. Keep interior spaces reasonably clean and protected from water damage.
 - c. Periodically collect and remove waste containing cellulose or other organic matter.
 - d. Discard or replace water-damaged material.

- e. Do not install material that is wet.
 - f. Discard, replace or clean stored or installed material that begins to grow mold.
 - g. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
4. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
- a. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 - b. Use permanent HVAC system to control humidity.
 - c. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - 1. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
 - 2. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 - 3. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.04 PROJECT SIGNAGE

- A. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - a. Identification Signs: Provide Project identification signs.
 - b. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - c. Maintain and touchup signs so they are legible at all times.
- B. No other signs shall be displayed without approval of BMT. At CONTRACTOR'S expense and without limitation, remove and/or relocate Project signage and related facilities as rapidly as required in order to provide for progress of the Work.
- C. CONTRACTOR shall remove Project signage at Substantial Completion of the Work.
- D. Until Substantial Completion of the Work, CONTRACTOR shall employ appropriate means to remove all graffiti from buildings, equipment, fences and all other temporary and/or permanent improvements on the Project site within twenty-four (24) hours from the date of report or forty-eight (48) hours of each occurrence.

- G. CONTRACTOR shall provide and install signage to provide directional, identification, and contact information to construction personnel and visitors as follows and as reviewed by BMT.
1. For construction traffic control/flow at entrances/exits, and as designated by BMT.
 2. To direct visitors.
 3. For construction parking.
 4. To direct deliveries.
 5. For Warning Signs as required.
 6. In accordance with CAL/OSHA standards as necessary.
 7. For trailer identification and Project site address.
 8. For "No Smoking" safe work site at designated locations.
 9. Emergency contact information and phone number of CONTRACTOR.
 10. Emergency contact information and phone number of local police, fire, and emergency personnel.
 11. For Labor Compliance Program (LCP) as required under the General Conditions (Prevailing wage rates and Notice of LCP)
 12. Employee benefits payments paid to trust funds are required under the General Conditions.

3.05 TRENCHES

- A. Open trenches for installation of utility lines (water, gas, electrical and similar utilities) and open pits outside barricaded working areas shall be barricaded at all times in a legal manner determined by CONTRACTOR. Trenches shall be backfilled and patch-paved within twenty-four (24) hours after approval of installation by authorities having jurisdiction or shall have "trench plates" installed. Required access to buildings shall be provided and maintained. CONTRACTOR shall comply with all applicable statutes, codes & regulations regarding trenching and trenching operations. Open trenches deeper than 3'-6", and not located within a public street access, shall be enclosed within an 8'-0" high chain-link fence.

3.06 DUST CONTROL

- A. CONTRACTOR is responsible for dust control on and off the Project site. When Work operations produce dust the Project site and/or streets shall be sprinkled with water to minimize the generation of dust. CONTRACTOR shall clean all soils and debris from construction vehicles and cover both earth and debris loads prior to leaving the Project site. CONTRACTOR shall, on a daily basis, clean all

streets and/or public improvements within the right of way of any and all debris, dirt, mud and/or other materials attributable to operations of CONTRACTOR.

3.07 WASH OUT

- A. CONTRACTOR shall provide and maintain a minimum of four (4) wash out boxes of sufficient size and strength to provide for concrete mixer wash out. CONTRACTOR shall locate and relocate both the wash out boxes and wash out areas in order to accommodate the progression of the Work. The wash out area shall be located as to minimize the amount of potential run off onto adjacent private and/or public property. CONTRACTOR shall legally dispose of the contents of the wash out boxes and area on an as needed basis or as required by BMT.

3.08 WASTE DISPOSAL

- A. Comply with requirements specified in Division 1 Section "Construction Waste Management".
- B. CONTRACTOR shall provide and maintain trash bins on the Project site. Trash bins shall be serviced on an as needed basis and CONTRACTOR is responsible for the transportation of and the legal disposal of all contents.

3.09 ADVERSE WEATHER CONDITIONS

- A. Should warnings of adverse weather conditions such as heavy rain and/or high winds be forecasted, CONTRACTOR shall provide every practical precaution to prevent damage to the Work, Project site and adjacent property. CONTRACTOR precautions shall include, but not be limited to, enclosing all openings, removing and/or securing loose materials, tools, equipment and scaffolding.
- B. CONTRACTOR shall provide and maintain drainage away from buildings and structures.
- C. CONTRACTOR shall implement all required storm water mitigation measures as required under related Division 01 Sections.

3.10 DAILY AND MONTHLY REPORTS

- A. CONTRACTOR shall provide and maintain in the Project site office of CONTRACTOR, a daily sign in sheet for use by all employees of CONTRACTOR and all Subcontractors at whatever tier. At the beginning of each work day, the foreman, project manager, superintendent of CONTRACTOR and/or Subcontractors shall visit the site office of CONTRACTOR and shall enter onto the daily sign in sheet: all employee names; trade classification; and represented company. The completed sign in sheet shall serve as the basis of and shall be submitted with the daily construction report as set forth in Section 3.10 B.
- B. By the end of each workday, CONTRACTOR shall submit to BMT and IOR a daily construction report denoting the daily manpower counts and a brief description/location of the workday activities. Manpower shall be broken down by trade classification such as foreman, journeyman or apprentice. The report shall

also note the date, day of the week, weather conditions, deliveries, equipment on the Project site whether active and/or idle, visitors, inspections, accidents and unusual events, meetings, stoppages, losses, delays, shortages, strikes, orders and requests of governing agencies, Construction Directive and/or Change Orders received and implemented, services disconnected and/or connected, equipment start up or tests and partial use and/or occupancies. CONTRACTOR shall also include on the daily construction report the above information for all Subcontractors at whatever tier.

- C. CONTRACTOR shall submit on a monthly basis the forms found in Sections 015000 certifying CEQA Mitigations and all forms as required within the approved Storm Water Pollution Prevention Plan (SWPPP).
- D. Postage & Delivery Costs: Postage and delivery costs for CONTRACTOR generated materials are the responsibility of the CONTRACTOR and shall not be charged to DISTRICT, regardless of whether the postage and/or delivery of CONTRACTOR generated materials resulted from a request and/or direction from DISTRICT.
- E. All other expendable field office support items specified elsewhere, including, but not limited to, furnishing toner cartridges, equipment maintenance, and bottled water, are to be supplied and paid for by CONTRACTOR. These costs are not to be deducted for the periodic replenishment of DISTRICT field office supplies.

