OJAI UNIFIED SCHOOL DISTRICT

LIBRARY RENOVATION

At

MATILIJA MIDDLE SCHOOL

PROJECT MANUAL
CONSTRUCTION DOCUMENTS

JANUARY 22, 2021

HARTMANN
ARCHITECTURE
STUDIO

PROJECT MANUAL
FOR
MATILIJA MIDDLE SCHOOL
LIBRARY RENOVATION

OJAI UNIFIED SCHOOL DISTRICT
OJAI, CALIFORNIA

SPECIFICATIONS

_____
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SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Work covered by the Contract Documents.
   2. Type of the Contract.
   3. Work phases.
   4. Use of premises.
   5. Owner's occupancy requirements.
   6. Work restrictions.
   7. Specification formats and conventions.
   8. Deferred Approvals.
   9. Pollution Control.
   10. Storm Water Pollution Prevention Plan.
   11. Lead-Containing materials.
   12. Additional DSA requirements.

B. Related Sections include the following, but not limited to:
   1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
   2. Division 1 Section “Closeout Procedures” for mechanical and electrical Title 24 Certificate of Acceptance requirements.

1.3 SUBMITTALS

Contractor shall submit written statement of responsibility per CBC 1706A.1

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Site improvements at an existing high school baseball field.
   1. Matilija Middle School
      703 El Paseo Rd.
      Ojai, CA 93023

B. Owner: Ojai Unified School District.

C. Architect: Hartmann Architecture Studio.

D. The Work consists of the following:
   1. In summary, the work includes the alteration of non-structural, non-fire-rated partition walls, refinishing of existing walls and floors, and new casework in the library. A code-compliant concrete ramp and accessible signage at the exterior building entrance are also part of the project.

      See detailed project scope of work on drawing sheet G-001.

   2. The intent of these drawings and specifications is that the alteration, rehabilitation or reconstruction is to be in accordance with Title 24, California Code of Regulations. Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the contract documents wherein the finished work will not comply with Title 24, California Code of Regulations, a change order, or a separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by the District before proceeding with the repair work.

1.5 TYPE OF CONTRACT

A. Project will be constructed under a competitively bid public contract.

1.6 WORK PHASES

A. The Work shall be conducted in single phase.

1.7 USE OF PREMISES

A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.

B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
   1. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public.
   2. Driveways and Entrances: Keep driveways parking garage, 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.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.8 OWNER'S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and existing building during 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 authorities having jurisdiction.
2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

B. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.
2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
3. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.
4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

1.9 WORK RESTRICTIONS

A. On-Site Work Hours:
1. Comply with General Conditions.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

1.10 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI's MasterFormat 2016 numbering system.
1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.

B. 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. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate.

Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.11 DEFERRED APPROVALS (WHEN NEEDED)

A. Deferred approval items are listed on Drawings.

B. Contractor is solely responsible for obtaining all necessary approvals and all costs associated with obtaining the approval of DSA including all Architectural and Engineering fees for coordinating with DSA beyond review and shipping of two separate Contractor provided submittals. Do not commence installation of any deferred approval item until all approvals have been obtained.

C. Deferred Approvals. Only where a portion of the construction cannot be adequately detailed on the approved plans because of variations in product design and/or manufacturer, the approval of plans for such portion, when specifically accepted by DSA, may be deferred until the material suppliers are selected provided the following conditions are met:
   1. The project plans clearly indicate that a deferred approval by DSA is required for the indicated portions of the work prior to fabrication and installation.
   2. The project plans and specifications adequately describe the performance and loading criteria for such work.
   3. An architect or registered engineer stamps and signs the plans and specifications for the deferred approval item. The architect or engineer in general responsible charge of the design of the project shall submit the plans and specifications for the deferred approval item to the enforcement agency, with notation indicating that the deferred approval documents have been found to be in general conformance with the design of the building.
   4. Fabrication of deferred approval items shall not begin without first obtaining the approval of plans and specifications by DSA.

D. Deferred Approval Submittals, General:
   1. Submit initial deferred approval submittal to Architect within 35 calendar days from the date of issuance of Notice to Proceed, and before any materials are delivered to the job site. Contractor is solely responsible for obtaining all necessary approvals. Do not commence installation of any deferred approval item until all approvals have been obtained.
   2. Product Data: Submit manufacturer’s specifications and certified test reports made by an independent testing organization for each type and class of material to show compliance with code requirements and gain approval of DSA.
   3. Shop Drawings: Submit complete shop drawings including dimensioned plans, elevations, and all details of typical sections and connections. Shop drawings shall

show design loads and all details of the installation. Title sheet of shop drawings shall list testing requirements and shall state that licensed engineer shall review and certify the completed installation is in accordance with the approved shop drawings. Shop drawings shall be stamped, dated and signed by professional engineer licensed in the State of California as evidence of his or her responsibility for the work.

4. Shop drawings:
   a. Format: 30" x 42" sheet format with border and title block identifying, at a minimum, the project name, project number, project location, date, contractor and structural engineer of record.
   b. 1 set of reproducible shop drawings each submittal review.
   c. 1 set of reproducible shop drawings for each plan check review.
   d. 1 set of reproducible mylars of shop drawings approved by DSA.
   e. Electronic files may be used with prior approval from the Architect.
5. Calculations: Submit calculations prepared by a professional engineer licensed in the State of California. Engineer shall sign, date and stamp calculations as evidence of his or her responsibility for the work.
6. Submittals shall be approved first by the Architect, then by the DSA.
7. See additional requirements in Division 1 Section "Submittal Procedures".

1.12 POLLUTION CONTROL

A. Provide positive methods, means and facilities required to prevent contamination of the soil, water or atmosphere by the discharge of noxious substances from the construction operations.

1.13 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (WHEN NEEDED)

A. The contractor shall submit a Storm Water Pollution Prevention Plan for approval by the local Agency Having Jurisdiction's Public Works and Community Development Departments. The plan shall show erosion control measures and indicate locations of staging, fueling, equipment and employee parking, and storage/stockpile locations. Locations for concrete washout shall be shown, as well as gravel site entrances and/or metal grates to keep soil from being deposited on public streets. The plan shall note that street sweeping shall occur as often as necessary, to ensure that no dirt or dust will remain on public streets. Drip pans shall be used under parked equipment and visqueen shall be shown on the plan to protect the soil in the fueling area. Only minor vehicle maintenance shall occur on-site. Maintenance shall occur in the fueling area and soil shall be protected by drip pans and visqueen.

B. Prepare a Storm Water Pollution Prevention Plan (SWPPP) and file a Notice of Intent with the State Water Resources Control Board for this project. The SWPPP will provide Best Management Practice (BMP) methods and controls for wet weather grading activities and erosion control for both onsite and offsite improvements, in accordance with the requirements of the NPDES General Permit for Storm Water Discharges Associated with Construction Activity. The SWPPP shall include an erosion control plan.

1.14 MISCELLANEOUS PROVISIONS

A. Noise and Dust Control: As specified in General Conditions.

1.15 ADDITIONAL REQUIREMENTS

A. Comply with the following:
   1. Compliance with Title 24, for Parts 1-6 and 9.
   2. Title 24, Parts 1-5 shall be kept on site during construction.
   3. Construction Change Document (Section 4-338 (c), Part 1) must be signed by all the following:
      a. A/E of Record.
      b. Owner (change order only).
      c. SEOR (when applicable).
      d. Delegated Professional Engineer (when applicable).
   4. Project Inspector and testing lab must be employed by the Owner and approved by all of the following:
      a. A/E of Record.
      b. SEOR (when applicable).

B. Tests and Inspections - Chapter 17A:
   1. All tests shall be performed by a testing facility acceptable to the architect. The testing facility shall be directly employed by the school district and no other entity or individual. Section Title 24, Part 1, Section 4-338(c).
   2. Test reports shall be addressed to, and sent to, the school district by the testing facility. Copies of all test reports shall be sent to the architect, the engineer, and the project inspector by the testing facility. All reports shall be sent within 7 calendar days of the date of the test. See Title 24, Part 1, Section 4-335(d).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 23 00

ALTERNATES

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. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
   1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. All substitutions affecting access compliance safety, fire life safety, or structural safety shall be considered as Construction Change Document or Addenda, and shall be approved by DSA prior to fabrication and installation.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE

A. As indicated on Drawings.

END OF SECTION

SECTION 01 26 00
CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:
   1. Division 1 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect may issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, or Changes not affecting the Structural Safety, Access Compliance or Fire & Life Safety portions of the work, on AIA Document G710, "Architect's Supplemental Instructions" or an equivalent form acceptable to District.

1.4 REQUEST FOR PROPOSAL (“RFP”)

A. Owner-Initiated Proposal Requests: Architect may issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
   1. Proposal Requests issued are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
   2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
      a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
      b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
      c. Include costs of labor and supervision directly attributable to the change.

d. Include 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.

1.5 PROPOSED CHANGE ORDER

A. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to 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 "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

1.6 PROPOSED CHANGE ORDER FORMAT

A. As specified in General Conditions.

1.7 CHANGE ORDER PROCEDURES

A. On District's approval of a Proposal Request, Architect may issue a Change Order for signatures of Owner and Contractor.

1.8 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive. Construction Change Directive instructs 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

SECTION 01 29 00
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:
   1. Division 1 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
   2. Division 1 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals 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 Construction 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. Submittals Schedule.
      c. Contractor's Construction Schedule.
   2. Submit the Schedule of Values to Architect at earliest possible date but no later than 7 days before the date scheduled for submittal of initial Applications for Payment.
   3. No payment applications will be signed by the Architect prior to the Contractor submitting, and the Architect reviewing, a schedule of values.

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. Architect's project number.
   d. Contractor's name and address.
   e. Date of submittal.
2. Submit draft of AIA Document G703 Continuation Sheets.
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.
      1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
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 several line items for principal subcontract amounts, where appropriate.
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 specified, include evidence of insurance or bonded warehousing.
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. 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.
9. 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. As specified in General Conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. Project meetings.
   2. Requests for Information (RFIs).

B. Related Sections include the following:
   1. Division 1 Section "Construction Progress Documentation" 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.

1.3 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 with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.
   4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

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 Owner 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 and activities of other contractors 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. Preinstallation 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.
   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 Owner's property.

1.4 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 Owner and Architect of scheduled meeting dates and times.
   2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
   3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
   4. Frequency of Attendance by Architect: Limited by Architect/District Contract.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
   1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
   2. Agenda: Discuss items of significance that could affect progress, including the following:
      a. Tentative construction schedule.
      b. Phasing, if any.
      c. Critical work sequencing and long-lead items.
      d. Designation of key personnel and their duties.
      e. Procedures for processing field decisions and Change Orders.
      f. Procedures for RFIs.
      g. Procedures for testing and inspecting.

h. Procedures for processing Applications for Payment.
i. Distribution of the Contract Documents.
j. Submittal procedures.
k. Preparation of Record Documents.
l. Use of the premises.
m. Work restrictions.
n. Owner's occupancy requirements.
o. Responsibility for temporary facilities and controls.
p. Construction waste management and recycling.
q. Parking availability.
r. Office, work, and storage areas.
s. Equipment deliveries and priorities.
t. First aid.
u. Security.
v. Progress cleaning.
w. Working hours.

3. Minutes: Record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
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. The 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. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. 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. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. 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) Work hours.
        10) Hazards and risks.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Status of correction of deficient items.
        14) Field observations.
        15) RFIs.
        16) Status of proposal requests.
        17) Pending changes.
        18) Status of Change Orders.
        19) Pending claims and disputes.
        20) Documentation of information for payment requests.
3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

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.

1.5 RFIs:

A. General:
1. Contractor may submit a RFI to the Architect seeking clarification or interpretation of the contract documents. If in the Contractor's opinion the nature of the RFI requires a discussion, rather than simply an answer, the Contractor shall call the Architect to have such a discussion. The results of that discussion as well as all other RFI's must be presented in writing on a form approved in advanced by the Architect along with any supporting information or data, as well as the Contractor's recommended resolution. An oral RFI or a RFI presented on an unapproved form, or without adequate supporting information and Contractor's recommended solution, will be attributed solely to the contractor. Architect's review of or responses to RFI's shall not constitute an approval, direction, or procedure related to the construction means, methods, techniques, sequences, or procedures of the Contractor.
2. Architect's review of or responses to RFI's shall not constitute an approval, direction, or procedure related to the construction site safety precautions, procedures, or methodology of the Contractor.
3. The use of a RFI is limited to clarification of the contract documents. Contractor will limit each RFI to a single issue. Information which is discernable from the contract documents; construction means and methods; product substitution submittals; product submittals; and construction site safety will not be addressed by the Architect in responding to a RFI.
4. Architect's response to a RFI is not a change order or directive authorizing an increase in construction cost or time.

B. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

C. Frivolous or Unnecessary RFIs: Cost of design professional’s time will be billed or deducted from progress payment.

D. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
2. Date.
3. Name of Contractor.
4. Name of Architect.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.

8. Field dimensions and conditions, as appropriate.
9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
10. Contractor's signature.
11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

E. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.

1. Attachments shall be electronic files in Adobe Acrobat PDF format.

F. Hard-Copy RFIs: Form at end of this Section.
1. Identify each page of attachments with the RFI number and sequential page number.

G. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow 15 calendar days for Architect's response for each RFI. RFIs received 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 RFIs with numerous errors.
2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal 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.

H. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. RFI Form.
   2. RFI Log.

END OF SECTION

SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Contractor's Construction Schedule.
   2. Submittals Schedule.
   3. Daily construction reports.

B. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
   2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
   3. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
   4. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 SUBMITTALS

A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Submittal category (action or informational).
   4. Name of subcontractor.
   5. Description of the Work covered.
   6. Scheduled date for Architect's final release or review.

B. Contractor's Construction Schedule: Submit three opaque copies of schedule, large enough (minimum 11 x 17) to show entire schedule for entire construction period.

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

1.4 COORDINATION

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

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
   1. Secure time commitments for performing critical elements of the Work from parties involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Concurrent with the development of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the submittal schedule with the Contractor's construction schedule described above.
   1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
   2. The Architect will review the schedule and indicate which submittals may be deleted from the submission requirement. The deletion of the submittal requirement for an item does not release the Contractor from any requirements of the Construction Contract, General Conditions or Plans and Specifications.

B. Prepare the schedule in chronological order; include submittals required prior to products and materials arriving on site or during the first 90 days of construction. Provide the following information:
   1. Scheduled date for the first submittal.
   2. Related Section number.
   3. Submittal category.
   4. Name of subcontractor.
   5. Description of the part of the Work covered.
   6. Scheduled date for resubmittal.
   7. Scheduled date the Architect's final release or review.

C. Distribution: Following response to initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.
   1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

D. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 15 days of the date established for "Commencement of the Work". The Construction Schedule must be submitted and accepted prior to approval of first pay application.
   1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as identified in the "Schedule of Values".
   2. Within each time bar indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate Actual Completion.
   3. Prepare the schedule on a sheet, or series of sheets, of stable reproducible media, of sufficient width to show data for the entire construction period.
   4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
   5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
   6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

B. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.

C. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.

D. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.

E. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "pre-calculated" and "actual" costs. On the line show dollar-volume of work performed as of the dates used for preparation of payment requests.
   1. Refer to Section "Applications for Payment" for cost reporting and payment procedures.

2.3 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
   1. List of subcontractors at Project site.
   2. List of separate contractors at Project site.
   3. Approximate count of personnel at Project site.

4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (refer to special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial Completions and occupancies.
19. Substantial Completions authorized.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At two-week intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
   1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
   2. Include a report with updated schedule that indicates changes, including, but not limited to, changes in durations, actual starts and finishes, and activity durations.
   3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of reviewed schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

3.2 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. Submittals Schedule Form.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Consult individual sections of specifications for specific submittals required under those sections and for further details and descriptions of requirements.

C. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
   2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
   3. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
   4. Division 1 Section "Quality Requirements" for submitting test and inspection reports.
   5. Division 1 Section "Closeout Procedures" for submitting warranties.
   6. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   7. Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
   8. Divisions 2 through 33 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

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

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

1.4 SUBMITTAL PROCEDURES

A. Processing: All costs for printing, preparing, packaging, submitting, mailing, or delivering submittals for initial submittals and all costs for re-printing, re-drawing, re-drafting, re-packaging, re-submitting, and re-mailing or re-delivering as required for all re-submittals shall be included in Contract Sum.

B. Sequence: Transmit each submittal in sequence which will not result in Architect's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.

C. 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. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

D. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

E. Multiple Reviews: The Contractor shall also be responsible for all costs to Architect or Architect consultants for reviews requiring more than 2 reviews for same specification section.

F. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
   1. Review: Allow 21 days for review of each submittal. Architect will request for more time if needed.

G. Identification: Place a permanent label or title block on each submittal for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
   3. Include the following information on label for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name and address of Architect.
      d. Name and address of Contractor.
      e. Name and address of subcontractor.
      f. Name and address of supplier.
      g. Name of manufacturer.
      h. Each submittal number shall be unique as follows:
         1) Format shall be as follows:

a) Sequential Number - Revision Number - Project Specification Section Number (e.g., 1-1-09910). Do not use letters.

2) Submittal number shall be sequential starting with 1 (e.g., 1-#-#####).

3) First submittal for each section shall have number 1 as the "revision" number. (e.g., #-1-#####)

4) Resubmittal for same specification section shall have same first digit as the original submittal and sequential second digit revision number (e.g., #-2-##### as in second submittal).

5) Sample submittal log would look like the following in the submittal number column: Note that 1-2-09910 is second submittal.

Submittal Number
1-1-09910
1-2-09910 (revised submittal: shown for clarity)
2-1-05500
3-1-04200

i. Number and title of appropriate Specification Section.

j. Drawing number and detail references, as appropriate.

k. Location(s) where product is to be installed, as appropriate.

l. Other necessary identification.

H. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

I. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

J. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Use AIA Document G810.
2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

K. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "No Exceptions Taken" or "Furnish as Noted".