END OF SECTION

APPENDIX A

CONSTRUCTION INDOOR AIR QUALITY (IAQ) PLAN

The Contractor shall complete and submit this Plan to the BMT no later than one hundred twenty (120) days after receipt of Notice to Proceed.

CONTRACTOR:

Name: _____ Title: _____

Telephone: _____ Fax: _____

Email: _____

I have read and understood and will implement the following Construction IAQ Plan.

Signature: _____ Date: _____

I. CONSTRUCTION VENTILATION

List all project materials requiring Construction Ventilation per Specifications and CHPS Best Practices Manual, Volume III (2006 Edition), Prerequisites EQ2.0.P7-P9 and EQ2.0.P14-P15 Attach additional sheets if necessary.

Circle the following Temporary Construction Ventilation approach to be used.

A	Ventilation will be supplied via building's HVAC system. <ul style="list-style-type: none">• Return air grilles are sealed. Exhaust is provided via open windows or doors.• All outside make-up air will be filtered (MERV 8) at the make-up source.• HVAC in dust-producing areas will be turned off during dust-producing activities. Exhaust for dust-producing areas will be provided using temporary fans ducted directly to the outdoors via open windows and doors
B	Ventilation will be accomplished via open windows, temporary ducts, and/or temporary fans ducted directly to the outdoors. <ul style="list-style-type: none">• Supply air diffusers, return air grilles, and/or open ducts will be sealed. Mak• Return air grilles will be sealed.
Required	<ul style="list-style-type: none">• Ventilation will provide no less than three air changes per hour.• Ventilation will be continuous for a period no less than 72 hours after completion of installation of VOC emitting materials.• All filters used during Construction Ventilation will be replaced prior to commencing building flush-out and upon completion of building flush-out.

II. PRECONDITIONING

List all project materials requiring Preconditioning per Specifications and CHPS Best Practices Manual, Volume III (2006 Edition), Prerequisites EQ2.0.10 Attach additional sheets if necessary.

Circle the following Preconditioning approach to be used.

A	Preconditioning will occur in dry and well-ventilated offsite location. Where is the offsite location?
B	Preconditioning will occur onsite. Check the applicable approach. <input type="checkbox"/> Ventilation will be supplied via building's HVAC system. <input type="checkbox"/> Ventilation will be accomplished via open windows, temporary ducts, and tem
Required	<ul style="list-style-type: none">• Containers and packaging will be removed prior to Preconditioning..• Preconditioning will occur for fourteen (14) continuous days prior to installation

III. SEQUENCING

List all project porous and fibrous materials requiring Sequencing consideration per Specifications and CHPS Best Practices Manual, Volume III (2006 Edition), Prerequisites EQ2.0.P11 Attach additional sheets if necessary.	
Required	<ul style="list-style-type: none">• Previously installed Porous or Fibrous Materials located in a room where VOC-Emitting Materials are to be installed will be protected with polyethylene vapor retarder. Polyethylene will not be removed until completion of a 72-hour ventilation period.• Installation of interior finish materials will complete fourteen (14) days prior the commencement of building flush-out/

IV. PROTECTION

List all project materials requiring Protection per Specifications. Describe the specifics of the plan for protecting materials from dust and moisture during transportation, delivery, storage and construction. Attach additional sheets if necessary.

Required	<ul style="list-style-type: none">• Weatherproof enclosures shall be provided to store and protect the materials from moisture sources. Materials shall be protected from rain and other moisture sources and, if resting on the ground, spacers shall be used to allow air to circulate between the ground and the materials.• Materials, including porous or Fibrous Materials, with visible microbial growth shall not be installed.• Materials that are not defined as Porous or Fibrous, but with visible microbial growth, shall be decontaminated prior to installation. Lumber exhibiting a minor amount of “lumberyard mold” need not be discarded.• Temporary ventilation will be provided during all dust producing activities. See Item I, Construction Ventilation. All supply air diffusers and return air grilles in the immediate vicinity of the dust producing activities will be sealed and the HVAC system turned off .• Ductwork will be sealed during transportation, delivery, and construction.
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END OF SECTION 015000

SECTION 016010 - MATERIALS AND EQUIPMENT

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division I Specifications, apply to this Section.

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "References" specifies the applicability of industry standards to products specified.
 - 2. Division 1 Section "Submittal Procedures" and "Construction Schedule" specifies requirements for submittal of the Contractor's Construction Schedule and the Submittal Schedule.
 - 3. Division 1 Section "Substitution Procedures" specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.03 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - a. "Named Products" are items identified by the manufacture's product name, including make or model number or other designation, shown or listed in the manufacture's published product literature that is current as of the date of the Contract Documents.
 - 2. "Materials" are products substantially shaped, cut worked, mixed finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 3. "Equipment" is a product with operation parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.04 SUBMITTALS

- A. Product List: Verify the list showing products specified in tabular form shown in the specifications, by signing and returning the Submittal Register. Include the generic names of products required. Add the manufacturer's name and proprietary product names for each item listed.
 - 1. Coordinate product list with the Contractor's Construction Schedule.
 - 2. Form: Prepare product list with the information on each item tabulated under the following column headings:
 - a. Submittal number per the submittal register.
 - b. Proprietary name, model number, and similar designations.
 - c. Manufacturer's name.
 - d. Installer's name and address.
 - 4. Initial Submittal: Within 15 days of the first Notice to Proceed, submit, through Procore, one electronic copy of all required submittals. Provide a written explanation for omissions of data and for known variations from Contract requirements.
 - 5. ARCHITECT Action: The Architect will respond in writing to Contractor within 3 weeks of receipt of the submittals. A review constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirements that products comply with Contract Documents.