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

M. Use for Construction: Use only final submittals with mark indicating no exceptions taken by Architect.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
      a. Circle items applicable.
      b. Cross-out items not applicable.
      c. Select item number if required.
   3. Submittal data must include complete documentation relating to all the specified features
   4. Include the following information, as applicable:
      a. Manufacturer’s Submittal Form with all the options selected when available.
      b. Manufacturer's written recommendations.
      c. Manufacturer's product specifications.
      d. Manufacturer's installation instructions.
      e. Standard color charts.
      f. Manufacturer's catalog cuts.
      g. Wiring diagrams showing factory-installed wiring.
      h. Printed performance curves.
      i. Operational range diagrams.
      j. Mill reports.
      k. Standard product operation and maintenance manuals.
      l. Compliance with specified referenced standards.
      m. Testing by recognized testing agency.
      n. Application of testing agency labels and seals.
      o. Notation of coordination requirements.
   5. Submit Product Data before or concurrent with Samples.
   6. Number of Copies: Submit 6 copies of Product Data, unless otherwise indicated. Architect will return 2 copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Dimensions.
      b. Do not use words "by others." Use words which depict exactly who is responsible for the work.
      c. Identification of products.

d. Fabrication and installation drawings.
e. Roughing-in and setting diagrams.
f. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
g. Shopwork manufacturing instructions.
h. Templates and patterns.
i. Schedules.
j. Design calculations.
k. Compliance with specified standards.
l. Notation of coordination requirements.
m. Notation of dimensions established by field measurement.
n. Relationship to adjoining construction clearly indicated.
o. Seal and signature of professional engineer if specified.
p. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 inches by 42 inches.
3. Number of Copies: Submit 4 sets of prints.

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 includes the following:
a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.
3. 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 the 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 Owner's property, are the property of Contractor.
4. 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.
a. Number of Samples: Submit 1 full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. 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.

a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
   1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
   2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule or 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.
   4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
      a. Mark up and retain one returned copy as a Project Record Document.

F. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified the “Construction Services Agreement – CSA”

H. Schedule of Values: Comply with requirements specified in the “Construction Services Agreement – CSA”

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
   1. Number of Copies: Submit 2 copies of each submittal, unless otherwise indicated. Architect will not return copies.
   2. Certificates and Certifications: 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.
   3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the 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.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed

before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

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

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

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with 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 a 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.

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

2.3 DEFERRED APPROVALS AND DELEGATED DESIGN

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 Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit 3 copies of a statement, 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. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
   1. Coordinate the work; do not delegate responsibility for coordination to any subcontractor.
   2. Anticipate the interrelationship of all subcontractors and their relationship with the total work.
   3. Resolve differences or disputes between subcontractors and materials suppliers concerning coordination, interference, or extent of work between sections.
   4. Trade submittals with “By Others”, “By General Contractor”, or similar coordination and work scope are not allowed. Identify, acknowledge, and resolve scope of work prior to submittal by Contractor. No extras will be allowed. Provide complete and coordinated submittals.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

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

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

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

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

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

F. Architect's and Consultant's review shall neither be construed as complete check nor relieve the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract unless the Contractor has, in writing, called the Architect's attention to the deviations at the time of submission as specified.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. For Testing and Inspection Requirements for School Projects, comply with requirements of Division 1 Section “Testing and Inspection Requirements for School Projects”.

C. 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, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

D. Related Sections include the following:
   1. Division 1 Section “Testing and Inspection Requirements for School Projects” as would be required for DSA certified project inspections.
   2. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
   3. Division 1 Section “Cutting and Patching” for demo and patching of areas affected.
   4. Divisions 2 through 33 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

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

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

C. Mockups:
   1. Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
   2. Comprehensive, completely integrated mockups of separate trades showing interface conditions, transitions, and relationships between materials and finishes.
   3. Areas: As indicated on Drawings.

D. 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 industry standards.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of 5 previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to 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 Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. 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.

D. 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.

E. Professional Engineer Qualifications: A licensed professional engineer who is legally qualified to practice in California and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

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

G. Testing Agency Qualifications: A DSA approved NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; 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. 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.

I. 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 7 days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL

A. 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."

B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

C. 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.

D. 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.

E. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work.
   1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

F. All work shall be in compliance with 2019 Title 24, Parts 1-6 and 9.

G. 2019 Title 24, Parts 1-5 shall be kept on site during construction.

1.8 SPECIAL TESTS AND INSPECTIONS

A. DSA Required Tests and Inspections: Comply with requirements of Section “Testing and Inspection Requirements for School Construction”.

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 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. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

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

SECTION 01 41 00
TESTING AND INSPECTION REQUIREMENTS FOR SCHOOL CONSTRUCTION

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. This Section includes administrative and procedural requirements for testing and inspection requirements for school construction.

1.3 SUBMITTALS

A. Reports: Prepare and submit certified written reports that include the following:
   1. Reports from testing laboratories.
   2. Verified reports by testing laboratories.

1.4 TESTS

A. General: Tests of materials are required as set forth in these regulations. Whenever there is insufficient evidence of compliance with any of the provisions of this code or evidence that any material or construction does not conform to the requirements of this code, DSA may require tests as proof of compliance to be made at no expense to DSA. Test method shall be as specified by this code or by other recognized and accepted test standards. If there are no recognized and accepted test methods for the proposed alternate, the architect or engineer shall submit written test procedure for review and acceptance by DSA.

B. Tests and Inspections - Chapter 17A:
   1. All tests shall be performed by a testing facility acceptable to the architect and DSA. The testing facility shall be directly employed by the school district and no other entity or individual. Section Title 24, Part 1, Section 4-335(a).
   2. Test reports shall be addressed to, and sent to, the school district by the testing facility. Copies of all test reports shall be sent to DSA, the architect, the structural engineer, and the project inspector by the testing facility. All reports shall be sent within 7 calendar days of the date of the test. See Title 24, Part 1, Section 4-335(d).

   3. A Verified Report, sighed by the California licensed civil engineer in charge of the testing facility which conducted the tests, shall be submitted to DSA upon completion

of the project. The verified report shall state that all tests and inspections were made as required by the DSA approved documents. If the tests or inspections indicate that materials or workmanship did not meet the requirements of the DSA approved documents, the Verified Report shall list all noncompliant work. A copy of all test reports involving unresolved noncompliant work shall be attached to the Verified Report. In the event that not all required tests or inspections were made by the testing facility making this verified report, those tests and inspections not made shall be listed on the Verified Report. See Title 24, Part 1, Section 4-335(e).

C. All tests shall be made by an approved agency. Where job conditions warrant, the architect or registered engineer may waive certain tests with the approval of DSA. A copy of the list of structural tests and inspections prepared by the responsible architect or structural engineer and acceptable to DSA shall be provided to the designated testing agency and the project inspector prior to the start of construction.

D. The Owner will select an independent testing laboratory approved by DSA to conduct the tests. Selection of the material required to be tested shall be by the laboratory or the Owner's representative and not by the Contractor.

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

F. Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.

G. The Owner will select and pay testing laboratory costs for all tests and inspections, but may be reimbursed by the Contractor for such cost under the Contract documents.

1.5 TEST REPORTS

A. One copy of all test reports shall be forwarded to the Division of the State Architect, the Architect, the Structural Engineer, and the Project Inspector by the testing agency. Such reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall be also reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of Title 24 and with the approved specifications. Test reports shall show the specified design strength. They shall also state definitely whether or not the material or materials tested comply with requirements.

1.6 VERIFICATION OF TEST REPORTS

A. Each testing agency shall submit to the Division of the State Architect a verified report in duplicate covering all the tests which are required to be made by that agency during the

progress of the project. Such report shall be furnished each time that work on the project is suspended, covering the tests up to that time, and at the completion of the project, coring all tests.

B. Any person who continues working on the cited work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

1.7 INSPECTION BY THE OWNER

A. The Owner and his representatives shall at all times have access for the purpose of inspection to all parts of the work and to the shops wherein the work is in preparation, and the Contractor shall at all times maintain proper facilities and provide safe access for such inspection.

B. The Owner shall have the right to reject materials and workmanship, which are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the Owner. If the Contractor does not correct such rejected work within a reasonable time, fixed by written notice, the Owner may correct same and charge the expense to the Contractor.

Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of the work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any respect due to the fault of the Contractor or his subcontractor, he shall defray all expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the additional cost of labor and material necessarily involved in the examination and replacement shall be allowed the Contractor.

1.8 INSPECTOR - OWNER'S

A. A DSA certified Project Inspector and Special Inspector, when needed, shall be employed by the Owner in accordance with the requirements of the California Code of Regulations, Title 24, Part 1, will be assigned to the work. His or her duties are specifically defined in Section 4-342, 4-335, 4-336, and 4-337 of Title 24, Part 1.

B. Selection of Project Inspector will be approved by Architect of Record, Structural Engineer, and DSA.

C. The work of construction in all stages of progress shall be subjected to personal continuous observation of the Inspector. He shall have free access to any or all parts of the work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of work and character of the materials. Inspection of the work shall not relieve the Contractor from any obligation to fulfill his Contract.

1.9 INSPECTOR - OWNER - FIELD OFFICE

A. The Contractor shall provide for the use of the Owner's Inspector a temporary office to be located as directed by the Inspector and to be maintained until removal is authorized by the Owner. This office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. The door shall have a lock. A table satisfactory for the study of plans and two chairs shall be provided by the Contractor. The Contractor shall provide and pay for adequate electric lights, private local telephone service with a loud exterior bell, and adequate heat for this field office until the completion of the Contract.

1.10 CERTIFICATION OF CONSTRUCTION

A. Observation by Architect or Registered Engineer, inspection by project inspector, and special inspection: Per Title 24, Part 1 Section 4-333.

B. Verified Reports: Per Title 24, Part 1 Section 4-336 and 4-341 (f).

1.11 STRUCTURAL TESTS & SPECIAL INSPECTIONS

A. Provide periodic special inspection to verify weld filler material identification markings are per AWS designation listed on the DSA approved documents and the WPS.

B. Provide periodic special inspection to verify weld filler material manufacturer's certificate of compliance.

C. Provide periodic special inspection to verify WPS, welder qualifications and equipment. Reference DSA IR 17-3.

D. Provide continuous special inspection for groove, multi-pass, and fillet welds >5/16" per AISC 360 (and AISC 341 as applicable). Reference DSA IR 17-3.

E. Provide periodic special inspection for single-pass fillet welds >5/16" per AISC 360 (and AISC 341 as applicable). Reference DSA IR 17-3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

A. Statement of Structural Tests & Special Inspections as indicated in DSA-103:
   1. Welding: DSA IR 17-3 AWS D1.1 (AWS D1.3 for cold formed steel) Verification of Materials, equipment, welders, etc.
      a. Verify weld filler material identification markings per AWS designation listed on the DSA approved documents and the WPS. TYPE: Periodic PERFORMED BY: SI
      b. Verify weld filler material identification markings per AWS designation listed on the DSA approved documents and the WPS. TYPE: Periodic PERFORMED BY: SI
      c. Verify WPS, welder qualifications and equipment. TYPE: Periodic PERFORMED BY: SI
   2. Shop Welding
      a. Inspect groove, multi-pass, and fillet welds > 5/16". TYPE: Continuous; PERFORMED BY: SI
      b. Inspect single-pass fillet welds $\leq$ 5/16". TYPE: Continuous; PERFORMED BY: SI

END OF SECTION

SECTION 01 42 00
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. “AHJ”: Agency having jurisdiction.

C. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

D. “Compatible”: When used for products, it shall comply with requirements including products recommended/ required by the manufacturer for warrantee acceptance.

E. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."

F. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

G. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

H. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

I. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

J. “Owner”: As defined in Division 1 section “Summary”.

K. "Provide": Furnish and install, complete and ready for the intended use.

L. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
2. Copies of standards and applicable building codes (Title 24 Parts 1-5) shall be kept on-site during construction.

D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations.

E. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized names.

F. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized names.

G. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized names.

1.4 QUALITY ASSURANCE

A. Reference Standards:
1. Part 1 2019 California Building Standards Administrative Code, Title 24 C.C.R.
2. Part 2 2019 California Building Code, Title 24 C.C.R.
3. Part 3 2019 California Electrical Code, Title 24 C.C.R.
4. Part 4 2019 California Mechanical Code, Title 24 C.C.R.
5. Part 5 2019 California Plumbing Code, Title 24 C.C.R.
6. Part 6 2019 California Energy Code, Title 24 C.C.R.
7. Part 7 currently vacant
8. Part 8 2019 California Historical Building Code, Title 24 C.C.R.
9. Part 9 2019 California Fire Code, Title 24 C.C.R.
10. Part 10 2019 California Existing Building Code, Title 24 C.C.R.

11. Part 11 2019 California Green Building Standards Code (CALGreen Code), Title 24 C.C.R.
12. Part 12 2019 California Referenced Standards Code, Title 24 C.C.R.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections include the following:
   1. Division 1 Section "Summary" for limitations on utility interruptions and other work restrictions.
   2. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
   3. Division 1 Section "Execution Requirements" for progress cleaning requirements.
   4. Divisions 2 through 33 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Sewer Service:
   1. Pay sewer service use charges for sewer usage by all entities for construction operations.

C. Water Service:
   1. Pay water service use charges for water used by all entities for construction operations.

D. Electric Power Service:
   1. Pay electric power service use charges for electricity used by all entities for construction operations.

E. Sanitary Facilities: Pay sanitary service use charge for temporary toilets, wash facilities, and drinking water for use of construction personnel.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with 2019 CEC.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide galvanized steel bases for supporting posts.

B. Wind Screen Fabric: Green.

2.2 TEMPORARY FIELD OFFICES

A. Contractor will be allowed to use existing on-site facilities, under conditions provided and acceptable to Owner.

B. Keep office clean and orderly.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, electric, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
   3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. 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.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
   1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
   1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Sanitary Facilities: Install temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Heating and Cooling: Install temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

F. Ventilation and Humidity Control: Install temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate

ventilation requirements to produce ambient condition required and minimize energy consumption.

G. Electric Power Service: Install electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

H. Lighting: Install temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Install lighting for Project identification sign.

3.3 SUPPORT FACILITIES INSTALLATION

A. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

B. Parking: Provide temporary or use designated areas of Owner's existing parking areas if approved for construction personnel.

C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

D. Project Identification and Temporary Signs: Provide Project identification. Install signs where directed to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with work restrictions specified in Division 1 Section "Summary."

B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

1. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: 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.

E. Site Enclosure Fence (if required): Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations or as indicated on Drawings.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.

F. Install full coverage with green wind screen fabric to block viewing through construction fencing.

G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

I. Covered Walkway: Erect structurally adequate, protective, covered walkway for passage of individuals along adjacent public street(s). Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.
1. Construct covered walkways using scaffold or shoring framing.
2. Provide wood-plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
3. Extend back wall beyond the structure to complete enclosure fence.
4. Paint and maintain in a manner approved by Owner and Architect.

J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

K. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.
1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.

2. Construct dustproof partitions with 2 layers of 3-mil polyethylene sheet on each side. Cover floor with 2 layers of 3-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.
    a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
3. Insulate partitions to provide noise protection to occupied areas.
4. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
5. Protect air-handling equipment.
6. Weather strip openings.
7. Provide walk-off mats at each entrance through temporary partition.

L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with 2013 CFC Article 87.
1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. 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.
4. 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.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and product substitutions.

B. Related Sections include the following:
   1. Division 1 Section "References" for applicable industry standards for products specified.
   2. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
   3. Divisions 2 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Proposed products by manufacturers not listed in Manufacturers list.

C. Basis-of-Design: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating “or equal” products of other named manufacturers.

D. District Standard: Where a specific manufacturer's product is named and accompanied by the words "District Standard," including make or model number or other designation, to

establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics pre-selected by the District.

1. District seeks to match products currently in use on other campuses; No substitution allowed.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Form: Tabulate information for each product under the following column headings:
      a. Specification Section number and title.
      b. Generic name used in the Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer's name and address.
      e. Supplier's name and address.
      f. Installer's name and address.
      g. Projected delivery date or time span of delivery period.
      h. Identification of items that require early submittal approval for scheduled delivery date.
   3. Completed List: Submit 3 copies of completed product list within days specified in General Conditions. Include a written explanation for omissions of data and for variations from Contract requirements.
   4. Architect's Action: Architect will respond in writing to Contractor within 21 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit 4 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Substitution Request Form: Use form provided at end of Section.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified material or product cannot be provided.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner 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. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, environmental, and specific features and requirements indicated.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.

f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
i. 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 lack of availability or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: Architect will notify Contractor of acceptance or rejection of proposed substitution within 21 days of receipt of request.
   a. Form of Acceptance: Change Order.
   b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Named Product and Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

D. District Standard Products Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Reference Standards:
1. Part 1 2019 California Building Standards Administrative Code, Title 24 C.C.R.
2. Part 2 2019 California Building Code, Title 24 C.C.R.
3. Part 3 2019 California Electrical Code, Title 24 C.C.R.
4. Part 4 2019 California Mechanical Code, Title 24 C.C.R.
5. Part 5 2019 California Plumbing Code, Title 24 C.C.R.
6. Part 6 2019 California Energy Code, Title 24 C.C.R.
7. Part 7 currently vacant
8. Part 8 2019 California Historical Building Code, Title 24 C.C.R.
9. Part 9 2019 California Fire Code, Title 24 C.C.R.
10. Part 10 2019 California Existing Building Code, Title 24 C.C.R.
11. Part 11 2019 California Green Building Standards Code (CALGreen Code), Title 24 C.C.R.
12. Part 12 2019 California Referenced Standards Code, Title 24 C.C.R

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

C. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Warranty Period: Warranty period specified in each sections are minimum requirements. Do not modify manufacturer’s standard warranty period if the manufacturer’s warranty has longer warranty period.

D. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.

3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or an equal product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with “or equal”.
6. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Product Substitutions" Article to obtain approval by Architect for use of an unnamed product.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include custom or premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes standard, custom, and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 35 days after the Notice to Proceed**.** Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution 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:
    1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    2. Requested substitution does not require extensive revisions to the Contract Documents.
    3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    4. Substitution request is fully documented and properly submitted.

5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction and has paid any fees.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution 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.
11. Furnish samples upon requested by Architect.
12. Attached Request for Substitution Form shall used for substitution requests.