1.05 QUALITY ASSURANCE

- A. Source Limitation: To the fullest extent possible, provide products of the same kind a single source.
 - 1. When specified product are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner consult with the BMT and the Architect to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability or compatibility. When a determination has been made, select products from sources producing products that possess these qualities, to the fullest extent possible.
- B. Compatibility of Option: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - 1. Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other the subcontractors.

2. If a dispute arises between subcontractors over concurrently selectable, but incompatible products, the Contractor will determine which products shall be retained and which are incompatible and must be replaced.
- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - a. Name of product and manufacturer
 - b. Model and serial number
 - c. Capacity
 - d. Speed
 - e. Ratings

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products according to the manufacture's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

PART 2 – PRODUCTS

2.01 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.
1. Provide products completed with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selections Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selections include the following:

1. Proprietary Specifications Requirements: Where Specifications name only a single product or manufacturer, and indicate “no substitutions” permitted, provide the product indicated. No substitutions will be permitted.
2. Semi Proprietary Specifications Requirements: Where Specifications name two (2) or more products or manufacturers, provide one (1) of the products indicated. No substitutions will be provided.
 - a. Where Specifications specify products or manufacturers by name accompanied by the term “or equal” or “or approved equal,” comply with the Contract Document provisions concerning “substitutions” to obtain approval for use of an unnamed product.
3. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract Requirements. Comply with Contract Document provisions concerning “substitutions” to obtain approval for use of an unnamed product.
4. Descriptive Specifications Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics. And otherwise complies with Contract requirements.
5. Performance Specifications Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.
 - a. Manufacturer’s recommendations may be contained in published product literature or by manufacturer’s certification of performance.
6. Compliance with Standards, Codes, and Regulations: Where Specifications only required compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
7. Visual Matching: Where Specifications required matching an established Sample, the Architect’s decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and/or complies with other specified requirements, comply with provisions of the Contract Documents concerning “substitutions,” for selecting the matching product in another product category.
8. Visual Selection: Where specified product requirements include the phrase “...as selected from manufacturer’s standard colors, patterns,

textures...” or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selection.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 - 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 016010

SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.
 - 10. Final Acceptance
- B. Related Sections:
 - 1. Division 1 Section "Submittal Procedures" for submitting surveys.
 - 2. Division 2 Section "Selective Demolition" for demolition and removal of selected portions of the building.
 - 3. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 4. Division 7 Section "Through-Penetration Firestop Systems" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor or professional engineer.

- B. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.
- C. Certified Surveys: Submit seven (7) copies signed by land surveyor or professional engineer. Provide both electronic CAD file and hard copy.
- D. Final Property Survey: Submit seven (7) copies showing the Work performed and record survey data. Provide both electronic CAD file and hard copy.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- C. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: Do not cut and patch structural elements unless detailed on structural drawings.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include but are not limited to the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.
 - h. Conveying systems.
 - i. Electrical wiring systems.
 - j. Operating systems of special construction.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Equipment supports.

- e. Piping, ductwork, vessels, and equipment.
 - f. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- D. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- E. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.
- 1.6 WARRANTY
- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
 3. Contractor shall locate by tracing/potholing all existing utilities in the areas where new trenching/utilities are proposed to be provided to avoid conflict and causing damage to existing utilities. All cost for repair of utilities damaged during trenching or placement of new utilities shall be borne by the Contractor. Contractor shall sequence potholing in advance or ahead of each such activities and show sequence of potholing. Plan to be submitted to BMT for approval.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and the BMT and Architect that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information or interpretation to Architect according to requirements in Division 1 Section "Project Management and Coordination."
- E. Surface and Substrate Preparation: Comply with manufacturer's recommendations for preparation of substrates to receive subsequent work.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify BMT and Architect promptly.
- B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification Identify existing benchmarks, control points, and property corners.

- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site work.
- E. Final Property Survey: Engage a land surveyor or professional engineer to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.

- B. Contractor shall coordinate work prior to field installation. Contractor will receive a 'no merit' response on any change request for failure by the Contractor or it's Sub-Contractors improperly or insufficiently coordinate their work with the drawings, specifications, manufacturer's installation instructions and other trades work.
- C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- D. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements of Division 1 Section "Summary."
- E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.

- b. Restore damaged pipe covering to its original condition.
- 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
- 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
- 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
- H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel working on Campus.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel and other Contractors working on Campus.
 - 1. Construction Schedule: Inform the BMT of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify the BMT if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

- a. Utilize containers intended for holding waste materials of type to be stored.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 1 Section "Construction Waste Management."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components.
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

- E. Manufacturer's Field Service: Comply with qualification requirements in Division 1 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.11 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

3.12 FINAL ACCEPTANCE

- A. Contractor shall satisfy or correct all deviations cited on the Deviation Notices issued by the Project Inspector and/or DSA Field Engineer before Substantial Completion can be established and before Final Acceptance. Any correction or remedy shall be at no cost to the Owner, but not limited to, design fees, labor, material and equipment cost.

END OF SECTION 017000

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SECTION 017417 - CLEANING AND SITE APPEARANCE

PART 1 – GENERAL

1.01 DESCRIPTION

A. Principal work in this Section:

1. Keep premises, adjacent private properties and public properties free from accumulations of waste, debris and rubbish caused by construction operations daily.
2. Maintain construction area in a neat and workmanlike manner. Keep all tools, equipment, and materials stored in an organized and secure fashion. Avoid layouts or methods that create a public eyesore.
3. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces.

1.02 SAFETY REQUIREMENTS

A. Standards: Maintain project in accord with State and local safety standards.

B. Hazard Control

1. Store volatile wastes in covered metal containers, and remove from premises daily.
2. Prevent accumulation of wastes which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.
4. Prevent accumulation of waste that may attract rodents, insects, or other pests.

C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not turn or bury rubbish and waste materials on project site.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains, or the Owner's waste containers. Store in containers with tight-fitting lids and remove to legal dump site.
3. Comply with the Los Angeles County, State of California, or City of Inglewood, which ever applies, Stormwater Pollution Control Requirements for Construction Sites which require implementation of the NPDES standards and SCAQMD requirements. The cost of implanting these standards and adhering to the Stormwater Pollution Control Requirements must be included in the lump sum bid for the Project.