PART 3 - EXECUTION

3.1 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. Product List Form.
   2. Substitution Request Form.
   3. Similar Installation List Form.

END OF SECTION

SECTION 01 70 00
EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. General installation of products.
   2. Progress cleaning.
   3. Starting and adjusting.
   4. Protection of installed construction.
   5. Correction of the Work.

B. Related Sections include the following:
   1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
   2. Division 1 Section "Submittal Procedures" for submitting surveys.
   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 1 Section “Cutting and Patching” for procedures for demolition and final Work requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
   1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. 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 Owner 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, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 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 8 feet in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. 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.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   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.

H. 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.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. 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 materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

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: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. 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.

3.5 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.6 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. Provide protection against weather, rain, wind, storms, frost and heat so as to maintain all work and materials free from injury or damage.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace 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.

END OF SECTION 01 70 00

SECTION 01 73 20
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Demolition and removal of selected portions of building or structure.
   2. Salvage of existing items to be reused or recycled.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.

B. Remove all sheet metal, metal piping, and other materials deemed salvageable by owner and separate from other demolition waste. Neatly place on owner’s property as directed by owner.

1.5 SUBMITTALS

A. Qualification Data: For demolition firm.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure other on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Locations of proposed dust- and noise-control temporary partitions and means of egress.
6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
7. Means of protection for items to remain and items in path of waste removal from building.

C. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
1. Comply with submittal requirements in Division 1 Section "Construction Waste Management."

1.6 QUALITY ASSURANCE

A. Reference Standards:
1. Part 1 2019 California Building Standards Administrative Code, Title 24 C.C.R.
2. Part 2 2019 California Building Code, Title 24 C.C.R.
3. Part 3 2019 California Electrical Code, Title 24 C.C.R.
4. Part 4 2019 California Mechanical Code, Title 24 C.C.R.
5. Part 5 2019 California Plumbing Code, Title 24 C.C.R.
6. Part 6 2019 California Energy Code, Title 24 C.C.R.
7. Part 7 currently vacant
8. Part 8 2019 California Historical Building Code, Title 24 C.C.R.
9. Part 9 2019 California Fire Code, Title 24 C.C.R.
10. Part 10 2019 California Existing Building Code, Title 24 C.C.R.
11. Part 11 2019 California Green Building Standards Code (CALGreen Code), Title 24 C.C.R.
12. Part 12 2019 California Referenced Standards Code, Title 24 C.C.R.

B. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

C. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

D. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

E. Standards: Comply with ANSI A10.6 and NFPA 241.

F. Predemolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.7 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

1. Comply with requirements specified in Division 1 Section "Summary."

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. Before selective demolition, Owner will remove the following items:

a. Books, furniture, equipment.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.

2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
   1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
   2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
   3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
   4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
   5. Maintain adequate ventilation when using cutting torches.
   6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
   7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
   8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   9. Dispose of demolished items and materials promptly. Comply with requirements in Division 1 Section "Construction Waste Management."

B. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until pick up by Owner.
   4. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

D. Roofing: remove portions of roofing components as necessary to accommodate new work and in a manner that can be reinstalled and/or replaced to shed water and maintain the intent of protection on roof as required by the specific interrupted roofing system.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Remove shelving and flooring in library.

END OF SECTION

SECTION 01 73 29
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
   1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building.
   2. Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

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 surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
   1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
   2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
   3. Products: List products to be used and firms or entities that will perform the Work.
   4. Dates: Indicate when cutting and patching will be performed.
   5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
   6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.

7. Architect's or Construction Manager's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

A. Reference Standards:
1. Part 1 2019 California Building Standards Administrative Code, Title 24 C.C.R.
2. Part 2 2019 California Building Code, Title 24 C.C.R.
3. Part 3 2016 California Electrical Code, Title 24 C.C.R.
4. Part 4 2019 California Mechanical Code, Title 24 C.C.R.
5. Part 5 2019 California Plumbing Code, Title 24 C.C.R.
6. Part 6 2019 California Energy Code, Title 24 C.C.R.
7. Part 7 currently vacant
8. Part 8 2019 California Historical Building Code, Title 24 C.C.R.
9. Part 9 2019 California Fire Code, Title 24 C.C.R.
10. Part 10 2019 California Existing Building Code, Title 24 C.C.R.
11. Part 11 2019 California Green Building Standards Code (CALGreen Code), Title 24 C.C.R.
12. Part 12 2019 California Referenced Standards Code, Title 24 C.C.R.

B. Cutting, boring, sawcutting or drilling through the new or existing structural elements to be done only when so detailed in the drawings or accepted by the Architect and Structural Engineer with the approval of DSA Representative.

C. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

D. 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.

E. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

F. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials 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 match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. 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.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. 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.

3.3 PERFORMANCE

A. 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. 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 as small as possible, neatly to 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.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate 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 eliminate 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, apply primer and intermediate paint coats 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 weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:
   1. Disposing of nonhazardous construction waste.

B. Related Sections include the following:
   1. Division 1 Section "Temporary Facilities and Controls" for environmental-protection measures during construction.
   2. Division 1 Section “Selective Demolition”

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. Note: owner reserves the right to salvage and recycle and/or reuse construction waste at their discretion.
   1. Salvaged items for owner’s use include, but is not limited to all kitchen hood metals and piping.

B. 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.

1.4 PERFORMANCE GOALS

A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75 percent by weight of total waste generated by the Work.
   1. Not a requirement, but a goal for sustainable design. No extra cost should incur to Owner.

1.5 SUBMITTALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:
   1. Material category.
   2. Generation point of waste.

3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

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.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 RECYCLING CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper/cardboard products, polystyrene products, pallets, crates, 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 Owner's property and transport to recycling receiver or processor.

3.2 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 Owner's property and legally dispose of them.

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Warranties.
   3. Extra Materials.
   4. Final cleaning.
   5. Closeout and Final Certification of Construction.
   6. Title 24 Certificate of Acceptance requirements.

B. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
   2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
   3. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   4. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
   5. Divisions 2 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.
   6. Division 23 sections for mechanical Title 24 Certificate of Acceptance requirements.
   7. Division 26 sections for electrical Title 24 Certificate of Acceptance requirements.

1.3 DEFINITIONS

A. IOR: Inspector of Record.

B. Inspection: IOR will inspect, not the Architect.

1.4 SUBMITTALS

A. Submit a copy of Title 24 Certificate of Acceptance forms submitted to enforcement agency.

1.5 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting IOR's inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
   6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems.
   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 Owner of changeover in heat and other utilities.
   12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   13. Complete final cleaning requirements, including touchup painting.
   14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. IOR's Inspection: Submit a written request for IOR's inspection for Substantial Completion. On receipt of request, Architect will either proceed with IOR's inspection process or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after IOR's inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
   1. 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.

1.6 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final IOR's inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
   2. Submit certified copy of 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 Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. IOR's Inspection: Submit a written request for final IOR's inspection process for acceptance. On receipt of request, Architect will either proceed with IOR's inspection process or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after IOR's 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.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies 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 form attached.

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 Architect.
    d. Name of Contractor.
    e. Page number.

1.8 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date specified in General Conditions.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Include Table of Contents.
3. Identify content with specification section number and title.
4. 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.

5. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

1.9 EXTRA MATERIALS

A. Deliver to Owner's facility manager extra materials specified in each section.

B. Organize submitted materials in orderly sequence based on the table of contents of the Project Manual.
   1. Itemize each material and quantity in 8-1/2 by 11-inch paper.

C. Label each item for easy identification.

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.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide 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 IOR's 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 similar labels, including mechanical and electrical nameplates.
m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
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.
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.

3.2 TITLE 24 CERTIFICATE OF ACCEPTANCE REQUIREMENTS

A. Comply with requirements of Divisions 23 and 25.

3.3 FORMS

A. Electronic versions of attached forms will be provided upon request.
    1. Punch-List Form.

END OF SECTION

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
   1. Record Drawings.
   2. Record Specifications.
   3. Record Product Data.

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 33 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit 1 set of marked-up Record Prints.

B. Record Specifications: Submit 1 copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit 1 copy 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.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
   1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record

data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
   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.
   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 erasable, red-colored pencil. 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. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. 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 Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 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.
   4. Assembly in single binder with table of contents.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

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 Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

3.2 FORMS

A. Electronic versions of attached forms will be provided upon request.

1. Record Product Data Form.

END OF SECTION

SECTION 02 41 00
DEMOLITION

PART 1 - GENERAL

1.1.1 SECTION INCLUDES

A. Building demolition excluding removal of hazardous materials and toxic substances.

B. Abandonment and removal of existing utilities and utility structures.

1.2 RELATED DOCUMENTS

A. Section 01 52 40 – Construction Waste Management: Limitations on disposal of removed materials; requirements for recycling.

B. Section 31 23 23 – Backfilling: Fill material for filling holes, pits, and excavations generated as result of removal operations.

1.3 REFERENCE STANDARDS

A. 29 CFR 1926 – U.S. Occupational Safety and Health Standards.

B. NFPA 241 – Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.4 SUBMITTALS

A. Site Plan: Showing:
   1. Vegetation to be protected in areas for temporary construction and field offices.
   2. Areas for temporary and permanent placement of removed materials.
   3. Areas for temporary and permanent placement of removed materials.

B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.5 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of 5 years of documented experience.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 SCOPE

A. Remove the entire building designated on drawings.

B. Remove paving and cubs as required to accomplish new work.

C. Within area of new construction, remove foundation walls and footings to a minimum of 3 feet below finished grade.

D. Outside area of new construction, remove foundation walls and footings to a minimum of 3 feet below finished grade.

E. Remove concrete slabs on grade within construction limits indicated on drawings.

F. Remove manholes and manhole covers curb inlets and catch basins.

G. Remove fences and gates.

H. Remove other items indicated, for salvage, relocation, and recycling.

I. Fill Excavations, open pits, and holes in ground areas generated as a result of removals, using specified fill; compact fill as specified in Division 31.

J. Fill Excavations, open pits, and holes in ground areas generated as a result of removals, using specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with other requirements specified in Division 1.

B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.
   3. Use of explosives is not permitted.
   4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   5. Provide, erect, and maintain temporary barriers and security devices.

6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
8. Do not close or obstruct roadways or sidewalks without permit.
9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

C. Do not begin removal until receipt of notification to proceed from District.

D. Do not begin removal until built elements to be salvaged or relocated have been removed.

E. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.

F. Protect existing structures and other elements that are not to be removed.

G. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

H. If hazardous materials are discovered during removal operations, stop work and notify Architect and College District; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

I. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

J. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Comply with requirements of Section 01 52 40 - Construction Waste Management.
2. Dismantle existing construction and separate materials.

3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

K. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.3 EXISTING UTILITES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permit.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to District.

E. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

F. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

G. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.4 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.
B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 52 40 - Construction Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 05 52 13
PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Steel pipe.

1.2 RELATED SECTIONS

A. Section 05 50 00, Metal Fabrications

1.3 PERFORMANCE REQUIREMENTS

A. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

A. Product Data: For the following:

1. Manufacturer's product lines of mechanically connected railings.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of railing through one source from a single manufacturer.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel."
2. AWS D1.2, "Structural Welding Code--Aluminum."
3. AWS D1.6, "Structural Welding Code--Stainless Steel."

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of pipe and tube railings that fails in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:

a. Structural failures.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: 2 years.

B. Installer's Warranty: 1 year.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. -Steel Pipe and Tube Railings:

a. Blum, Julius & Co., Inc.
b. CR Laurence.
c. Livers Bronze.
d. Wagner, R & B, Inc.; a division of the Wagner Companies.
e. Or equal

B. Nonshrink, Nonmetallic Grout:
1. 1107 Advantage Grout by Dayton Superior Chemical & Cement Products.
2. Conset Grout by ChemMasters Specialty Construction Products.
3. General-Purpose Grout by Symons.
4. Or equal.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.3 STEEL AND IRON

A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than 25 percent.

B. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.

1. Provide galvanized finish for all exterior installations and where indicated.

C. Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.4 FASTENERS

A. General: Provide the following:

1. Steel Railings: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.

B. Fasteners for Interconnecting Railing Components:

1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.

2.5 MISCELLANEOUS MATERIALS

A. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated, and complying with SSPC-Paint 5.

B. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20.

2.6 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Connections: Fabricate railings with either welded or nonwelded connections, unless otherwise indicated.

H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove flux immediately.
4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

I. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

J. Form changes in direction as follows:

1. By bending or by inserting prefabricated elbow fittings.

K. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

L. Close exposed ends of railing members with prefabricated end fittings.

M. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

2.7 STEEL AND IRON FINISHES

A. Galvanized Railings:

1. Hot-dip galvanize steel railings, including hardware, after fabrication.
2. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
3. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.

B. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

D. Preparation for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate process.

2.8 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

3.2 RAILING CONNECTIONS

A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.

B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.

3.3 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

C. Use of "Bondo" for finishes where applicable and for continuity of finishes is allowed.

3.4 PROTECTION

A. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

A. Provide all labor, material, equipment and installation to complete framing and sheathing of interior walls and partitions as shown and specified.

1.03 RELATED SECTIONS:

06 16 00 – Sheathing

1.04 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations apply to the Work of this Section only to the extent specified by the reference.
   1. APA American Plywood Association- Visual Inspection
   2. ASTM American Society for Testing and Materials.
   3. AWPA American Wood Preserves Association
   4. DFPA Douglas Fir Plywood Association
   5. ICC International Code Council
   6. PS Public Standards of the U.S. Department of Commerce, Bureau of Standards
   7. CBC STDS 2019 California Building Code Standards
   8. WCLIB West Coast Lumber Inspection Bureau
   9. WWPA Western Wood Products Association

1.05 SUBMITTALS

B. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.
   1. Product data and current ICC Evaluation Service Reports for attachment accessories.
      a. Framing Devices and framing connectors.
      b. Gun nails.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.
   1. Chapter 23A of the 2019 California Building Code (CBC).

2. ANSI/AF&PA NDS-2018 National Design Specification for Wood Construction.
3. Standard Grading Rules No. 17 of the WCLIB or the Standard Grading Rules of the WWPA. Lumber to have visible grade stamp of an agency certified by the WCLIB.

1.07 COORDINATION

A. Coordinate Work of this Section with Work of other Sections to be attached to, or built into, wood framing.

PART 2 – PRODUCTS

2.01 LUMBER

A. Moisture content: The maximum moisture content of framing lumber shall not exceed 19% just prior to enclosing or covering framing with plywood, gypsum wallboard and/or plaster. To ensure compliance, lumber up to 2-inch-thick should be seasoned to a moisture content of 19% or less and be stamped “S-Dry”. Lumber over 2-inch-thick may be shipped unseasoned and stamped “S-Green”.

B. Structural lumber shall be S4S stress-marked Douglas Fir-Larch, manufactured and graded in accordance with WCLIB or WWPA, with minimum grades as follows unless noted otherwise.
   1. Joists & Rafters — No. 1
   2. 4x & 6x Beams/Headers — No. 1 or better
   3. Wall Studs — No. 1
   4. Blocking, stripping, & misc. — No. 2

C. Grade stamp: Provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade species, moisture content at time of surfacing, and mill.

2.02 ACCESSORY MATERIALS

A. All Nails shall be common wire nails with dimensions complying with CBC Table 2304.9.1, manufacture shall conform to Fed. Spec, FF-N-1-1 and shall be hot-dipped galvanized for exterior locations, high humidity locations and for treated wood; plain finish for other interior locations; size and type to suit application.
   1. Box nails and/or “Sinker” nails are not acceptable for Work shown and/or detailed on the Structural Drawings.

B. Bolts, Nuts and Washers conforming to ASTM A-307 shall be hot-dipped galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations.

C. Anchor Bolts: ASTM A 307, non-headed type.

D. Lag Screws, Lag Bolts, Pins and Wood Screws: Sized to suit application: hot-dipped galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations. Comply with NDS Section 11.1.3.

E. Framing connectors: current ICC Evaluation Services Report, sized and profiled to suit application; hot-dipped galvanized finish, manufactured by Simpson Strong-Tie Company, KC Metals, or approved equal.

F. Gun Nails: Use Common Nails or current ICC Evaluation Services Report special gun nails of the same wire diameter and length as common nails specified on the Drawings. Box nails and/or "Sinker" nails are not acceptable for Work shown on the Structural Drawings.

G. Drypack: Cement/sand drypack composed of one-part cement to 3 parts sand. Dry mix first then add with only enough water to hold the mix together. Drypack required under sills as noted on the Drawings.

2.03 WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): Chromated zinc chloride or Wolman salts for pressure treated members.

B. Pressure treatment of Douglas Fir-Larch plates, nailers, ledgers and other exposed wood structures, shall be in accordance with the AWPA's standards for the purchase and preservation of treated timber, with a retention of a least 0.35 lb. Wolman salts, 0.75 lb chromated zinc chloride per cubic feet of lumber, or 0.30 lb. per cubic foot of Pentachlorophenol type "C" light solvent. In exposed conditions, the incising of the lumber shall be waived.
   1. See Architectural Drawings for treatment of trellis members.

C. Wood Preservative (Surface Application): Clear, manufactured by Woodlife, "Res" or equal.

PART 3 – EXECUTION

3.01 WOOD TREATMENT

A. Shop pressure treat and deliver to the site ready for installation all wood materials requiring pressure impregnated preservatives.

B. Treat site-sawn ends and holes in pressure treated lumber.
   1. Apply preservative treatment in accordance with manufacturer's instruction.
   2. Allow site applied preservative to cure prior to erecting members.

3.02 FRAMING

A. Layout, cutting and installation of framing shall be under the continuous supervision of a full-time carpenter foreman experienced in all phases of framing construction and exposed architectural framing required for the Work of this Section and on the Contract Drawings.

B. Structural members shall not be cut for pipes, conduits, ducts, etc., unless specifically noted or detailed on the Structural Drawings.

C. Erect wood framing members true to lines and levels. Do not deviate from true alignment more than 1/4 inch. Install simple span members with crown up.