PART 2 – PRODUCTS

2.01 MATERIALS:

- A. Use cleaning materials which will not create hazardous to health or property and which will not damage materials. Use cleaning materials and methods recommended

by the manufacturer of the surface material to be cleaned. Use cleaning materials only on surfaces recommended by the cleaning materials manufacturer.

PART 3 – EXECUTION

3.01 CLEAN-UP DURING CONSTRUCTION

- A. Keep premises, adjacent properties and public properties free from accumulations of waste materials and rubbish. Remove debris and dirt from public property promptly: sweep sidewalks and adjacent streets daily when soiled by work performed under this Contract. Maintain the existing landscaped areas within the fenced area of the construction site, including but not limited to weekly mowing and irrigation as required.
- B. Remove or paint over, as appropriate to the substrate, graffiti on the site or surrounding fence daily.
- C. Wet down materials and rubbish to settle dust and prevent it from blowing.
- D. At least once a week, or more often if required, dispose of waste materials, debris and rubbish off the site in a legal manner. Remove combustible materials such as paper and cardboard daily. Bury no such waste material and debris on the site. Burning of trash and debris on the site will not be permitted. All containers must be emptied as soon as they reach 75% of capacity.
- E. Provide on-site containers for collection of waste materials, debris and rubbish. Provide a collection can at each location used as an eating area. Pick-up all garbage daily.
- F. At the conclusion of each work day, Contractor will walk the site and collect all debris and rubbish and store all loose materials.
- G. Remove waste materials, debris and rubbish from site and legally dispose of at legal public or private dumping areas off Owner's property. Location of dump for trash and debris and length of haul is to the Contractor's responsibility.
- H. Handle materials in a controlled manner with as few handlings as possible, do not drop or throw materials from heights.
- I. Owner's right to provide clean up at the Contractor's Expense.
 - 1. Should the Construction Manager, or IOR determine that the Contractor is failing to maintain the site in a properly clean and safe manner, they will notify the Contractor that corrective action must be taken. Should the Contractors fail to clean the site after sufficient notification, the Owner reserves the right to have the site cleaned at the Contractor's expense.
 - 2. In the case of public or safety hazard, the Owner reserves the right to have the hazard corrected immediately at the Contractor's expense.
- J. Contaminated Earth:

1. Clean-up operations include the removal and disposal of earth contaminated or unsuitable for support of plant life in planting areas, and filling of resulting excavations with suitable soil.
2. Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry, and similar materials, areas in which washing out of concrete and plaster mixers or washing of tools and like cleaning operations have been performed, and areas that have been oiled, paved, or chemically treated.
3. Do not dispose of waste oil, solvents, paint, solutions, mortar, concrete or any construction material or like penetrating material by depositing or burying on the Owner's property.

3.02 FINAL SITE CLEAN-UP:

- A. In preparation of Substantial Completion or Occupancy conduct a thorough cleaning of all work.
- B. Before final inspection and after all construction activity is essentially complete, thoroughly clean the buildings, utilizing professional building cleaners. Items to be cleaned include, but are not limited to: all glass, plastic, doors, opening frames, grilles, trim, exposed nonferrous metal surfaces, floor covering, light fixtures and plates, plumbing fixtures and trim, and all finish surfaces throughout the construction. Thoroughly remove ink trademarks from all surfaces, Vacuum clean the buildings (s) and remove all spots, smears, dust, debris, hand prints and defacements of every sort, including those of vandals. Follow the recommendations of the manufacturer of the materials and items to be cleaned for all cleaning, polishing, and treatment such as waxing.
- C. Repair, patch and touch-up marred surfaces to specified finish to match adjacent surfaces.
- D. Also, before final inspection, thoroughly clean the entire site and put it into a neat, acceptable condition. Remove from the entire site all construction waste and unused materials, rubbish, loose rock and stones, excess earth, roots, weeds, and all debris of any description resulting from the Work. Hose down and scrub where necessary all new concrete and asphalt pavement and walks dirtied as a result of the Work. Thoroughly remove mortar droppings from concrete walks and other pavements.
- E. Keep project clean until Final Acceptance by the Owner.
 1. Should the Construction Manager or IOR determine that the Contractor is failing to maintain the site in a properly clean and safe manner, they will notify the Contractor that corrective action must be taken. Should the Contractor fail to clean the site after sufficient notification, the Owner reserves the right to have the site cleaned at the Contractor's expense.
 2. In the case of public or safety hazard, the Owner reserves the right to have the hazard corrected immediately, at the Contractor's expense.

END OF SECTION 017417

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Recycling nonhazardous demolition and construction waste.
 - 2. Disposing of nonhazardous demolition and construction waste.
- B. Related Sections include the following:
 - 1. Division 1 Section "Construction Facilities and Temporary Controls" for environmental-protection measures during construction.
 - 2. Division 2 Section "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.
 - 3. Division 31 Section "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE GOALS

- A. Salvage/Recycle Goals: District's goal is to salvage and recycle not less than 50 percent of nonhazardous demolition and construction waste including the following materials:

1. Demolition Waste:

- a. Asphaltic concrete paving.
- b. Concrete.
- c. Concrete reinforcing steel.
- d. Brick.
- e. Concrete masonry units.
- f. Wood studs.
- g. Wood joists.
- h. Plywood and oriented strand board.
- i. Wood paneling.
- j. Wood trim.
- k. Structural and miscellaneous steel.
- l. Rough hardware.
- m. Roofing.
- n. Insulation.
- o. Doors and frames.
- p. Door hardware.
- q. Windows.
- r. Glazing.
- s. Metal studs.
- t. Gypsum board.
- u. Acoustical tile and panels.
- v. Carpet.
- w. Carpet pad.
- x. Demountable partitions.
- y. Equipment.
- z. Cabinets.
- aa. Plumbing fixtures.
- bb. Piping.
- cc. Supports and hangers.
- dd. Valves.
- ee. Sprinklers.
- ff. Mechanical equipment.
- gg. Refrigerants.
- hh. Electrical conduit.
- ii. Copper wiring.
- jj. Lighting fixtures.
- kk. Lamps.
- ll. Ballasts.
- mm. Electrical devices.
- nn. Switchgear and panel boards.
- oo. Transformers.