D. Space framing members at 16 inches on center unless otherwise noted on the Drawings.

E. Construct members of continuous pieces of longest possible lengths except as noted on the Drawings.

F. Holes in wood for bolts shall be drilled 1/32" to 1/16" larger than the diameter of the bolt.

G. Number of fasteners shall be as indicated on the Drawings or as noted in the ICC Evaluation Report where number of fasteners are not shown on the Drawings.

H. Sheet metal framing connectors shown on the Drawings shall be Simpson connectors as manufactured by the Simpson Strong-Tie Company, Inc., Superspeed Connectors as manufactured by the KC Metals company or equal.

I. Bolts shall have standard cut washers under heads and/or nuts where in contact with wood. Bolt threads shall not bear on wood.

J. Lag bolts, lag screws and wood screws shall be screwed (not driven) into wood members. In placing lag screws or wood screws in wood, a hole of the same diameter and depth of “the solid shank” shall be bored after which the hole with a diameter equal to the diameter of the screw at the root of the thread shall be continued to a depth equal to the threaded screw length portion. Provide cut washers under the heads of lag bolts/lag screws where in contact with wood.

K. Bolts, lag screws and wood screws shall be re-tightened prior to the application of drywall, plywood, plaster, etc.

L. Drive nails perpendicular to grain of wood in lieu of toenailing, where feasible.

M. For conditions not covered on the Drawings, provide penetration into the piece receiving the point of not less than 1/2 the length of the common nail or spike, provided, however, that 16d nails may be used to connect two pieces of two-inch (nominal) thickness.

N. Provide fire blocking in furred spaces, stud spaces and other concealed cavities as indicated and as follows:

1. Fire block furred spaces of walls at each floor level, at ceiling, and at not more than 96 inches o.c. with 2-inch nominal thickness solid wood blocking or noncombustible materials accurately fitted to close furred spaces.

3.03 CLEAN-UP

A. Clean up leftover materials of this Section and legally dispose off site. Dispose of pressure- treated wood in an authorized disposal area. Burning of materials on the Site is prohibited. Do not bury material and/or wood of any type on the job site.

END OF SECTION

SECTION 06 16 00
SHEATHING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

A. Provide all labor, material, equipment and installation to complete framing and sheathing of roof overlay, top of interior lids, mezzanine flooring, stairs and wall paneling in electrical and communications rooms as shown and specified.

1.03 RELATED SECTIONS

A. Section 06 10 00 – Rough Carpentry

1.04 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations apply to the Work of this Section only to the extent specified by the reference.
   1. APA American Plywood Association - Visual Inspection
   2. ASTM American Society for Testing and Materials.
   3. AWPA American Wood Preservers Association
   4. DFPA Douglas Fir Plywood Association
   5. ICC International Code Council
   6. PS Public Standards of the U.S. Department of Commerce, Bureau of Standards
   7. CBC STDS 2019 California Building Code Standards
   8. WCLIB West Coast Lumber Inspection Bureau
   9. WWPA Western Wood Products Association

1.05 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.

B. Product data and current ICC Evaluation Service Reports for attachment accessories.
   1. Framing Devices and framing connect.
   2. Gun nails.

C. Environmental Submittal:
   1. Reference Standard: U.S. Green Building Council (USGBC) LEED Reference Guide for Green Building Design and Construction (NC), 2009 Edition.

2. LEED Credit MR 4: Product Data for products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
3. LEED Credit IEQ 4.4: Provide documentation that all composite wood and agrifiber products including core materials and all laminating adhesives, on site or shop applied, contain no added urea-formaldehyde resins.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.
   1. Chapter 23A of the 2019 California Building Code (CBC).
   2. ANSI/AF&PA NDS-2018 National Design Specification for Wood Construction.
   3. Standard Grading Rules No. 17 of the WCLIB or the Standard Grading Rules of the WWPA. Lumber to have visible grade stamp of an agency certified by the WCLIB.
   4. Structural plywood: DOC Product Standard PS 1. Plywood shall be grade marked by DFPA, TECO, APA or PTL.

B. Plywood Machine Nailing: The use of machine nailing is subject to a satisfactory jobsite demonstration of each Project and the approval by the Architect and the Project Inspector. Approval is subject to continued satisfactory performance. If nail heads penetrate the outer ply more than would be normal for a hand hammer or if minimum allowable edge distances are not maintained, the performance of this application method will be deemed unsatisfactory.

1.07 COORDINATION

A. Coordinate Work of this Section with Work of other Sections to be attached to, or built into, wood framing.

PART 2 – PRODUCTS

2.01 SHEET MATERIALS

A. Plywood shall conform to:
   1. All roof, floor and wall sheathing shall be APA rated Structural I plywood of the thickness shown on the Structural Drawings.

B. Grade stamp: Provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade species, moisture content at time of surfacing, and mill.

C. Environmental Requirement: All composite wood and agrifiber products including core materials and all laminating adhesives, on site or shop applied, must contain no added urea- formaldehyde resins.

2.02 ACCESSORY MATERIALS

A. All nails shall be common wire nails per ASTM F1667 with dimensions complying with CBC Table 2304.9.1, manufacture shall conform to Fed. Spec, FF-N-1-1 and shall be hot-dipped galvanized for exterior locations, high humidity locations and for treated wood; plain finish for other interior locations; size and type to suit application.
   1. Box nails and/or “Sinker” nails are not acceptable for Work shown and/or detailed on the Structural Drawings.

B. Framing connectors: current ICC Evaluation Services Report, sized and profiled to suit application; hot-dipped galvanized finish, manufactured by Simpson Strong-Tie Company, KC Metals, or approved equal.

C. Gun Nails: Use Common Nails or current ICC Evaluation Services Report special gun nails of the same wire diameter and length as common nails specified on the Drawings. Box nails and/or “Sinker” nails are not acceptable for Work shown on the Structural Drawings.

2.03 WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): Chromated zinc chloride or Wolman salts for pressure treated members.

B. Wood Preservative (Surface Application): Clear, manufactured by Woodlife, “Res” or equal.

PART 3 – EXECUTION

3.01 FRAMING

A. Layout, cutting and installation of framing shall be under the continuous supervision of a full- time carpenter foreman experienced in all phases of framing construction and

exposed architectural framing required for the Work of this Section and on the Contract Drawings.

B. Structural members shall not be cut for pipes, conduits, ducts, etc., unless specifically noted or detailed on the Structural Drawings.

C. Erect wood framing members true to lines and levels. Do not deviate from true alignment more than 1/4 inch. Install simple span members with crown up.

D. Construct members of continuous pieces of longest possible lengths except as noted on the Drawings.

E. Number of fasteners shall be as indicated on the Drawings or as noted in the ICC Evaluation Report where number of fasteners are not shown on the Drawings.

F. Sheet metal framing connectors shown on the Drawings shall be Simpson connectors as manufactured by the Simpson Strong-Tie Company, Inc., Superspeed Connectors as manufactured by the KC Metals company or equal.

G. Drive nails perpendicular to grain of wood in lieu of toenailing, where feasible.

H. For conditions not covered on the Drawings, provide penetration into the piece receiving the point of not less than 1/2 the length of the common nail or spike, provided, however, that 16^{d} nails may be used to connect two pieces of two inch (nominal) thickness.

3.02 PLYWOOD SHEATHING

A. Plywood sheathing shall be laid/placed with face grain perpendicular to supports. Secure plywood sheets over firm bearing with end joints staggered.
   1. Provide a 1/8 inch gap between plywood edges for wall sheathing for expansion and contraction. Do not force panels into place.
   2. Sheathing: Provide 3x flat edge blocking for unsupported edges.

B. Plywood sheathing shall be nailed with common wire nails spaced at 3/8" from all edges. Refer to the Drawings for nail size and spacing requirements for all plywood sheathing.

C. Use plywood panels larger than eight square feet and greater than 24" in the least dimension.

3.03 CLEAN-UP

A. Clean up leftover materials of this Section and legally dispose off site. Dispose of pressure- treated wood in an authorized disposal area. Burning of materials on the Site is prohibited. Do not bury material and/or wood of any type on the job site.

END OF SECTION

SECTION 06 40 20
INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Plastic-laminate cabinets.
   2. Plastic-laminate countertops.
   3. Solid-surfacing-material countertops.

1.03 DEFINITIONS

A. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.04 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Cabinet and Drawer Hardware:
      a. Provide touch latches and/or U-shaped wire pulls at all accessible casework or equally accessible pull hardware per CBC 1125B.4.

1.05 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

   1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
   2. Show locations and sizes of cutouts and holes for plumbing fixtures and other items installed in architectural woodwork.
   3. Apply WI-certified compliance label to first page of Shop Drawings and follow Section 1, “Guidelines for Architectural Millwork Shop Drawing”.

C. Samples for Initial Selection: For each type of product indicated requiring product selection.
   1. Shop-applied transparent finishes
   2. Plastic laminates
   3. Solid-surfacing materials

D. Samples for Verification:
   1. Plastic laminates, 8 by 10 inches, for each type, color, pattern, and surface finish, with 1 sample applied to core material and specified edge material applied to 1 edge.
   2. Solid-surfacing materials, 6 inches square.
   3. Lumber with or for transparent finish, not less than 5 inches wide by 5 inches for each species and cut, finished on 1 side and 1 edge.
   4. Veneer leaves representative of and selected from flitches to be used for transparent-finished woodwork.
   5. Corner pieces as follows:
      a. Cabinet-front frame joints between stiles and rails, as well as exposed end pieces, 18 inches high by 18 inches wide by 6 inches deep.
      b. Miter joints for standing trim.
   6. Exposed cabinet hardware and accessories, one unit for each type and finish. Hardware samples will be returned up on approval.

E. Product Certificates: For each type of product, signed by product manufacturer.

F. Woodwork Quality Standard Compliance Certificates for Product and Installation: WI-certified compliance certificates confirming conformance with Certified Compliance Program (CCP).

G. Qualification Data: For Installer and fabricator.

1.04 QUALITY ASSURANCE

A. Reference Standards:
   1. 2019 Building Standards Administrative Code, Part 1, CBSC.
   2. 2019 California Building Code (CBC), Part 2, CBSc
   3. 2019 California Electrical Code (CEC), Part 3, CBSC
   4. 2019 California Mechanical Code (CMC), Part 4, CBSC
   5. 2019 California Plumbing Code (CPC), Part 5, CBSC
   6. 2019 California Energy Code, Part 6, CBSC.
   7. 2019 California Historical Building Code, Part 8, CBSC.
   8. 2019 California Fire Code, Part 9, CBSC
   9. 2019 California referenced Standards, Part 12 CBSC.
   10. Title 8 C.C.R. Chapter 4, Sub-Ch. 6 – Elevator Safety Orders.
   11. Title 19 C.C.R., Public Safety, SFM Regulations.
   12. Americans with Disabilities Act (ADA), Title II or Title III.

B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in- service performance. Shop is a licensee of WI's Certified Compliance Program.

C. Installer Qualifications: Licensee of WI's Certified Compliance Program.

D. Quality Standard: Unless otherwise indicated, comply with WI's "Manual of Millwork" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

1. Before delivery to job-site, Millwork supplier:
   a. Licensees of WI shall issue a certified compliance certificate indicating millwork products being furnished for this project, and certifying that these products and their installation, will fully meet requirements of grade or grades specified.

   b. Non-Licensees of WI shall provide evidence that they have arranged for inspection by WI inspector after completion of fabrication and installation.
      1) If conditions are found to be compliant, inspector will issue Compliance Certificate indicating millwork products being furnished for this project, and certifying that these products and their installation, will fully meet requirements of grade or grades specified.

      2) Each elevation of casework and each countertop shall bear certified compliance label.
      3) Cabinet Design Series (CDS): CDS numbers on Drawings indicate typical designs.

E. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.05 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.06 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
B. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.

C. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.
   2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.07 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

1.08 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of interior architectural woodwork that fails in materials or workmanship within specified warranty period.
   1. Warranty Period: 2 years.

B. Installer’s Warranty: 1 year.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. High-Pressure Decorative Laminate: Subject to compliance with requirements, provide high- pressure decorative laminates by one of the following:
   1. Formica Corporation.
   2. Nevamar Company, LLC; Decorative Products Div.
   3. Wilsonart International; Div. of Premark International, Inc.
   4. Or equal.

B. Solid Surfacing Materials: Subject to compliance with requirements, provide products by one of the following:
   1. E. I. du Pont de Nemours and Company.
   2. Formica Corporation.

3. Nevamar Company, LLC; Decorative Products Div.
4. Wilsonart International; Div. of Premark International, Inc.
5. Or equal

C. Particleboard: ANSI A208.1, Grade made with binder containing no urea formaldehyde.
1. Rodman Industries, Inc.
2. Acadia Board Company.
3. PrimeBoard, Inc.
4. Or equal.

D. Cabinet hardware: Subject to compliance with requirements, provide products by one of the following manufacturers.
1. Accuride.
2. Hafele
3. Or equal.

2.02 MATERIALS

A. General: Provide materials that comply with requirements of WI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

B. Wood Species and Cut for Transparent Finish: Maple, plain sawn or sliced.

C. Core and Substrates: Comply with the following:
1. Hardboard: AHA A135.4.
2. Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde.
3. Particleboard: ANSI A208.1, Grade M-2.
4. Veneer-Faced Panel Products (Hardwood Plywood): HPV A HP-1 made with adhesive containing no urea formaldehyde.

D. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1
1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semi exposed edges.

E. High-Pressure Decorative Laminate (HPDL): NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.

F. Solid-Surfacing Material: Quartz Countertop surfaces from Dupont Zodiaq
1. Homogenous quartz surfaces material
2. Colors and Patterns: As selected by Architect from manufacturer's full range.

2.03 CABINET HARDWARE AND ACCESSORIES

A. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self-rests, polished chrome finish, for nominal 1-inch spacing adjustments.
1. Product: KV #255 by Knape & Vogt or equal.

B. Grommets for Cable Passage through Countertops: 3 inch diameter, locations as indicated. If locations are not indicated, as selected by Architect during shop drawing review. Doug Mockett, Sugatsune, Wood Technology, or equal.

C. Drawer and Door Pulls: For all, including accessible casework.
1. "U" shaped wire pull, aluminum with satin finish, 4-inch centers.

D. Sliding Door Pulls: Circular shape for recessed installation, aluminum with satin finish.

E. Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with chrome finish to key with door hardware. All doors and drawers to be lockable.

F. Hinges: Concealed (fully mortised) self-closing type, BHMA No. 652, steel with polished finish.
1. Products: Blum or equal.

G. Drawer Slides: BHMA A156.9, B05091.
1. Heavy Duty (Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides. Model 3640 by Accuride or equal.

2.04 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

C. Adhesives, General: Do not use adhesives that contain urea formaldehyde.

D. VOC Limits for Installation Adhesives and Glues: Use installation adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Wood Glues: 30 g/L.
2. Contact Adhesive: 250 g/L.

E. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.05 FABRICATION, GENERAL

A. Interior Woodwork Grade: Unless otherwise indicated, provide Premium-grade interior woodwork complying with referenced quality standard.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.

C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
   1. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4-Inch-Thick or Less: 1/16 inch.
   2. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members and Rails:1/16 inch.

D. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

   1. Notify Architect 7 days in advance of the dates and times woodwork fabrication will be complete.
   2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.

E. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

   1. Seal edges of openings in countertops with a coat of varnish.

2.06 PLASTIC-LAMINATE CABINETS

A. WI Construction Style: Style A, Frameless.

B. WI Construction Type: Type I, multiple self-supporting units rigidly joined together.

C. WI Door and Drawer Front Style: Flush Reveal overlay.

D. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
   1. Both sides of all shelves shall be 0.028 high pressure decorative laminate, regardless of location or exposure, and shall not span more than 34 inches.
   2. Shelves shall be retained with seismic clips.
   3. Cabinets shall be designed for full use of corners.
   4. Upper cabinets shall be at 4’-6” AFF max.

E. Semi-Exposed Surfaces: Any of one of following.
   1. Low pressure decorative polyester overlay.
   2. Low pressure decorative melamine overlay.
   3. HPL cabinet liner.
   4. Solid Phenolic core (SPC).
   5. Vinyl at cabinet backs and drawer bottoms only.

F. Concealed Surfaces: Any of one of following.
   1. Solid Wood or Plywood: Any hardwood or softwood species, with no defects affecting strength or utility. Hardwood and softwood lumber kiln dried to 7 and 10 percent moisture content, respectively.
   2. Particleboard: ANSI A208.1, Grade M-2.
   3. Medium-Density Fiberboard: ANSI A208.2.
   4. Solid Phenolic core (SPC).

G. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
   1. As selected by Architect from laminate manufacturer's full range.

2.07 PLASTIC-LAMINATE COUNTERTOPS

A. High-Pressure Decorative Laminate Grade: HGS, 0.048 inches (1.2 mm) thick.

B. Provide Exterior grade plywood at wet locations and comply with following:
   1. No seams shall occur within 18 inches of sink cut-outs.
   2. Sink cut-outs shall be coated with opaque sealer.
   3. Back splash shall coordinate with size of soap and paper tower dispensers for solid attachment.
   4. Corners of tops shall be cut at 45 degrees if projecting or in pathway.

C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
   1. As selected by Architect from manufacturer's full range.

D. Edge Treatment: See drawings

E. Laminate Substrates: Medium-density fiber board (MDF). Do not use plywood.

F. Backer Sheet: Provide plastic-laminate backer sheet, Grade BKL, on underside of countertop substrate.

2.08 SOLID-SURFACING-MATERIAL COUNTERTOPS

A. Solid-Surfacing-Material Thickness: 1-1/8 inch for horizontal applications and 3/4” for backsplash.

B. Colors, Patterns, and Finishes: Provide materials and products that result in colors of solid- surfacing material complying with the following requirements:
   1. As selected by Architect from manufacturer's full range.

C. Fabricate tops in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.

D. Drill holes in countertops for plumbing fittings and soap dispensers in shop.

PART 3 - EXECUTION

3.01 PREPARATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and back priming.

3.02 INSTALLATION

A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.

B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.

C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

F. Cabinets: Install without distortion so doors and drawers' fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
   1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
   2. Maintain veneer sequence matching of cabinets with transparent finish.
   3. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips.

G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
   1. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

2. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.
4. Calk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

H. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

I. Refer to Division 9 Sections for final finishing of installed architectural woodwork not indicated to be shop finished.

3.03 ADJUSTING AND CLEANING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean woodwork on exposed and semi exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION

SECTION 07 21 00
BUILDING INSULATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Concealed sound insulation.

B. Related Sections include the following:
   Division 7 Section "Fire-Resistive Joint Systems" for insulation installed as part of perimeter fire-resistive joint system.

1.03 DEFINITIONS

A. Mineral-Fiber Insulation: Insulation composed of rock-wool fibers, slag-wool fibers, or glass fibers; produced in boards and blanket with latter formed into batts (flat-cut lengths) or rolls.

1.04 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for insulation products.

1.05 QUALITY ASSURANCE

A. Reference Standards:
   1. 2019 Building Standards Administrative Code, Part 1, CBSC.
   2. 2019 California Building Code (CBC), Part 2
   3. 2019 California Electrical Code (CEC), Part 3, CBSC
   4. 2019 California Mechanical Code (CMC), Part 4, CBSC
   5. 2019 California Plumbing Code (CPC), Part 5, CBSC
   6. 2019 California Energy Code, Part 6, CBSC.
   7. 2019 California Historical Building Code, Part 8, CBSC.
   8. 2019 California referenced Standards, Part 12 CBSC.
   9. Title 8 C.C.R. Chapter 4, Sub-Ch. 6 – Elevator Safety Orders.
   10. Title 19 C.C.R., Public Safety, SFM Regulations.
   11. Americans with Disabilities Act (ADA), Title II or Title III.

B. Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.

C. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test- response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Surface-Burning Characteristics: ASTM E 84.
2. Fire-Resistance Ratings: ASTM E 119.
3. Combustion Characteristics: ASTM E 136.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

1.07 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of building insulation that fails in materials or workmanship within specified warranty period.

1. Warranty Period: 2 years.

B. Installer’s Warranty: 1 year.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Glass-Fiber Batt/Blanket Thermal and Sound Insulation: Subject to compliance with requirements, provide either the named product or an equal product by one of the other manufacturers specified.
1. Johns Manville (JM). (Basis of Design)
2. CertainTeed Corporation.
3. Guardian Fiberglass, Inc.
4. Knauf Fiber Glass.
5. Owens Corning
6. Or equal

2.02 GLASS-FIBER BATT/BLANKET INSULATION

A. Unfaced, Glass-Fiber Batt/Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics. Glass- fiber bonded with acrylic thermosetting binder.

1. For walls and partitions: Unfaced Batts
2. Formaldehyde-free, Unfaced Batts by JM or equal.

3. For roof cavities: R-30 Formaldehyde-free, poly-encapsulated, non-vapor-retarder facing fiberglass batts, ComfortTherm by JM.

B. Thermal Rating: R values as indicated on Drawings.

C. Sound Attenuation Ratings: Minimum R-11 on interior walls and partitions, unless otherwise indicated on Drawings.

2.03 ACCESSORIES

A. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inches wide.

B. Nails or Staples: Steel wire; electroplated, or galvanized; type and size to suit application.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and for other conditions affecting performance.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of substances harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.03 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.04 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Install insulation in cavities formed by framing members according to the following requirements:
   1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
   2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
   3. Maintain 3-inch clearance of insulation around recessed lighting fixtures.
   4. For wood-framed construction, install mineral-fiber blankets according to ASTM C 1320 and as follows:

3.05 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

1.02 RELATED SECTIONS

1.03 DEFINITIONS

A. Based on ASTM C 920 Substrates:
   1. M type substrates: Concrete, concrete masonry units, brick, mortar, natural stone. The term "masonry" means brick, stone, and concrete masonry work.
   2. G type substrates: Glass and transparent plastic glazing sheets.
   3. A type substrates: Metals, porcelain, glazed tile, and smooth plastics.
   4. 0 type substrates: Wood, unglazed tile; substrates not included under other categories

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittal Procedures.

B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples, 6-inch-long illustrating sealant colors for selection.

D. Color selection: Color selection shall be made from manufacturers standard color selection. Selection shall be made by Architect.

E. Manufacturer's Installation Instructions: Indicate special procedures.

F. Sustainable Design Submittals: Provide the following information
   1. Low Emitting Materials

1.05 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years of experience.

1.06 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.07 WARRANTY

A. See Section 01 77 00 - Closeout Procedures, for additional warranty requirements.

B. Correct defective work within a five-year period after Date of Substantial Completion.

C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 - PRODUCTS

2.01 SEALANTS

A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No. 1168.

B. Type SJ-1 - General Purpose Exterior Sealant: Silicone, non-staining, S, NS, 50, NT.
1. Applications: Use for:
   a. Control, expansion, and soft joints in masonry.
   b. Joints between concrete and other materials.
   c. Joints between metal frames and other materials.
   d. Other exterior joints for which no other sealant is indicated.

C. Type SJ-2 - Exterior Expansion Joint Sealer: Multi-component self-leveling polyurethane sealant, ASTM C 920, Type M, Grade P, Class 25, Use T.

1. Size as indicated on drawings, if not detailed, then per manufacturer's recommendation to provide weathertight seal when installed.

2. Provide product recommended by manufacturer for traffic-bearing use.

3. Applications: Use for:
   a. Exterior horizontal joints in concrete flatwork and extruded curbs.

D. Type SJ-3 - Silicone Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, Uses NT, A, G; single component, solvent curing, non-sagging, non-staining, non-bleeding.
1. Color: Match adjacent finished surfaces.
2. Movement Capability: Plus 100 percent, minus 50 percent.

3. Service Temperature Range: -65 to 180 degrees F.
4. Shore A Hardness Range: 15 to 35
5. Applications: Use for:
   a. Glazing at aluminum frames.

E. Type SJ-4 - Exterior Metal Lap Joint Sealant: One-part non-sag silyl terminated polyether sealant: ASTM C-920, Type S. Grade NS, Class 25, Use NT, T, M, G, A, O.
   1. Applications: Use for:
      a. Concealed sealant bead in sheet metal work.

F. Type SJ-5 - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
   1. Color: To be selected by Architect from manufacturer's standard range.
   2. Applications: Use for:
      a. Interior wall and ceiling control joints.
      b. Joints between door and window frames and wall surfaces.
      c. Interior joint sealant between window frames and wall or curb below
      d. Other interior joints for which no other type of sealant is indicated.

G. Type SJ-6 - Bathtub Tile Sealant: White silicone; ASTM C920, Uses I, M and A; single component, mildew resistant.
   1. Applications: Use for:
      a. Joints between plumbing fixtures and floor and wall surfaces.
      b. Joints between countertops with faucets and wall surfaces and backsplash.

H. Type SJ-7 - Acoustical Sealant: Non-skinning, sound dampering; single component, solvent release curing, non-skinning.
   1. Applications: Use for concealed locations only:
      a. Sealant bead between top stud runner and structure and between bottom stud track and floor.

2.02 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM 0 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width; Backer Rod manufactured by Backer Rod Manufacturing, Inc., Denver, CO.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. .Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Perform acoustical sealant application work in accordance with ASTM C919.

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave.

H. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

I. Compression Gaskets: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect sealants until cured.

3.06 SCHEDULE

A. Control and Expansion Joints in Paving: Type SJ-2.

B. Joints Between Concrete Panels and Between Panels and Adjacent Work: Type SJ-1.

C. Control Expansion, and Soft Joints in Masonry, and Between Masonry and Adjacent Work: Type SJ-1.

D. Lap Joints in Exterior Sheet Metal Work: Type SJ-4.

E. Joints Between Exterior Metal Frames and Adjacent Work (except masonry): Type SJ-1.

F. Joints Between Interior Metal Frames and Adjacent Work (except masonry): Type SJ-5.

G. Under Exterior Door Thresholds: Type SJ-4.

H. Interior Joints for Which No Other Sealant is Indicated: Type SJ-5; None; N/A.

I. Control and Expansion Joints in Interior Concrete Slabs and Floors: Type SJ-2.

J. Joints Between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls: Type SJ-6.

K. In Sound Rated Walls, Between Metal Stud Track/Runner and Adjacent Construction: Type SJ- 7.

END OF SECTION

SECTION 087100
DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Mechanical door hardware for the following:

a. Swinging doors.

B. Related Requirements:
1. Section 081113 "Hollow Metal Doors and Frames.
2. Section 081216 "Aluminum Frames" for door silencers provided as part of aluminum frames.
3. Section 284621.11 "Addressable Fire-Alarm Systems" for connections to building fire-alarm system.

1.3 COORDINATION

A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

B. Security: Coordinate installation of door hardware, keying, and access control with Owner's maintenance staff.

c. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Conference participants shall include Installer's Architectural Hardware Consultant and Owner's maintenance team representative.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For electrified door hardware.

1. Include diagrams for power, signal, and control wiring.
2. Include details of interface of electrified door hardware and building safety and security systems.

C. Samples: For each exposed product in each finish specified, in manufacturer's standard size.

1. Tag Samples with full product description to coordinate Samples with door hardware schedule.

D. Samples for Initial Selection: For each type of exposed finish.

E. Samples for Verification: For each type of exposed product, in each finish specified.

1. Sample Size: Full-size units or minimum 2-by-4-inch (51-by-102-mm) Samples for sheet and 4-inch (102-mm) long Samples for other products.

a. Full-size Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

2. Tag Samples with full product description to coordinate Samples with door hardware schedule.

F. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

a. Identification number, location, hand, fire rating, size, and material of each door and frame.
b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.

c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
d. Description of electrified door hardware sequences ofoperation and interfaces with other building control systems.
e. Fastenings and other installation information.
f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
g. Mounting locations for door hardware.
h. List of related door devices specified in other Sections for each door and frame.

G. Keying Schedule: Prepared by the Owner's maintenance team representative under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1. Complies with listed fire-rated door assemblies.

B. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

C. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware and keying schedule.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1. Warehousing Facilities: In Project's vicinity.

2. Scheduling Responsibility: Preparation of door hardware and keying schedule.

1 10 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including excessive deflection, cracking, or breakage.
b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering anduse.

2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
a. Exit Devices: Two years from date of Substantial Completion.
b. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of door hardware from single manufacturer.
1. Provide the Owner's standard mechanical hardware and accessories or mechanical hardware and accessories compatible with the Owner's standard.

2.2 PERFORMANCE REQUIREMENTS

A. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

B. Accessibility Requirements: For door hardware on doors in an accessible route, comply with California Building Code Chapter llB.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf(22.2 N).
2. Comply with the following maximum opening-force requirements:

    a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Operable hardware mounted between 38” and 44” from finished floor.

2.3 SCHEDULED DOOR HARDWARE

A. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.

1. Door hardware is scheduled in Part 3.

2.4 HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
    a. Two Hinges: For doors with heights up to 60 inches.
    b. Three Hinges: For doors with heights 61 to 90inches.
    c. Four Hinges: For doors with heights 91 to 120inches.
    d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
    a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
    b. Sizes from 3 1” to 4’0”: 5” standard or heavy weight asspecified.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
    a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oilimpregnated bearing hinges unless Hardware Sets indicate standard weight.
    b. Interior Standard Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:
    a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.
5. Acceptable Manufacturers:
    a. Hager Companies (HA).
    b. Ives (IV).
    c. McKinney Products (MK).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) year experience designing secured master key systems and have on record a published security keying system policy.

1. Facility Standard:
   a. Schlage (SC). EF Keyway

B. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5. Keyway: Match Facility Standard.

C. Keying System: Each type of lock and cylinders to be factory keyed.

1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
2. Nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System:

   a. Master key or grand master key locks to Owner's existing system.

D. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Three (3)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys: Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

G. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.

1. Acceptable Manufacturers:
   a. Lund Equipment (LU).

b. MMF Industries (MM).
c. Telkee (TK).

2.6 MECHANICAL LOCKS AND LATCHES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA Al56.2, Series 4000, Grade 1 certified.

1. Furnish with solid cast levers, standard 2 3/4” backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
2. Locks are to be non-handed and fully field reversible.
3. Locksets are to **include intruder functions.**
4. Facility Standard:

b. USCAN (US) JV Series (Jovan)

B. Cylindrical Locksets, Grade 2 (Standard Duty): ANSI/BHMA A156.2, Series 4000, Grade 2 certified.

1. Locks are to be non-handed and fully field reversible.
2. Facility Standard:

b. USCAN (US) JV Series (Jovan)

2.7 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and asfollows:

1. Flat-Lip 7/8” LTC Strikes: For locks used with door pair equipped with over-lapping astragal.
2. Wood Frames Strikes: Extended lip to clear applied wood trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing, with extended lip for applied trim.
4. Hollow Metal Frames Strikes: Wrought box, 4-7/8” x 1-1/4” lip.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.8 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
   1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
   2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
   3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the push-bar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
   4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
   5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
      a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
      b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
   6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
   7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
   8. Rail Sizing: Provide exit device rails factory sized for proper door width application.
   9. Through Bolt Installation: For exit devices and trim, furnish with SNB's.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets.
   1. Acceptable Manufacturers:
      a. Von Duprin (VD) - 35A/98 Series.

2.9 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized smooth covers (without grooves) and include installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with CBC Chapter HB.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 certified surface mounted, door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable back-check, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Facility Standard:

a. LCN (LCN) - 4010 Series.

2.10 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1” less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

    a. Bronze: 050-inch thick.

4. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes (CSK) and four beveled edges (4BE).

5. Acceptable Manufacturers:

    a. Rockwood Manufacturing (RO).
    b. Trimco (TC).

2.11 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Acceptable Manufacturers:

    a. Rockwood Manufacturing (RO).
    b. Trimco (TC).

2.12 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Acceptable Manufacturers:

1. Pemko Manufacturing (PE).
2. Zero (ZE).

2.13 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:

a. Wood or Machine Screws: For the following:

1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
2) Strike plates to frames.
3) Closers to doors and frames.

b. Steel Through Bolts: For the following unless door blocking is provided:

1) Surface hinges to doors.
2) Closers to doors and frames.
3) Surface-mounted exit devices.

3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.14 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Installation height shall comply with CBC Chapter llB "Accessibility" with operable hardware mounted between 38" and 44" from finished floor.

4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule, but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).

E. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as indicated in keying schedule.
2. Furnish permanent cores to Owner for installation.

F. Key Control System:

1. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
2. Key Lock Boxes: Install where indicated or approved by Architect to provide controlled access for fire and medical emergency personnel.
3. Key Control System Software: Set up multiple-index system based on final keying schedule.

G. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

16 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

3.7 DOOR HARDWARE SCHEDULE

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. RO - Rockwood
3. VD - Von Duprin
4. LCN - LCN
5. TC - Trimco
6. MC - McKinney
7. HA - Hager Companies
8. IV - Ives

9. US - USCAN

Description: Existing Exterior Door (Panic Hardware)

3 Hinge	T4A3386 NRP 5" x 4-1/2"	630	MK
1 Exit	9875L		LCN
1 Lockset	USL173D-626-2-3/4SC4	626	SG US
1 Surface Closer	4010	690	LCN
1 Kick Plate	K1050 10" high 4BE CSK	630	RO
1 Door Stop	1209HAHO	630	TR
1 Threshold	2727	A	PE
1 Gasketing	332DS TKSP8		PE
1 Sweep	29326CNB TKSP8		PE

END OF SECTION

SECTION 09 20 00
GYPSUM BOARD

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Interior gypsum board.

B. Related Sections include the following:
   1. Division 9 Section “Painting” for primers and finishes applied to gypsum board surfaces.

1.03 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For the following products:
   1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.
   2. Finishes: Level 4 and 5 of gypsum board finish indicated for use in exposed locations. 4 by 4-foot sample.
      a. Finishes: For each finish indicated and on same backing indicated for Work.

1.04 QUALITY ASSURANCE

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

C. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

   1. Install mockups for the following:

a. Each level of gypsum board finish indicated for use in exposed locations.
b. Each finish indicated.
c. Each areas such as walls, ceilings, and soffits.

2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
3. Simulate finished lighting conditions for review of mockups.
4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.05 STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.06 PROJECT CONDITIONS

B. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

C. Do not install interior products until installation areas are enclosed and conditioned.

D. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.07 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of gypsum board that fails in materials or workmanship within specified warranty period.
1. Warranty Period: 1 year.

B. Installer’s Warranty: 1 year

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Interior Gypsum Board: Subject to compliance with requirements, provide products by one of the following:
1. USG Corporation.
2. National Gypsum Company.
3. G-P Gypsum.
4. Or equal.

B. Steel Trim Accessories: Subject to compliance with requirements, provide products by one of the following:
   1. USG Corporation.
   2. Amico.
   3. Or equal.

C. Aluminum Trim: Subject to compliance with requirements, provide products by one of the following:
   1. Fry Reglet Corp.
   2. Gordon, Inc.
   3. Pittcon Industries.
   4. Brand X Metals, Inc.
   5. Or equal.

2.02 PANELS, GENERAL

A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.03 INTERIOR GYPSUM BOARD

A. General: Complying with ASTM C 36 or ASTM C 1396, as applicable to type of gypsum board indicated and whichever is more stringent.

B. Type X:
   1. Thickness: 5/8 inch.
   2. Long Edges: Tapered.

2.04 TRIM ACCESSORIES

A. Trim: ASTM C 1047.
   1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
   2. Shapes:
      a. Cornerbead.
      b. Bullnose bead.
      c. LC-Bead: J-shaped; exposed long flange receives joint compound.
      d. L-Bead: L-shaped; exposed long flange receives joint compound.
      e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
      f. Expansion (control) joint.
      g. Curved-Edge Cornerbead: With notched or flexible flanges.

B. Aluminum Trim and Reveal: As specified in Division 9 Section “Portland Cement Plaster”.

2.05 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475.