2. Construction Waste:

- a. Site-clearing waste.
- b. Lumber.
- c. Wood sheet materials.
- d. Wood trim.
- e. Metals.
- f. Roofing.
- g. Insulation.
- h. Carpet.
- i. Gypsum board.
- j. Piping.
- k. Electrical conduit.
- l. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.

1.5 SUBMITTALS

- A. Waste Management Plan: Submit one electronic copy of plan to BMT within 10 days of date established for the Notice to Proceed.
- B. Contractor shall submit weight tickets, bill of lading, or tonnage reports of any waste materials sent out for recycling from a work site within the District to the Construction Manager on a monthly basis with the Pay Application submission.

1.6 INFORMATIONAL SUBMITTALS

- A. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- B. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- C. Qualification Data: For refrigerant recovery technician.
- D. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements:
 - 1. Comply with hauling and disposal regulations of authorities having jurisdiction.
 - 2. Comply with applicable provisions in California Integrated Waste Management Act of 1989 (AB 939).
 - 3. Comply with applicable provisions in California Code of Regulations Title 14, Section 18700 et seq.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan including responsibilities of Design-Builder's Waste Management Coordinator.
 - 2. Review requirements for documenting quantities of each type of waste and its disposition.
 - 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - 5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, waste reduction work plan. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by District. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with Division 1 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off District's property and transport to recycling receiver or processor.

3.3 RECYCLING DEMOLITION WASTE

- A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 1. Break up and transport concrete to concrete-recycling facility.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 1. Clean and stack undamaged, whole masonry units on wood pallets.
 2. Transport masonry to masonry-recycling facility.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- E. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- F. Asphalt Roofing: Separate organic and glass-fiber asphalt felts. Remove and dispose of nails, staples, and accessories.
- G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- H. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
 1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.
- I. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
 1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

- J. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- K. Plumbing Fixtures: Separate by type and size.
- L. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- M. Lighting Fixtures: Separate lamps by type and protect from breakage.
- N. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panel boards, circuit breakers, and other devices by type.
- O. Conduit: Reduce conduit to straight lengths and store by type and size.

3.4 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - 2. Polystyrene Packaging: Separate and bag materials.
 - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Site-Clearing Wastes: Chip brush, branches, and trees on-site or at landfill facility.
 - 1. Comply with requirements in Division 32 Section "Exterior Plants" for use of chipped organic waste as organic mulch.
- C. Wood Materials:
 - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
 - a. Comply with requirements in Division 32 Section "Exterior Plants." for use of clean sawdust as organic mulch.
- D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
 - 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.
 - a. Comply with requirements in Division 32 Section "Exterior Plants." for use of clean ground gypsum board as inorganic soil amendment.

3.5 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off District's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Project record documents submittal
 - 4. Operation and maintenance manual submittal
 - 5. Warranties.
 - 6. DISTRICT orientation and instruction
 - 7. Final cleaning.
- B. Related Sections:
 - 1. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
 - 2. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Division 1 Section "Demonstration and Training" for requirements for instructing District's personnel.
 - 5. Divisions 2 through 32 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise District of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Obtain and submit releases permitting District unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 6. Deliver tools, spare parts, extra materials, and similar items to location designated by District. Label with manufacturer's name and model number where applicable.
 7. Make final changeover of permanent locks and deliver keys to District. Advise District's personnel of changeover in security provisions.
 8. Complete startup testing of systems.
 9. Submit test/adjust/balance records.
 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 11. Advise District of changeover in heat and other utilities.
 12. Completion of Commissioning and addressing all commissioning items from the final report.
 13. Submit changeover information related to District's occupancy, use, operation, and maintenance.
 14. Complete final cleaning requirements, including touchup painting.
 15. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 16. Receive signed entire scope of work DSA form 6-PI from project Inspector of Record and signed entire scope of work DSA form 6-AE from the Architect of Record and the project design engineers of record.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, the BMT and IOR will either proceed with inspection or notify Contractor of unfulfilled requirements. BMT will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by BMT, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.4 PROJECT RECORD DOCUMENT SUBMITTAL

- A. General: Do not use project record documents for construction purposes. Protect record documents from deterioration and loss. Provide access to record documents for BMT or IOR and reference during normal working hours. Project record document shall be updated on a weekly basis. Prior to submitting each application for payment, secure IOR and BMT approval of project record documents.
- B. Record Drawings: Maintain, in accordance with specification 17839 – Project Record Documents, one (1) electronic copy of the drawings and one (1) clean, undamaged set of blue or black line white prints of Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies

substantially from the Work as originally shown. Mark which Drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Drawings. Provide detailed and accurate field dimensions for concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work. Date and number entries in the same format as submitted. Call attention to entry by a “cloud” around the affected areas.
 2. Mark new information important to DISTRICT but was not shown on Drawings or Shop Drawings.
 3. Utility location and depth below finished grade and above ceilings and attic spaces shall be fully dimensioned and indicated on record drawings. Dimensions shall be measured from building lines or permanent landmarks and shall be triangulated to those features.
 4. Note related Change Order or Construction Directive numbers where applicable. RFI submissions shall be referenced on each affected sheet, Drawing and Shop Drawing.
 5. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
 6. Prior to Contract Completion of the Work, review and approval of the project record drawings by the CONTRACTOR and ARCHITECT is required. Prepare a final set of project record drawings using reproducible vellum. Submit final set of Record Drawings in pdf format and CADD/BIM, to Construction Manager for review and acceptance.
- C. Record Specifications: Maintain, in accordance with specification 17839 – Project Record Documents, one (1) electronic copy of the specification and one (1) hard copy of the Specifications, including Addenda. Include with the Specifications two copies of other written Contract Documents, such as Change Orders or Construction Directives issued during construction.
1. Mark these record documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to substitutions and selection of options and information on concealed Work that cannot otherwise be readily discerned later by direct observation.
 3. Note related record document information with Product Data.
 4. Prior to Contract Completion of the Work, submit record Specifications to DISTRICT records.