B. Joint Tape: Paper.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

2.06 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

C. Acoustical Sealant: Sheetrock Acoustical Sealant by USG or equal.

D. Thermal and Acoustical Insulation: As specified in Division 7 Section "Building Insulation."

E. Gypsum Board Adhesives: High performance latex-based construction adhesive designed for gypsum board applications.
   1. Green Series SW-325 Shear & Drywall Adhesive by OSI.
   2. Drywall Adhesive GDWA by Grabberman.
   3. Or equal.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
   1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
   2. Fit gypsum panels around ducts, pipes, and conduits.
   3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

3.03 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:
   1. Cornerbead: Use at outside corners, unless otherwise indicated.
   2. LC-Bead: Use at exposed panel edges.
   3. L-Bead: Use where indicated.
   4. U-Bead: Use at exposed panel edges.
   5. Curved-Edge Cornerbead: Use at curved openings.

D. Aluminum Trim: Install in locations indicated on Drawings Insert requirements.

3.04 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. Gypsum Board Finish Levels: Comply with GA 214 for Level definitions.
1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Panels that are substrate for ceramic tile or acoustical tile.
3. Level 3: Where indicated on Drawings.

4. Level 4: At panel surfaces that will be exposed to view with flat paint finish.
   a. and its application to surfaces are specified in other Division 9 Sections.
5. Level 5: At panel surfaces that will be exposed to view with non-flat paint finish.

   a. Primer and its application to surfaces are specified in other Division 9 Sections.

3.05 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
1. Indications that panels are wet, or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 09 64 00
WOOD FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

1. Solid hardwood flooring.
2. Engineered hardwood flooring.

2.02 RELATED SECTIONS

1. Section 06 10 00 - Rough Carpentry.
2. Section 09 64 80 – Wood Flooring Finishes.

2.03 REFERENCES

1. Forest Stewardship Council (FSC).
2. National Wood Flooring Association (NWFA).

2.04 SUBMITTALS

1. Submit under provisions of Section 01 33 00 – Submittal Procedures.
2. Product Data:
   a. Manufacturer's data sheets on each product to be used.
   b. Preparation instructions and recommendations.
   c. Storage and handling requirements and recommendations.
   d. Typical installation methods.
   e. Conditional lifetime warranty.
3. Verification Samples: Two representative units of each type, size, pattern and color.
4. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

2.05 QUALITY ASSURANCE

1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
   a. Installer to be certified by the National Wood Flooring Association (NWFA).
3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
4. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
   a. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.

b. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
c. Retain mock-up during construction as a standard for comparison with completed work.
d. Do not alter or remove mock-up until work is completed or removal is authorized.

2.06 PRE-INSTALLATION CONFERENCE

1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

2.07 DELIVERY, STORAGE, AND HANDLING

1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.

2. Protect from damage due to weather, excessive temperature, and construction operations.

3. Comply with NWFA guidelines.

2.08 PROJECT CONDITIONS

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer and the NWFA for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

2.09 WARRANTY

1. Manufacturer's conditional lifetime warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Allegheny Mountain Hardwood Flooring, which is located at: 501 Main St.; Emlenton, PA 16373; Toll Free Tel: 800-867-9441; Email:request info (jessica@hickmanwoods.com); Web:https://alleghenymountainhardwoodflooring.com/

B. Or equal.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.02 FLOORING

2. Solid Hardwood:
   a. Standards Compliance: FSC Certified.
   b. Thickness: Match existing.
   c. Strip Width: Match existing.
   d. Lengths of Normal Runs: Random lengths of 12 to 87 inches (203 to 2210 mm) nested bundles. Average Length: 42 inch (1067 mm).
   e. Edges: Match existing.
   f. Species: Hard Maple.
      1) Cut Type: Match existing.
   g. Grade: Clear.
   h. Finish: Unfinished.

i. Surface Texture: Manufacturer's standard.
j. Strip Installation Method: Nail.
k. Strip Installation Method: Staple.
l. Application: Above grade. Raised floor framing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly constructed and prepared.

B. Install after interior temperature and humidity conditions can be maintained to mimic normal temperature and humidity conditions for the permanent system.

C. Verify substrate moisture content meets manufacturer's recommendations.

D. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer and per NWFA guidelines for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Install vapor retarder as recommended by wood flooring manufacturer.

B. Install in accordance with manufacturer's instructions, approved submittals, per NWFA guidelines, and in proper relationship with adjacent construction.

3.04 FIELD QUALITY CONTROL

A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.05 CLEANING AND PROTECTION

A. Limit foot traffic on finished flooring.

B. Protect from damage during construction. Wood flooring covered during construction is to be completely covered to maintain color consistency.

C. Clean products in accordance with the manufacturer's recommendations.

D. Touch-up, repair or replace damaged products before Substantial Completion.

SECTION 09 64 80
WOOD FLOORING FINISHES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Hardwood floor adhesives, finishing and maintenance of the following types:
   1. Oil-modified finishes and sealers.

1.2 RELATED SECTIONS

A. Section 09 64 29 - Wood Strip and Plank Flooring.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
   2. ASTM E492 - Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.
   3. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
   4. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00 – Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Trained in application of the manufacturer's floor products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
1. Basis of Design: Woodline Polyurethane manufactured by Bona US, 24 Inverness Place E. Suite 100; Englewood, CO 80112; ASD Toll Free Tel: 800-872-5515; Tel: 303-371-1411; Fax: 303-307-5029; Email:usadmin@bona.com; Web:https://www.bona.com
2. Lenmar Polyurehtane Wood Finish manufactured by Benjamin Moore & Co. 101 Paragon Drive; Montvale, NJ 07645 Tel: 800-225-5554 www.lenmar-coatings.com
3. Or equal

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 OIL-MODIFIED FINISHES AND SEALERS

A. Wood Floor Finish:
1. Product: Woodline Polyurethane as manufactured by Bona US.
a. Ingredients: Oil-modified polyurethane resin, mineral spirits (solvent), alkyd resin, driers.
b. Gloss Level (60 Degrees):
1) Gloss: Greater than 90 percent.
2) Semi-Gloss: 55 percent.
3) Satin: 25 percent.
c. Color: Amber.
d. Clarity:
1) Gloss: Clear
2) Semi-Gloss: Slightly opaque.
3) Satin: Slightly opaque,
e. Solids: 45 to 48 percent.
f. Density: 7.34 lbs lbs per gal (0.88 s.g.).
g. US Regulatory VOC: 510 g/L.
h. Odor: Mineral spirits.
i. Stability: 2-year shelf life in unopened container.
j. Cure Time: 100 percent cured after 14 days.
k. Flash Point:
1) Gloss: 110 degrees F (43 degree C).
2) Satin and Semi-Gloss: 103 degrees F (39 degrees C).

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Building climate control system shall be functioning with a temperature of 65 to 80 degrees F (18.3 to 26.7 degrees C) and maximum relative humidity of 70 percent for 72 hours before flooring is installed, during installation, and for 72 hours after installation. Acclimate flooring according to manufacturer's instructions.

3.2 PREPARATION

A. Protection: Protect adjacent finish surface to prevent damage during sanding and finish system application.

B. Substrate: Must be clean, smooth, dry, free of loose material and structurally sound, with the surface slightly textured for best adhesion (similar to a light broom finished concrete).
   1. Remove adhesive residue, paint, concrete curing compounds or other contaminants that may affect adhesive bond. Abrasive blasting, shot blasting or scarifying may be necessary to completely remove some of these residues.
   2. Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities must be filled or smoothed with a Portland Cement-based patching and/or leveling compound.
   3. Levelness: To 3/16 inch (5 mm) in a 10 ft (3048 mm) span. If the concrete slab is to be leveled, primer/sealer shall be applied to the slab prior to application of the leveling compound.
   4. Slab Temperature: 55 to 95 degree F (12.8 to 35 degrees C).

C. Other suitable substrates include wood and radiant heat flooring (refer to manufacturer's recommended installation instructions).

3.3 MOISTURE TESTING

A. Concrete Floors:
   1. Concrete Slabs: Conduct moisture testing per ASTM F1869 and/or ASTM F2170.
   2. Primer/Sealer: Two coats prior to installation of hardwood flooring with an adhesive when MVER using ASTM F1869 (Calcium Chloride test) exceeds 12 lbs per 24 hrs per 1000 sq ft (5.86 kg per 24 hrs per 100 sq m) or when using ASTM F2170 (RH probe test) exceeds 85 percent relative humidity.
   3. Moisture Content: Should not exceed 18 lbs per 24 hrs per 1000 sq ft (8.79 kg per 24 hrs per 100 sq m) or 95 percent relative humidity.
   4. When using a Tramex measuring device to identify moisture levels in cementitious based substrates, use the Tramex measuring device to find the highest reading in the area to be installed and then run the concrete moisture testing method at the location of the recorded highest reading.

5. As a general guideline for floors with no in-floor heating system, if the Tramex is below 4 percent, primer/sealer will not be necessary; if between 4 and 6 percent, primer/sealer is required.

B. Wood Subfloor:
1. For moisture content and quality of substrates, the guidelines of the wood floor manufacturer shall be followed.
2. Wood Subfloor Moisture Content: 20 percent maximum.

3.4 SANDING AND PREPARATION OF NEW FLOORS:

A. Sand and prepare floor using accepted industry association methods.

B. Vacuum thoroughly.

C. Stained Floors: Make final cut with 80 to 100 grit paper. Then MultiDisc with 80 to 120 grit paper.

D. Unstained Floors: Make final cut with 80 to 120 grit paper. Then MultiDisc with 120 to 150 grit paper. This burnishing will reduce the amount of grain raise.

E. Use a Tampico Brush on a buffer and vacuum thoroughly.

F. Tack with a dry Bona Microfiber Tacking Pad or cloth to remove dust.

G. Apply finish system.

3.5 FINISH APPLICATIONS, GENERAL

A. Comply with instructions and recommendations of floor finish system manufacturer.

B. Finish System: As scheduled or indicated on the drawings.

3.6 OIL MODIFIED FINISHES AND SEALERS APPLICATIONS

A. Mixing: Shake or still well before applying. Do not thin.

B. Application, Wood Floor:
1. Apply going with the grain of the wood.
2. Feather out each stroke to avoid applicator marks.
3. Recommended Coverage Rate: 500 to 600 sq ft per gal (12.27 to 14.72 sq m per L).
4. Drying: Allow each coat to dry thoroughly; 8 to 12 hours. Recommended Conditions: 65 to 80 degrees F (18.3 to 26.7 degrees C), 40 to 60 percent relative humidity.
   a. High humidity and/or low temperatures extend dry time.
   b. Increased ventilation and airflow reduces dry time.
5. Abrade In-Between Coats: 120-grit or finer, screen, conditioning pad, or 180 to 240-grit Diamond abrasive.
6. Thoroughly vacuum and wipe with a clean, lint-free, water dampened cloth between coats of finish.
7. If desired, a third coat may be applied. Allow final coat to dry a minimum of 24 hours before use and avoid heavy traffic for 72 hours.
8. Recoating: Be sure floor is free from wax, polish and oily residues. Follow the Bona Prep system, applying 1 to 2 coats.

a. Recoating a Factory Prefinished Floor: Do not use Bona Woodline Poly. Use Bona Naturale or Bona Traffic finishes with the Bona Prep System.
b. If Contaminants are Present: Use the full Bona Recoat System to ensure adhesion. Otherwise, follow the Bona Prep process.
c. Delamination can occur if the Bona Prep process is not followed and the floor has not been tested for compatibility.

3.7 PROTECTION

A. After application, protect floor finish from damage during subsequent work.

B. Do not allow foot traffic until floor is sufficiently dried and cured.

END OF SECTION

SECTION 09 80 00
ACOUSTIC TREATMENT

PART 1 - GENERAL

1.01 SUMMARY:

1. Acoustic Wall panels.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Conference: Conduct conference at Matilija Junior High School, 703 El Paso Rd. Ojai CA, 93023

1.03 ACTION SUBMITTALS

A. Product Data: For manufacturer's product lines and accessories.

B. Include construction details, mounting, material descriptions, dimensions of individual components and profiles, and finishes.

C. For installation adhesives, documentation including printed statement of VOC content and chemical components.

D. Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

E. Shop Drawings:
1. Include mounting devices and details; details at panel head, base, joints, and corners; and details at ceiling, floor base, and wall intersections. Indicate panel edge and core materials.
2. Include plans and elevations showing panel sizes and direction of fabric weave and pattern matching.
3. Samples for Initial Selections: For each type of fabric facing from acoustic treatment unit manufacturer's full range.
4. Samples for Verification: For the following products:
5. Fabric: Full-width by approximately 20-inch square box tile Sample, but not smaller than required to show complete pattern repeat, from dye lot to be used for the Work, and with specified treatments applied.
6. Mark top and face of fabric.
7. Panel Edge: 12-inch long Sample(s) showing each edge profile, corner, and finish.
8. Mounting Devices: Full-size Samples.
9. Assembled Panels: Approximately 40 by 40 inches, including joints and mounting methods.

1.04 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Elevations, plans, and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

B. Electrical outlets, switches, and thermostats.

C. Suspended ceiling components above acoustic treatment units.

D. Structural members to which suspension devices will be attached.
Items penetrating or covered by acoustic treatment units including the following:
1. Lighting fixtures.
2. Air outlets and inlets. Speakers.
3. Alarms.
4. Sprinklers.
5. Access panels.

E. Show operation of hinged and sliding components covered by or adjacent to acoustic treatment units.

F. Product Certificates: For each type of acoustic treatment unit, from manufacturer.

G. Warranty: Sample of special warranty.

1.05 CLOSEOUT SUBMITTALS

A. Maintenance Data: For sound-absorbing wall units to include in maintenance manuals. Include fabric manufacturers' written cleaning and stain-removal recommendations.

1.06 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials from same production run that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

B. Fabric: For each fabric, color, and pattern installed, provide length equal to six 10x10 tiles

C. Mounting Devices: Full-size units equal to ten percent of amount installed, but no fewer than twenty-four devices, including unopened adhesives.

1.07 QUALITY ASSURANCE

A. Flame spread/smoke developed index with Class A fire rated certification when tested in accordance with ASTM E84.

B. Installer’s Qualifications: A firm experienced in producing acoustic treatment similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

D. Build mockups of typical wall and ceiling area as directed by Architect. Include intersection of wall and ceiling corners and perimeters.

E. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

F. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturers' written instructions for minimum and maximum temperature and humidity requirements for shipment, storage, and handling.

B. Deliver materials in unopened bundles.

C. Store materials in cool, dry, well ventilated area out of direct sunlight and away from heat sources.

D. Do not allow water to come into direct contact with material during storage.

E. Do not store materials longer than 6 months.

F. Protect materials delivered and placed in storage from the weather, humidity and temperature variations, dirt, dust, or other contaminants.

1.09 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer.

B. Field Measurements: Verify field measurements before fabrication.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of acoustical units that fail in materials or workmanship within specified warranty period.

B. Failures include, but are not limited to the following:
   1. Acoustical performance.
   2. Fabric sagging, distorting, or releasing from panel edge.
   3. Warping of core.

C. Warranty Period: Two years from date of shipment

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturers:
   1. Basis of Design: Zintra Box Tile. Manufacturer: Subject to compliance with requirements, provide Zintra Acoustic Solutions by MDC Interior Solutions 400 High Grove Blvd. Glendale Heights, IL 60139
   2. Or equal.
B. Source Limitations: Obtain acoustic treatment system from single source from single manufacturer

2.02 PERFORMANCE REQUIREMENTS

A. General Requirements for Acoustic Treatment: Provide systems that comply with the testing and product requirements of the California Department of Health Services' "Standard
B. Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Fire-Test-Response Characteristics: Provide fabric systems meeting the following requirements as determined by testing identical products by UL 723, UBC, or another testing and inspecting agency acceptable to authorities having jurisdiction:

D. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

E. Flame-Spread Index: 25 or less.

F. Smoke-Developed Index: 450 or less.

G. Fire Growth Contribution: Comply with acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 286.

2.03 ACOUSTIC PANEL TREATMENT - WALLS

A. Box Tile: Manufacturer's standard assembled acoustic treatment with 3M dual lock fastener and template

B. Configuration: As indicated on Drawings.

C. Size: As indicated on Drawings.

D. Depth: As indicated on Drawings.
E. Thickness: 1/2 inch folded to create various depth.

F. Color: As indicated on Drawings.

G. Core Material: Manufacturer's standard.

H. Application: Apply box tiles in indoor locations. Do not install in wet areas.

I. Acoustical Performance: Sound absorption NRC of 0.90 according to ASTM C 423 for Type A mounting according to ASTM E 795.

J. Installation Materials:
   a. Installation Products, General: Directly applied to substrate, recommended by manufacturer, and as follows:
      1) Adhesives: Silicone-based construction adhesive.
      2) Z-clips: Manufacturer's standard.
      3) Aluminum trim: Manufacturer's standard
      4) Fasteners: Manufacturer's standard
      5)

2.04 MATERIALS

A. Composition: 100 percent virgin polyethylene terephthalate (PET).

B. Core Material: Manufacturer's standard.

C. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063.

D. Adhesives: As recommended by manufacturer and with a VOC content of [70] <Insert value> g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

E. Adhesives: As recommended by demountable-partition manufacturer and that comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.05 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.06 FABRICATION

A. General: Use manufacturer's standard construction except as otherwise indicated; with facing material applied to face, edges, and back border of dimensionally stable core; and with rigid edges to reinforce panel perimeter against warpage and damage.

B. Facing Material: Apply fabric facing fully covering visible surfaces of unit; with material stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags, blisters, seams, adhesive, or other visible distortions or foreign matter.

C. Square Corners: Tailor corners.

D. Radius and Other Non-square Corners: Attach facing material so there are no seams or gathering of material.

E. Fabrics with Directional or Repeating Patterns or Directional Weave: Mark fabric top and attach fabric in same direction so pattern or weave matches in adjacent units.

F. Dimensional Tolerances of Finished Units: Plus or minus **1/16 inch** for the following:
1. Thickness.
2. Edge straightness.
3. Overall length and width.
4. Squareness from corner to corner.
5. Chords, radii, and diameters.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine fabric, fabricated units, substrates, areas, and conditions, for compliance with requirements, installation tolerances, and other conditions affecting performance of sound-absorbing wall units.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's written instructions for installation of acoustic treatment units using type of mounting devices indicated. Mount units securely to supporting substrate.
B. Unroll acoustic panels sheets and allow it to stabilize before cutting and fitting.

C. Align and level fabric pattern and grain among adjacent units.

D. Install wall units in locations indicated with vertical surfaces and edges plumb, top edges level and in alignment with other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.

E. Install ceiling units in locations indicated with edges in alignment with walls and other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.

3.03 INSTALLATION TOLERANCES

A. Variation from Alignment with Surfaces: Plus or minus 1/16 inch.

B. Variation from Level or Slope: Plus or minus 1/8 inch.
C. Variation of Panel Joints from Hairline: Not more than 1/16 in wide.

3.04 CLEANING

A. Vacuum clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.
B. Remove spills immediately using clean damp cloth or with soap and water.

SECTION 09 91 13
PAINTING

PART 1 – GENERAL

1.01 DESCRIPTION: Division 1 applies to this section. Provide and perform painting, complete.

A. Work In This Section: Principal items include:
   1. Preparation of surfaces.
   2. Painting of interior surfaces, except as otherwise specified.
   3. Painting of exterior surfaces, except as otherwise specified.

B. Related Work Not In This Section:
   1. Shop prime coats and factory finishes.
   2. Painting specified as work of other sections.
   3. Caulking and sealants.

C. Surfaces Not To Be Painted:
   1. Non-ferrous metal work (other than zinc-coated surfaces) and plated metal, unless particular items are specified to be painted.
   2. Stone surfaces.
   3. Exterior concrete walls and surfaces unless particular items are specified to be painted.
   4. Surfaces concealed in walls and above solid ceilings.
   5. Non-metallic walking surfaces unless specifically shown or specified to be painted.
   6. Factory finished surfaces.
   7. Ceramic tile and plastic surfaces.
   8. Resilient base.
   9. Galvanized fencing.
   10. Galvanized gratings.
   11. Surfaces indicated not to be painted.
   12. Surfaces specified to be finish painted under other sections.

1.02 COMPLIANCE WITH REGULATIONS: All materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous materials in paint.

1.03 SUBMITTALS:

A. List of Paint Materials: Prior to submittal of samples, submit a complete list of proposed paint materials, identifying each material by manufacturer's name, product name and number, including primers, thinners, and coloring agents, together with manufacturers' catalog data fully describing each material as to contents, recommended usage, and preparation and application methods. Identify surfaces to receive various paint materials. Do not deviate from approved list.

B. Color Samples: Prior to preparing samples, obtain color and gloss selections and instructions. Using materials from approved list, prepare and submit 8-1/2" by 11" samples of each complete opaque paint finish.
C. Natural or Stain Finish Samples: Prepare samples on 1 2" squares of the same species and appearance of wood as used in the work.
D. Job Samples: Apply minimum 100 square foot samples on site, on actual surfaces to be finished with each material, color, and gloss, in locations as directed. Prime and intermediate coats shall extend one foot beyond finish coat on each sample in at least 2 directions. Obtain approval of each sample prior to proceeding with the work. Leave the samples in place, with removable tags, until completion of the work. All work shall match approved samples.
E. Certificates: Submit certificate showing that all products meet the requirements of paragraph "Compliance with Regulations" above.

1.04 JOB CONDITIONS:

A. Protection: Protect all painting while in progress and cover and protect adjoining surfaces and property of others from damage. Exercise care to prevent paint from contacting surfaces not to be painted. During painting of exterior work, cover windows, doors, concrete, and other surfaces not to be painted.
B. Examination of Surfaces: Examine surfaces to be painted or finished under this Section and verify satisfactory condition. Unsatisfactory conditions shall be corrected before application of the first coat of paint.
C. Weather Conditions: Apply paint to clean, dry, prepared surfaces. Do not apply exterior paint during rainy, damp, foggy, or excessively hot and/or windy weather. Arrange for temporary heat and ventilation for interior painting.
D. Precaution: Place rags and waste in self-closing metal containers, removed from site at the end of each day. Do not let rags and waste accumulate.

1.05 EXTRA STOCK:

A. Provide a one-gallon container of each paint color and surface texture to Owner at acceptance.
B. Label each container with color, texture, and original application locations, in addition to the manufacturer's label.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

Dunn-Edwards Corp. (Basis of Design)
4885 E. 52nd Place
Los Angeles CA, 90058
(323) 771-3330

Benjamin Moore & Co.
51 Chestnut Ridge Road
Montvale NJ 07645
(888) 236-6667

Vista Paint Corporation
2020 Orangethorpe Avenue, Suite 210
Fullerton CA 92831
(323) 397-9000
FAX (323) 883-0273

The Sherwin Williams Company, Inc.
101 W. Prospect Ave.
Cleveland, OH 44115
(215) 566-2000

PART 3 - EXECUTION

3.01 WORKMANSHIP: Apply painting materials in accordance with manufacturer's instructions by brush or roller; spray painting is not allowed without specific approval in each case unless noted otherwise. For this project, spray painting and backrolling is acceptable at exterior walls and exterior ceilings. Apply each coat at the proper consistency, free of brush or roller marks, sags, runs, or other evidence of poor workmanship. Do not lap paint on glass, hardware, and other surfaces not to be painted; apply masking as required. Sand between enamel coats. Apply painting materials in accordance with manufacturer's

3.02 PREPARATION OF SURFACES: Properly prepare surfaces to receive finishes.

A. Concrete: Fill cracks, holes, and other blemishes with Portland cement patching plaster or a stiff paste mixed of finish paint and fine sand, finished to match adjoining surfaces. Remove glaze by sanding, wire brushing, or light brush-off sandblasting. Neutralize all alkali conditions according to the paint manufacturer's directions. Dry surfaces to receive breathing type latex paints at least two weeks, free of visible moisture. Dry the surfaces to receive oil, alkyd, or epoxy-based paint until the moisture content does not exceed 8% when tested with an electronic moisture-measuring instrument.
B. Masonry: Repair minor holes and cracks with a stiff paste of finish paint and fine sand or vinyl type block filler. Report major or unsightly defects for correction. Neutralize all alkali and efflorescence according to paint manufacturer's directions and allow to dry.
C. Exterior Plaster: Fill hairline cracks with Portland cement patching material; report larger cracks for correction. Test and ensure plaster is sufficiently dry to receive the paint finish.
D. Gypsum Wallboard: Touch-up minor defects with spackle and sand smooth and flush. Report other defects as specified. Verify that skim coat specified in Section 09250 is properly applied. If not, apply one heavy coat of skim coat material specified in Section 09250, over entire surface by brush or roller.
E. Shop Coated Metal: Degrease and clean of foreign matter. Clean and spot prime field connections, welds, soldered joints, burned, or abraded portions with same material used in shop coats. After complete hardening, sand entire surfaces for coat to follow.

F. Uncoated Ferrous Metal: Degrease and clean of dirt, rust, mill scale, and all other foreign matter using power tool rotary brushes to achieve a clean surface consistent with SSPC-SP3. Remove pits and welding slag, and clean surfaces to bright metal before priming. Apply metal primer not more than three hours after preparation.
G. Galvanized Metal: Eliminate contaminants and stabilize zinc film by solvent wiping or sweep blasting, as appropriate, followed by not less than one coat of wash primer of type specified in Paint Schedule hereafter, to provide suitable surface for finish painting. Allow to dry. Prepare a representative surface, not smaller than 24" square, or 36" by length of section, as applicable, and obtain approval prior to proceeding.
    1. Solvent wiping: Remove oil and grease with rags or brushes saturated in trisodium phosphate or similar alkaline detergent. For heavier soil, use MEK, or equivalent proprietary cleaner. Do not use vinegar or acetic acid.
    2. Sweep blasting: Use aluminum/magnesium silicate, limestone or other non-metallic blast media to expose pure zinc.
    3. Wash primer: Spray apply one coat of specified wash primer after other preparation is complete, to thickness of 0.5 mils. Allow to dry 60 minutes and apply top coating in not more than 4 hours, If this time is exceeded for any reason, reapply wash primer prior to applying finish paint.
H. Enameled Woodwork: Remove handling marks and effects of exposure to moisture with a thorough sanding overall surfaces of the exposed portions, using at least 150 grit of finer sandpaper and thoroughly clean all surfaces before applying sealer. After priming, putty nail holes, cracks, or other defects with putty matching color of finish paint. Cover knots and sappy areas with shellac or approved knot sealer. Sand each base coat smooth when dry.
I. Transparent Finished Woodwork: Remove handling marks and effects of exposure to moisture with a thorough sanding parallel to the grain of the wood, over all surfaces of the exposed portions, including interiors of cases and drawers, using at least 150 grit or finer sandpaper and thoroughly clean all surfaces before applying sealer. Repair all defects with filler tinted to match stain or wood color, as required, after first coat of sanding sealer and remove all smears.
J. Fixtures, Equipment, and Hardware Items: Coordinate with the work of other sections, and coordinate removal of fixtures, equipment, and hardware as required to perform painting. Items to be removed include, without limitation: signs and graphics; switch and receptacle plates; escutcheons and plates; all surface-mounted equipment; free-standing equipment blocking access; grilles and louvers at ducts opening into finished spaces; and other items as required and directed. Surfaces Not Mentioned: Prepare surfaces according to recommendations of the paint manufacturer and as approved.
K. Surfaces Not Mentioned: Prepare surfaces according to recommendations of the paint manufacturer and as approved.
L. Moisture Content: Measure moisture at surfaces using an electronic moisture meter.

M. Do not apply finishes unless moisture is below the following maximums:
   1. Exterior Plaster and Concrete: 15 percent
   2. Exterior Wood: 19 percent
   3. Interior Gypsum Wallboard: 12 percent Interior Wood:4. 1 5 percent measured in accordance with ASTM D2016

3.03 COATS: The number of paint coats specified to be applied are minimum. Apply additional coats if required to obtain complete hiding and approved results. Ensure acceptable paint finishes of uniform color, free from cloudy or mottled areas and evident thinness on arises. "Spot" or undercoat surfaces as necessary to produce such results. Tint each coat a slightly different shade of finish color to permit identification. Conform to the approved Samples. Obtain approval of each coat before applying next coat; otherwise, apply an additional coat over entire surface involved at no additional contract cost.

3.04 COLORS: The numbers given in the following schedule indicate the types of paints required for each surface, identified by their number in white. The actual paint to be applied on each surface shall be the same material in the color or colors as selected, and as approved on submitted samples. Allow for the use of several colors in each room or space, and for doors, frames, dadoes, trim and other items to be finished in different colors.

3.05 DEGREE OF GLOSS: Degrees of gloss shown on drawings and herein specified are approximate only. The exact degree of gloss required for each surface will be determined. Materials shall meet the following requirements for degree of gloss, when tested according to ASTM D523, using Gardner Laboratory 60-degree gloss meter after 14 days.

NOMENCLATURE	**PERCENTAGE OF GLOSS**
FLAT	LESS THAN 10
SUEDE OR EGGSHELL	25 – 55
SATIN OR SEMI-GLOSS	55 – 70
GLOSS OR HIGH GLOSS	MORE THAN 70

3.06 MISCELLANEOUS PAINTING:

A. Fire Extinguisher and Fire Hose Cabinets and Fire Alarm Bells: Apply 2 coats of paint finish, inside and out, matching finish and color of adjoining areas, unless otherwise noted or directed.
B. Weatherstripping and Sound Seals. Paint exposed metal surfaces to match the door frame, whether or not unfinished, furnished with factory prime coat, or factory treated for paint adhesion.
C. Doors: Seal top and bottom edges after cleaning with coat of primer. Where the faces of the doors differ in color or finish, finish the edges to match the face visible when the door is open. Coat cutouts for hinges, edges of lockset holes and strikes same as for first coat.
D. Access doors and panels: Generally, paint same color as surrounding walls and ceiling.
E. Louvers and glazed frames in wood and metal doors: Unless otherwise directed, paint 3 coats, colors to match doors.

F. Door Trim and Prime Coated Hinges: Paint trim to match door and paint hinges to match frame only where hinges are currently painted. Do not paint unfinished hinges.
G. Speaker Grilles: Paint to match surrounding surfaces unless specified otherwise.
H. Miscellaneous. For any items not specifically indicated or specified that require a paint finish, apply 3 coats of paint as directed.

3.07 CLEANING AND TOUCH-UP WORK. Make a detailed inspection of paint finishes after all painting is completed, remove spattering of paint from the adjoining surfaces, and make good all damage that may be caused by cleaning operations. Carefully touch-up all abraded, stained, or otherwise disfigured painting, as approved, and leave entire painting in first-class condition.

PAINT SCHEDULES

TABLE 1
EXTERIOR PAINTING SCHEULE

* TYPICAL SCOPE FOR ALL EXISTING PAINTED SURFACES IN THE PROJECT: SPOT PRIME WHERE NEEDED & APPLY (2) COATS OF PAINT PER TABLE BELOW. TYPCIAL SCOPE FOR ALL EXISTING UNPAINTED SURACES: PRIME & APPLY (2) COATS OF PAINT PER TABLE BELOW.

SURFACE, COATS	DUNN-EDWARDS	BENJAMIN MOORE	VISTA PAINT	SHERWIN WILLIAMS
PLASTER & CONCRETE (100% ACRYLIC EGGSHELL/SATIN)				
FIRST COAT	ESPR00 - EFF-STOP PREMIUM	N023 FRESH START PRIMER	4600 UNIPRIME	LOXON LX02W0050
SECOND COAT	EVSH10 - EVERSHIELD10	631 AURA SATIN	2000 DURATONE	SUPERPAINT SATIN A89
THIRD COAT	EVSH10 - EVERSHIELD10	631 AURA SATIN	2000 DURATONE	SUPERPAINT SATIN A89
CONC. UNIT MASONRY (100% ACRYLIC EGGSHELL/SATIN)	SBSL00-SMOOTHBLOC-FIL			
FIRST COAT	SELECT	571 LATEX BLOCK FILL	040 BLOCK KOTE	HVY DUTY FILLER B42W46
SECOND COAT	EVSH10 - EVERSHIELD10	631 AURA SATIN	2000 DURATONE	SUPERPAINT SATIN A89
THIRD COAT	EVSH10 - EVERSHIELD10	631 AURA SATIN	2000 DURATONE	SUPERPAINT SATIN A89
FERROUS METAL ALKYD URETHNE SEMIGLOS ENAMEL				
FIRST COAT	BRPR00-BLOC-RUST PREMIUM	OR EQUAL FROM OTHER MFRS	9600 PROTEC METAL PRIME	PROCRYL PRIMER B66 SERIES
SECOND COAT	ASHL50 - ARISTOSHIELD50		9800 PROTEC SEMIGLOSS	PI WB ALKYD URETHANE B53
THIRD COAT	ASHL50 - ARISTOSHIELD50		9800 PROTEC SEMIGLOSS	PI WB ALKYD URETHANE B53
GALVANIZED METAL, ALKYD URETHNE SEMIGLOS ENAMEL	SC-ME01 - KRUD KUTTER	OR EQUAL FROM OTHER MFRS		
PRETREAT	METAL CLEAN AND ETCH		JASCO PREP N'PRIME	DTM WASH PRIMER
FIRST COAT	UGPR00 - ULTRAGRIP PREMIUM		9600 PROTEC METAL PRIME	PROCRYL PRIMER B66 SERIES
SECOND COAT	ASHL50 - ARISTOSHIELD50		9800 PROTEC SEMIGLOSS	PI WB ALKYD URETHANE B53
THIRD COAT	ASHL50 - ARISTOSHIELD50		9800 PROTEC SEMIGLOSS	PI WB ALKYD URETHANE B53
WOOD - PAINTED, 100% ACRYLIC SEMI-GLOSS ENAMEL				
FIRST COAT	EZPR00 - E-Z PRIME PREMIUM	N023 FRESH START PRIMER	4200 TERMINATOR	PREPRITE PROBLOCK B51
SECOND COAT	ASHL50 - ARISTOSHIELD50	W096 MOORGLO	8400 CAREFREE	SOLO A76 SERIES
THIRD COAT	ASHL50 - ARISTOSHIELD50	W096 MOORGLO	8400 CAREFREE	SOLO A76 SERIES
WOOD, SEMI-TRANSPARENT STAIN				
FIRST COAT				
SECOND COAT (IF REQ'D)	CABOT STAIN	C329 SEMI-SOLID STAIN	OLYMPIC ST STAIN	WOODSCAPES A15T5
	SEMI-SOLID	C329 SEMI-SOLID STAIN	OLYMPIC ST STAIN	WOODSCAPES A15T5

TABLE 2
INTERIOR ENAMEL MATERIALS

SURFACE, COATS	DUNN-EDWARDS	BENJAMIN MOORE	VISTA PAINT	SHERWIN WILLIAMS
100% ACRYLIC FINISH, GLOSS	SWLL50 SPARTAWALL60	309 IMPERVEX	8500 CAREFREE	SOLO A77 GLOSS SERIES
100% ACRYLIC FINISH, SEMI-GLOSS WALLS AND CEILINGS ONLY NON-BLICKING, FOR DOORS AND WINDOWS	W6160E VERBAGLO SWLL50 SPARTAWALL60	276 MOORCRAFT 333 REGAL AQUAGLO	7000 ACRIGLO 8400 CAREFREE	SOLO A76 SEMI-GLOSS SERIES
100% ACRYLIC FINISH, EGGSHELL	W6Z50E VERSASATIN	277 SUPER SPEC PEARL	1700 COVERALL	SOLO EGGSHELL A75 SERIES