- D. Record Product Data: Maintain two copies of each Product Data submittal. Note related Change Orders and Construction Directives and mark-up of record drawings and Specifications.
 - 1. Mark these documents to illustrate significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the Project site and from the manufacturer's installation instructions and recommendations.
 - 2. Provide detailed and accurate information regarding concealed products and portions of Work that cannot otherwise be readily discerned later by direct observation.
 - 3. Prior to Contract Completion, submit complete set of record Product Data to DISTRICT records.
- E. Record Samples: Immediately prior to Substantial Completion, CONTRACTOR shall meet with BMT at the Project site to determine which Samples are to be transmitted to DISTRICT for record purposes. Comply with BMT instructions regarding delivery to DISTRICT storage area.
- F. Miscellaneous Records: Refer to other Specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Prior to the date of Contract Completion, complete and compile miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit for DISTRICT records.
- G. Maintenance Manuals: Prior to Substantial Completion, organize operation and maintenance data into suitable two sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-3", 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Submit to DISTRICT records. Include the following types of information. All information contained in the Maintenance Manuals are also required in pdf. electronic format. PDF documents shall be readable, searchable and provide bookmarks to separate sections to properly organize the information.
 - 1. Emergency instructions
 - 2. Spare parts list
 - 3. Copies of warranties
 - 4. Wiring diagrams
 - 5. Recommended "turn-around" cycles
 - 6. Inspection procedures
 - 7. Shop Drawings and Product Data
 - 8. Fixture lamping schedule

- H. Verified Reports: Construction progress of the Work shall be reported to DSA via a duly verified report as per Sections 4-336 and 4-343 of the California Building Standards Administrative Code.

1.6 OPERATION AND MAINTENANCE:

- A. Operation and Maintenance Instructions: Prior to Substantial Completion, arrange for each installer of equipment that requires regular operation and maintenance to meet with designated DISTRICT personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:
 - 1. Maintenance manuals
 - 2. Spare parts and materials
 - 3. Tools
 - 4. Lubricants
 - 5. Fuels
 - 6. Identification systems
 - 7. Control sequences
 - 8. Hazards
 - 9. Cleaning
 - 10. Warranties and bonds
 - 11. Maintenance agreements and similar continuing commitments
- B. As part of instruction for operating equipment, demonstrate the following procedures:
 - 1. Start-up
 - 2. Shutdown
 - 3. Emergency operations
 - 4. Noise and vibration adjustments
 - 5. Safety procedures
 - 6. Economy and efficiency adjustments
 - 7. Effective energy utilization

- C. Notice Of Termination: CONTRACTOR shall submit a Notice of Termination (NOT) to the local Regional Water Quality Control Board, RWQCB. Provide a copy of NOT to BMT.

1.7 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
 - 1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
 - 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report and warranty.
 - 5. Instruct District's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A or Contractor's comparable form.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of the BMT
 - d. Name of Architect.
 - e. Name of Contractor.
 - f. Page number.

4. Submit list of incomplete items in the following format:
 - a. Five paper copies of list, unless otherwise indicated. Architect will return two copies.

1.9 WARRANTIES

- A. Submittal Time: Submit written warranties for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by District during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 1. Use cleaning products that comply with maximum allowable VOC levels of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even- textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter upon inspection.

- 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report upon completion of cleaning.
 - r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - s. Leave Project clean and ready for occupancy.
- C. Final Cleaning: The District will install its furnishings and equipment following cleaning included in Section B above and before Final Acceptance. The Contractor shall include an additional final cleaning of all surfaces of furnishing, equipment, and the balance of the Project interior following installation of furnishings, equipment, etc. by District's vendor.
- D. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- E. Construction Waste Disposal: Comply with waste disposal requirements in Division 1 Section "Construction Waste Management."

END OF SECTION 017700

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SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Maintenance manuals for the care and maintenance of products, materials, finishes, systems and equipment.
- B. Related Sections include the following:
 - 1. Division 1 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 - 2. Division 1 Section "Closeout Procedures" for submitting operation and maintenance manuals.
 - 3. Division 1 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
 - 4. Divisions 2 through 32 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Initial Submittal: Submit one electronic pdf draft copy of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Architect will return one copy of draft and mark whether general scope and content of manual are acceptable.

- B. Final Submittal: Submit one electronic pdf copy of each manual in final form at least 21 days before final inspection. Construction Manager will return copy with comments within 21 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit revised copy of each corrected manual within 15 days of receipt of Architect's comments.
 - 2. Provide an external hard drive with the capacity to hold four (4) Terabytes of Information to the Owner upon final completion that contains the finalized and approved manuals.

1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Format: Provide one (1) hard copy per the requirements listed within the specification and one electronic pdf copy that is a clean copy of the original editable document printed to a ".pdf" file format and text searchable capable and organized in the same format as the hard copy.
- B. Organization: In electronic format, include a section and folder in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- C. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- D. 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.
- E. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- F. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with 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."

2.2 MANUALS, GENERAL (ONE SCANNED ELECTRONIC COPY ALSO REQUIRED)

- A. Format: Provide one (1) hard copy per the requirements listed within the specification and one electronic pdf copy that is searchable and organized in the same format as the hard copy.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- C. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Design-Builder.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.
- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. 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.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
 - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by- 280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. 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. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. 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.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross- referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. 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. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. 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.
- D. Emergency Procedures: Include the following, as applicable:
 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.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions.
 2. Performance and design criteria if Design-Builder 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.
- B. 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.
- C. 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.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- 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: 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.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

- 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.
- 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. Spare Parts List and Source Information: 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.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. 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.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."
- G. Comply with Division 1 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017836 - WARRANTIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers and/or installer's standard warranties on products and special product warranties.

- 1. Refer to the General Conditions for terms of the guarantee period for the Work.

1.02 RELATED SECTIONS

- A. Section 016010: Materials and Equipment
- B. Section 017700: Closeout Procedures

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.01 WARRANTY REQUIREMENTS

- A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties shall not relieve CONTRACTOR of the warranty of the Work incorporating such materials, products, and/or equipment. Manufacturer's disclaimers and limitations on warranties do not relieve suppliers, manufacturers, installers, and Subcontractors of the requirement to countersign special warranties with CONTRACTOR.
- B. Standard warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to DISTRICT.
- C. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for DISTRICT.
- D. Related Damages and Losses: When correcting failed or defective warranted Work, remove and replace Work that has been damaged as a result of such failure or which must be removed and replaced to provide access for correction of warranted Work.
- E. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement with the reinstated warranty equal to the original warranty.

- F. Replacement Cost: Upon determination the Work covered by a warranty has failed and/or is defective, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. CONTRACTOR is responsible for the cost of replacing or rebuilding defective Work regardless of whether DISTRICT has benefited from use of the Work through a portion of its anticipated useful service life.
- G. DISTRICT Recourse: Expressed warranties made to DISTRICT are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which DISTRICT can enforce such other duties, obligations, rights, or remedies.
- H. Rejection of Warranties: BMT reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- I. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, BMT reserves the right to refuse to accept the Work until CONTRACTOR presents evidence the entities required to countersign such commitments have done so.

3.02 SUBMITTALS

- A. Submit written preliminary warranties prior to Substantial Completion, and final warranties prior to Contract Completion. If the certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, submit written warranties as set forth in the certificate of Substantial Completion.
 - 1. When a designated portion of the Work is partially used and/or occupied by DISTRICT, submit properly executed warranties to ARCHITECT within fifteen (15) days of the Partial Use or Occupancy of the designated portion of the Work.
- B. When the Contract Documents require CONTRACTOR, or CONTRACTOR and a Subcontractor, installer, supplier or manufacturer to execute a special warranty, prepare a written document containing appropriate terms and identification, ready for execution by the required parties. Submit a draft to BMT, through the ARCHITECT, for approval prior to final execution.
 - 1. Refer to Divisions 02 through 32 for specific content requirements and particular requirements for submitting special warranties.
- C. Form of Submittal: Prior to Contract Completion, compile two copies of each required final warranty properly executed by CONTRACTOR, or by CONTRACTOR and Subcontractor, installer, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the Specifications.
- D. Once draft warranties are approved, provide an electronic copy, through Procore, of all warranties as well as one original "hard Copy" in a heavy-duty, commercial-

quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½ by 11" (115 by 280 mm) paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the item or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.
 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title and/or name, and name of CONTRACTOR.
 3. When warranted Work requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.
- E. Contractor to provide a directory in electronic excel format and hard copy with information sorted by specification to list the following information, at a minimum: Specification Section, Description of Specification Section, Actual System or Work Installed, Subcontractor, Subcontractor Contact Person, Subcontractor Contact Person Phone Number, Subcontractor Contact Person e-mail address

END OF SECTION 017836

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SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings and Documents - Provide Hard copy and electronic files in both of the following formats:
 - a. Readable and searchable PDF format
 - b. BIM (Revit, ArchiCAD, etc. to match files as provided by the Design Team.) and/ or CADD (to match files as provided by the Design Team.)
 - 2. Record Specifications - Provide Hard copy, pdf format, and word document files.
 - 3. Record Product Data - Provide Hard copy and pdf format.
- B. Related Sections include the following:
 - 1. Division 1 Section "Closeout Procedures" for general closeout procedures.
 - 2. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 3. Divisions 2 through 32 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of corrected Record Transparencies and one set of marked-up Record Prints and electronic files with above information.
- B. Record Specifications: Submit three copies of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit three copies of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

- D. Miscellaneous Record Submittals: Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit three copies of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Construction Working Drawings and As-Built PDF files: Maintain one set of PDF files of the Contract Drawings and Shop Drawings. This set shall be maintained continuously by the General Contractor with access rights for viewing by the Construction Manager, Architect of Record, Inspector of Record and any other group authorized by the Construction Manager or General Contractor.
 - 1. Preparation: Mark PDF files to show the actual installation where installation varies from that shown originally. Date each entry on the Drawings. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record PDFs. Contractor shall use Bluebeam Revu or equal software in order to generate the PDF mark ups. Contractor shall store the electronic PDF files in a central web based location and allow viewing access to the Project team.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders. (ASIs, responses to RFIs, etc.)
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 - 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

4. Mark record sets with red-color. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Construction Manager determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record PDFs: Organize Record PDFs and newly prepared Record Drawing PDFs into manageable sets. Include identification in each PDF file.
 3. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
 4. Record CADD Drawings: Organize CADD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CADD file.
 5. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.
- 2.2 Record As-Built Drawings:
- A. As-Built Drawings: Drawings showing final as-built conditions of the project. The final BIM and CADD as-built drawings/model shall consist of one set of electronic BIM or CADD drawing files in the specified format, and one set of the approved working as-built drawings.
- B. As-Built Drawings as Applies to BIM and CADD.
1. It is the scope of this section to provide guidance to the Contractor on preparing as-built drawings for construction projects. An as-built drawing is a construction drawing revised to reflect the final as-built conditions of the project as a result of modifications and corrections to the project design required during construction. The final as-built drawings shall not

have the appearance of marked up drawings, but that of professionally prepared drawings as if they were the "as designed" drawings.

C. Maintenance of As-Built Drawings

1. Provide timely updates of the as-builts, carefully maintaining a record set of working as-built drawings at the job site, marked in red, of all changes and corrections from the contract drawings. Enter changes and corrections on drawings promptly to reflect "Current Construction". Provide this update on a weekly basis for the PDF drawings and on a quarterly basis for the BIM / CADD files. Provide confirmation that the as-builts are up to date with the submission of the monthly project schedule. Contractor to review and provide written documentation or stamp each month signifying review / completeness that the as-builts are updated.
2. If the Contractors fails to maintain the as-built drawings, the District will retain an amount from the monthly payment representing the estimated monthly cost of maintaining the as-built drawings. Final payment with respect to separately priced facilities or the contract as a whole, will be withheld until the Contractor submits acceptable as-built drawings and the District approves them.
3. The marked-up set of PDF drawings shall reflect any changes, alterations, adjustments or modifications. Changes must be reflected on all sheets affected by the change. Changes shall include marking the drawings to reflect structural details, foundation layouts, equipment sizes, and other extensions of design.
4. Typically, room numbers shown on the contract drawings are selected for design convenience and do not represent the actual numbers intended for use by the end user. Final as-built drawings shall reflect actual room numbers adopted by the end user.
5. Indicate on the drawings the actual location, kinds and sizes of all sub-surface utility lines. On the as-built drawings, show offset dimensions of each end run, including changes of direction by two permanently fixed surface features in order for the underground utility lines to be located in the future.
6. Show valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Record the average elevation of the top of each run or underground structure.

D. As-Built Conditions that are Different from the Contract Drawings

1. Accurately reflect all as-built conditions that are different, such as dimensions, road alignments and grades, and drainage and elevations, from the contract drawings on each drawing. If the as-built condition is accurately reflected on a shop drawing, then furnish that shop drawing in BIM or CADD format. Reference on the final as-built construction drawing the shop drawing file that includes the as-built information. In turn, the shop drawing will reference the applicable construction as-built drawing. Delete any options shown on drawings and not selected, clearly reflect options selected on final as-built drawings.

E. Additional As-Built Information that Exceeds the Detail Shown on the Contract Drawings:

1. These as-built conditions include those that reflect structural details, foundation layouts, equipment, sizes, mechanical and electrical room layouts and other extensions of design, that were not shown in the project design documents because the exact details were not known until after

the time of approved shop drawings. It is recognized that these shop drawing submittals revised to show as-built conditions will serve as the as-built record without actual incorporation into the contract drawings. Include fire protection details, such as wiring, piping, and equipment drawings.

- F. The District will withhold the amount of \$50,000., or 1% of the total construction contract value, whichever is greater, until the final as-built drawing submittal has been approved by the District.

2.3 RECORD SPECIFICATIONS

- A. Preparation: This manual shall be maintained continuously by the General Contractor with access rights for viewing by the Construction Manager, Architect of Record, Inspector of Record and any other group authorized by the Construction Manager or General Contractor. Mark PDF files of the Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications. Contractor shall use Bluebeam Revu or equal software in order to generate the PDF mark ups. Contractor shall store the electronic PDF files in a central web based location and allow viewing access to the Project Team.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 - 5. Note related ASIs, RFIs, Change Orders, Change Directives, Record Product Data, and Record Drawings where applicable.

2.4 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.5 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of

the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Samples in the field office. Store Record Documents in PDF format on a shared web based location. apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in legible condition, protected from deterioration and loss. Provide access to the electronic Project Record Documents for Design Team, Construction Manager and the IOR's reference at all times.

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing District's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training videotapes.
- B. Related Sections include the following:
 - 1. Division 1 Section "Project Management and Coordination" for requirements for pre-instruction conferences.
 - 2. Divisions 2 through 32 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit three copies of 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. Include learning objective and outline for each training module.
 - 1. At completion of training, submit two complete training manual(s) for District's use.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.
- C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Videotapes: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Architect.
 - d. Name of Construction Manager
 - e. Name of Design-Builder.
 - f. Date videotape was recorded.
 - g. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
2. Transcript: Prepared on 8-1/2-by-11-inch (215-by-280-mm) paper, punched and bound in heavy-duty, 3-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding videotape. Include name of Project and date of videotape on each page.

1.5 QUALITY ASSURANCE

- A. Facilitator Qualifications: 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 Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Photographer Qualifications: A professional photographer who is experienced photographing construction projects.
- D. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." 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.

1.6 COORDINATION

- A. Coordinate instruction schedule with District's operations. Adjust schedule as required to minimize disrupting District's operations.

- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. 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 Architect.
- D. Coordination of training for all systems requiring training noted within division 2 through 48 shall be scheduled to occur within a one (1) week period. Do not schedule any training until all systems are signed off by the project inspection and Cx agent.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
 - 1. Motorized doors, including **overhead coiling doors, overhead coiling grilles and automatic entrance doors.**
 - 2. Equipment, including **projection screens, waste compactors, food-service equipment, appliances and** other miscellaneous equipment.
 - 3. Fire-protection systems, including **fire alarm, fire pumps and fire-extinguishing systems.**
 - 4. Intrusion detection systems.
 - 5. Conveying systems, including conveyor Equipment.
 - 6. Medical equipment, including medical gas equipment and piping.
 - 7. Laboratory equipment, N/A
 - 8. Heat generation, including **boilers, feed water equipment, pumps, steam distribution piping and water distribution piping.**
 - 9. Refrigeration systems, including **chillers, cooling towers, condensers, pumps and distribution piping.**
 - 10. HVAC systems, including **air-handling equipment, air distribution systems and terminal equipment and devices.**
 - 11. HVAC instrumentation and controls.
 - 12. Electrical service and distribution, including **transformers, switchboards, panelboards, uninterruptible power supplies, monitoring controls and motor controls.**
 - 13. Packaged engine generators, including transfer switches.
 - 14. Lighting equipment and controls.
 - 15. Communication systems, including **intercommunication, surveillance, clocks and programming, voice and data, AVIT Equipment and television** equipment.
 - 16. Any Fire Alarm equipment, Monitoring equipment and Energy Management system.
- B. Training Modules: 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 if Design-Builder is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 - h. Monitoring Equipment
3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 - g. Monitoring Equipment
4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
 - n. Monitoring Equipment

5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Provide overview of actual installation of system and overview of the contract documents. Note any deviations of the installed system from the contract documents during training.
- C. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate with District for number of participants, instruction times, and location.

- B. Engage qualified instructors to instruct District's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. District will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with District with at least seven days' advance notice.
- D. Evaluation: 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.
- E. Cleanup: Collect used and leftover educational materials and give to District. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

3.3 DEMONSTRATION AND TRAINING VIDEOTAPES

- A. General: Engage a qualified commercial photographer to record demonstration and training videotapes. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Videotape Format: Provide high-quality VHS color videotape in full-size cassettes.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.
- D. Narration: Describe scenes on videotape by audio narration by microphone while videotape is recorded or by dubbing audio narration off-site after videotape is recorded. Include description of items being viewed. Describe vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- E. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.

END OF SECTION 017900