TABLE 3
INTERIOR PAINTING SCHEDULE

SURFACE, COATS	DUNN-EDWARDS	BENJAMIN MOORE	VISTA PAINT	SHERWIN WILLIAMS
WOOD, SEMI-TRANSPARENT STAIN	SWLL50 SPARTAWALL60	215 REGAL WALL SATIN	8100 CAREFREE	PROMAR 200HP EGGSHELL B20-1900
FIRST COAT	SWLL50 SPARTAWALL60	215 REGAL WALL SATIN	8100 CAREFREE	
SECOND COAT				PROMAR 200HP EGGSHELL B20-1900
CONCRETE UNIT MASONRY, ACRYLIC FLAT FINISH	SB5L00 - SMOOTH BLOCK-FIL	205 BLOCK FILLER	040 BLOCK KOTE	BLOCK FILLER B42W46
FIRST COAT	SELECT	215 REGAL WALL SATIN	8100 CAREFREE	PROMAR 200HP EGGSHELL B20-1900
SECOND COAT	ENAMEL FINISH	215 REGAL WALL SATIN	8100 CAREFREE	
THIRD COAT	ENAMEL FINISH			PROMAR 200HP EGGSHELL B20-1900
GYPSUM BOARD, ENAMEL FINISH				PROMAR 200 B28W2600
FIRST COAT	VNSL00 - VINYLASTIC SELECT	216 FIRST COAT	110 HI BUILD SEALER	PROMAR 200HP EGGSHELL B20-1900
SECOND COAT	ENAMEL FINISH	ENAMEL FINISH	ENAMEL FINISH	
THIRD COAT	ENAMEL FINISH	ENAMEL FINISH	ENAMEL FINISH	PROMAR 200HP EGGSHELL B20-1900
WOOD, ENAMEL FINISH				
FIRST COAT	BIPR00 - BLOCK-IT PREMIUM	023 FRESH START	188 ACRYLIC UNDERCOATER	PREPRITE B51 SERIES
SECOND COAT	ENAMEL FINISH	ENAMEL FINISH	ENAMEL FINISH	SOLO A76 SERIES
THIRD COAT	ENAMEL FINISH	ENAMEL FINISH	ENAMEL FINISH	SOLO A76 SERIES
WOOD, SATIN CLEAR VARNISH 3 COATS	MCCLOSKEY'S 6701	C435 BENWOOD LOW LUSTER	DEFTHANE SATIN CLEAR	MINWAX WATERBASE SPARURETHANE SATIN
FERROUS METAL, ENAMEL FINISH				
FIRST COAT	UGPR00 - ULTRA-GRIP PREMIUM	MO4ACRYLIC METAL RIMER	4800 METAL PRO	PROCRYL PRIMER B66 SERIES
SECOND COAT	ENAMEL FINISH	ENAMEL FINISH	ENAMEL FINISH	PI WB ALKYD URETHANE B53
THIRD COAT	ENAMEL FINISH	ENAMEL FINISH	ENAMEL FINISH	PI WB ALKYD URETHANE B53
GALVANISED METAL, ENAMEL FINISH				
PRETREAT	SC-ME01 - KRUD KUTTER METAL	JASCO PREP N'PRIME	JASCO PREP N'PRIME	DTM WASH PRIMER
FIRST COAT	CLEAN & ETCH	MO4 ACRYLIC METAL PRIMER	4800 METAL PRO	PROCRYL PRIMER B66 SERIES
SECOND COAT	UGPR00 - ULTRA-GRIP PREMIUM	ENAMEL FINISH	ENAMEL FINISH	PI WB ALKYD URETHANE B53
THIRD COAT		ENAMEL FINISH	ENAMEL FINISH	PI WB ALKYD URETHANE B53

END OF SECTION

SECTION 10 14 24
SIGNAGE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Cast aluminum letters.

B. Interior and Exterior signage of the following types:
   1. ADA compliant interior signage, without borders.
   2. Fire evacuation, area of rescue assistance and specialty signs.

1.2 REFERENCES

A. California Building Code, current edition.

B. ANSI/ICC A117.1 - Accessible and Useable Buildings and Facilities.

C. ATBCB ADAAG - Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG); U.S. Architectural Transportation Barriers Compliance Board.

1.3 SUBMITTALS

A. See Section 01 33 00 - Submittal Procedures.

B. Product Data: Manufacturer's descriptive literature.

C. Shop Drawings: List sign styles, lettering, locations and dimensions of each interior and exterior signs.

D. Selection Samples: One complete set of color chips representing manufacturer's full range of available colors.

E. Verification Samples: Two full size samples, representing type, style and color specified including method of attachment.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with requirements of California Building Code.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inspect products upon receipt. Store products in manufacturer's packaging until ready for installation.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Raised (Tactile) character depth, case, and style: Raised character on sign shall be raised 1/32 inch minimum, uppercase, sans serif style, and shall be duplicated in Braille. (11B-703.2)

B. Braille: Braille shall be contacted (Grade 2). Braille dots shall have a domed or rounded shape and shall comply with Table 11B-703.31 below. Braille shall be positioned below the corresponding text in a horizontal format, flush left or center. With multi-lined text, Braille shall be placed below the entire text. Braille shall be separated 3/8 inch minimum and ½ inch maximum from any other tactile characters, and 3/8 inch minimum from raised borders and decorative elements. (11B-703.2)

TABLE 11B-703.3.1 BRAILLE DIMENSIONS

MEASUREMENT RANGE	MINIMUM TO MAXIMUM
Dot base diameter	0.059 to 0.063 inch
Distance between two dots in the same cell [1]	0.100 inch
Distance between corresponding dots in adjacent cells [1]	0.300 inch
Dot height	0.025 to 0.037 inch
Distance between corresponding dots from one cell directly below [1]	0.395 to 0.400 inch

[1] Measure center to center.

C. Raised character stroke thickness: Stroke thickness of the uppercase letter “I” shall be 15 percent maximum based on the height of the uppercase letter “I”. (11B-703.2)

D. Raised character height: Raised character height shall be 5/8 inch minimum and a maximum of 2 inches maximum based on the height of the uppercase letter “I”. (11B-703.2)

E. Raised character and line spacing: Character spacing shall be measured between the two closest points of adjacent raised character within a message, excluding word spaces. Where characters have rectangle cross sections, spacing between individual raised characters shall be 1/8 inch minimum and 4 times the raised character stroke width maximum. Where characters have the other cross sections, spacing between individual raised characters shall be 1/16 inch minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch minimum. Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height. (11B-703.2)

F. Tactile sign installation height and location: Tactile characters on signs shall be located minimum 48 inches above the finish floor or ground surface, measured from the baseline of the lowest Braille cells and 60 inches maximum above the finish floor or ground surface, measured from the baseline of the highest line of raised characters. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side. Where at double doors with one active leaf, the sign shall be located on the inactive leaf. Where at double doors with two active leaves, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of the single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile characters shall be located so that a dear floor space of 18 inches maximum by 18 inches minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 decree open position. (11B-703.4)

G. Raised and visual character proportions: Characters shall be selected from fonts where the width of the uppercase letter “O” is 60 percent minimum and 110 percent maximum of the height of the uppercase “I”. (11B-703.2 and 11B-703.5)

H. Raised and visual character format: Text shall be in a horizontal format. (11B-703.2 and 11B-703.5)

I. Visual character and line spacing: Visual character spacing on sign shall be measured between the two closest points of adjacent characters, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of character height. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height. (11B-703.5)

J. Visual character height and installation height: Minimum character height shall comply with Table 11B-703.5.k below. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter “I”. Visual characters shall be installed at 40 inches minimum above the finish floor or ground except for the elevator car controls, floor-level exit signs and emergency procedures information. (11B-703.5)

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches to less than or equal to 70 inches	less than 72 inches	5/8 inch
	72 inches and greater	5/8 inch, plus 1/8 inch per foot of viewing distance above 72 inches
greater than 70 inches to less than or equal to 120 inches	less than 180 inches	2 inches
	180 inches and greater	2 inches, plus 1/8 inch per foot of viewing distance above 180 inches
greater than 120 inches	less than 21 feet	3 inches
	21 feet and greater	3 inches, plus 1/8 inch per foot of viewing distance above 21 feet

K. Visual character case and style: Visual characters on sign shall be uppercase or lowercase or a combination of both and conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms. (11B-703.5)

L. Visual character stroke thickness: Stroke thickness of the uppercase letter “I” shall be 10 percent maximum of the height of the character. (11B-703.5)

M. Visual character pictogram finish and contrast: Visual characters and their background, and pictograms and their fields sign shall have a non-glare finish. Characters shall contrast with their background; and pictograms shall contrast with their field. (11B-703.5 and 11B-703.5)

N. Pictogram field and text descriptors: Pictograms shall have a field height of 6 inches minimum; characters and Braille shall not be located in the pictogram field. Text descriptions shall be located directly below the pictogram field; and shall comply with the requirements for raised characters and Braille. (11B-703.6)

2.2 MANUFACTURERS

A. Interior Flat Signs:
1. Best Sign Systems, Inc: www.bestsigns.com.
2. Mohawk Sign Systems, Inc: www.mohawksign.com.
3. Seton Identification Products: www.seton.com/aec.
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Cast Metal Leters:
1. Metal Arts, www.metalarts.com.
2. Or equal.
3. Substitutions: See Section 01 60 00 - Product Requirements.

2.3 INTERIOR SIGNS

A. See drawing sheet A-302 for additional requirements.

B. ADA-Compliant Interior and Exterior Signage, Borderless:
1. See drawings for overall requirements for size, style, layout, and braille requirements.
2. Sign Thickness: 1/4 inch thick or 1/2 inch thick as indicated on drawings.
3. Construction: One-piece and two-piece with inserts; added-on or engraved characters not acceptable.
4. Lettering Style: Avenir by Adobe.
5. Braille: California contracted Grade 2 Braille, placed directly below last line of letters or numbers.
6. Performance: Non-static, fire-retardant, and self-extinguishing.
7. Contrast: Letters numbers and symbols shall contrast with background.
8. Corners: Square and round as drawn.
9. Color of Plastic: As selected from manufacturer's standard colors.
10. Finish of Plastic: Matte.
11. Color of Background: As selected from manufacturer's standard paint colors.
12. Letter and Number Sizes: See drawings.

13. Sign Margins: Letters and numbers, 1/2 inch left margin and 3/8 inch top margin.
14. Sign Sizes: See drawings.

C. Fire Evacuation, Area of Rescue Assistance and Specialty Signs:
1. Style: Fire Evacuation and Area of Rescue Assistance Signs by Best Sign Systems.
2. Emergency Exit Only Signs: 18-1/2 by 6-1/2 inches 'MP' plastic with copy raised with background and symbol painted 2 standard paint colors.
3. Lettering Style: Typeface as selected, upper case.
4. Letter and Number Size: As selected.
5. Lettering Location: Centered on sign..
6. Symbol Height: As selected.
7. Braille: Grade 2 Braille, placed directly below last line of letters or numbers.
8. Corners: Square.

D. Nonilluminated Message-Strip Directories: Extruded-aluminum profiled frame at top and bottom, with sheet metal rear cover, housing changeable message strips in configuration indicated.
1. Frame:
a. Top and Bottom Profile: Square.
b. Side Trim: Aluminum angle.
c. Depth: Manufacturer's standard 1-1/2- to 2-1/2-inch (38- to 64-mm) frame depth.
d. Profile Face Dimension: 6 inches (152 mm) high.
e. Aluminum Finish: Clear anodic.
f. Cover: Removable, clear acrylic sheet held in place by perimeter frame. Provide suction cup tool for cover removal.
g. Number of Columns: As indicated on Drawings.
h. Mounting: Surface.
i. Header: Copy applied to top section of profiled frame.
j. Divider Color: As indicated on Drawings.

2.4 DIMENSIONAL CHARACTERS

A. Cast Metal Characters:
1. Style: Floating.
2. Height: 9 inches.
3. Finish: Brushed Aluminum.
4. Mounting: Pin mounted.
5. Provide UL Listed LED backlighting at exterior cast metal letters.

B. Field-Applied, Vinyl-Character Signs
1. Prespaced characters die cut from 3- to 3.5-mil (0.076- to 0.089-mm) thick, weather-resistant vinyl film with release liner on the back and carrier film on the front for on-site alignment and application.
2. Substrate: Glass

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine installation areas to ensure that conditions are suitable for installation.

B. Examine signage for defects prior to installation. Do not install damaged signage.

3.2 PREPARATION

A. Verify mounting heights and locations for interior signage will comply with referenced standards.

B. Clean mounting locations of dirt, dust, grease or similar conditions that would prevent proper installation.

3.3 INSTALLATION

A. Install signs level, plumb, without distortion, and in proper relationship with adjacent surfaces using manufacturer's recommended standard mounting system.
   1. Mounting: Mount with vinyl foam tape where possible.
      a. Where exposed fasteners are required, use stainless steel or painted to match sign.

B. Remove adhesive from exposed sign surfaces as recommended by manufacturer.

C. Clean signs after installation as recommended by manufacturer.

D. Replace damaged products before Substantial Completion.

END OF SECTION

SECTION 26 5213

PHOTOLUMINESCENT EXIT SIGNS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Photoluminescent over-door exit signs.

B. Related Sections:
   1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

A. National Fire Protection Association (NFPA) 101 - Life Safety Code.

B. Underwriters Laboratories, Inc. (UL) - 924 - Standard for Emergency Lighting and Power Equipment.

1.3 QUALITY ASSURANCE

A. Provide exit signs in accordance with 2019 California Building Code.

1.4 SUBMITTALS

A. Submittals for Review:
   1. Shop Drawings: Indicate exit sign locations, mounting heights, and attachments.
   2. Product Data: Include product description, materials, finishes, and performance characteristics.
   3. Samples: One full size exit sign. [Sample will be returned for installation on project.]

1.5 DELIVERY, STORAGE AND HANDLING

A. Store exit signs in a dry location until installed.

1.6 WARRANTIES

A. Provide manufacturer's limited warranty:
   1. Signs and markings installed in interior locations: 25 years.
   2. Signs and markings installed in exterior locations: 3 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Contract Documents are based on products by EverGlow NA, Inc. (www.everglow.us)

B. Substitutions: Under provisions of Division 01.

2.2 MANUFACTURED UNITS

A. Photoluminescent Exit Signs:
   1. Description:
      a. Sign face, frames, and mounting brackets: Aluminum, minimum 60 percent post-consumer recycled content.
      b. Sign face: Aluminum sheet with photoluminescent markings.
      c. Absorb and store energy from ambient light, not requiring external power supply, lamps, LED's or batteries.
      d. Non-toxic, non-radioactive.
      e. High-visibility illumination.
      f. Free from vinyl and polyvinyl chloride compounds.
      g. Manufactured using low-VOC inks and coatings.
      h. UL approved for use in interior locations with fluorescent lighting.
      i. Tested and listed to UL 924.
   2. Background color of sign face: Green
   3. Frame type: Aluminum framed, low profile type.
   4. Frame finish: Clear anodized.
   5. Sign type:[One sided.
   6. Mounting type: Wall.
   7. Mounting brackets: Manufacturer's standard for frame system, aluminum, clear anodized finish.
   8. Directional indicators: Two self-adhering chevron profile indicators per sign, for field application.
   9. Sign size:
      a. Sign face: Approximately 8.6 inches high x 13.7 inches wide.
      b. Sign with frame: Approximately 9.3 inches high x 14.4 inches wide.
   10. Lettering: "EXIT" in 7 inch high letters with 7/8 inch stroke.
   11. Performance characteristics:
      a. Meet NFPA 101, Building Code, and Fire Code requirements for internally illuminated exit signs.
      b. Visible at 75 feet in total darkness.
      c. Tested by ETL; listed to UL 924.
      d. Service life: Minimum 25 years for interior installations.

2.3 ACCESSORIES

A. Fasteners: Stainless or corrosion-resistant; type best suited to application.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install signs in accordance with 2019 California Building Code, manufacturer's instructions, and approved Shop Drawings.

B. Locate signs to conform to 2019 California Building Code.

C. Set signs plumb, level, and rigid.

D. Attach signs to supporting construction.

E. Attach directional arrow chevrons to sign faces to suit project requirements.

3.2 FIELD QUALITY CONTROL

A. With room light fixtures illuminated, measure amount of illumination on face of each exit sign using handheld light meter.

B. Ensure that each location has minimum of 5 foot-candles of illumination.

3.3 EXIT SIGN SCHEDULE

SIGN DESIGNATION	SIGN TYPE	MOUNTING TYPE	MOUNTING HEIGHT
ES-1	Double sided	Projected	Ceiling or Wall
ES-2	Single sided	Projected	Ceiling or Wall
ES-3	Single sided	Wall	Over door or Floor level

END OF SECTION

SECTION 32 13 13
CONCRETE PAVING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide Portland cement concrete paving .

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Section 321600 - Concrete Curbs, Gutters and Sidewalks

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are trained and experienced in the necessary crafts and who are familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Do not commence placement of concrete until mix designs have been reviewed, and until copies of the final mix designs are at the job site and the batch plant.

C. Provide access for, and cooperate with, the inspector and testing laboratory described in Section 014000 – Quality Requirements.

1.4 REGULATORY REQUIREMENTS

A. Portland cement concrete paving shall be stable, firm, and slip resistant and shall comply with CBC Sections 11B-302 and 11B-403.

PART 2 - PRODUCTS

2.1 FORMS

A. Forms shall be made of wood or metal or other material capable of supporting mechanical concrete placing equipment without settling vertically, bowing inward or outward, or crushing. Forms shall have sufficient rigidity to maintain the lines and grades shown on the Drawings within a vertical tolerance of 0.05 feet and an alignment tolerance of 1 inch at any point. Forms shall be clean and free of dirt, rust, and hardened concrete.

B. Earth forms are not permitted for paving.

2.2 REINFORCEMENT

A. Comply with the following as minimums:

1. Bars: ASTM A615, grade 60,
2. Welded wire fabric: ASTM A185.
3. Bending: ACI318.

B. Fabricate reinforcement to the required shapes and dimensions, with fabrication tolerances complying with the CRSI "Manual of Standard Practices". Do not use reinforcement having any of the following defects:
   1. Bar lengths, depths, or bends exceeding the specified fabricating tolerances;
   2. Bends or kinks not indicated on the Drawings or required for the work;
   3. Bars with cross-section reduced due to excessive rust or other causes.

C. Joint reinforcement:
   1. Dowel bars shall be plain bars.
   2. Tiebars shall be deformed bars.
   3. Dowel bars and tiebars shall be of sizes indicated in the Project Drawings.

2.3 CONCRETE

A. Comply with the following as minimums:
   1. Portland cement: ASTM C150, type I or II, low alkali.
   2. Aggregate, general:
      a. ASTM C30, uniformly graded and clean;
   3. Aggregate, coarse: Crushed rock or washed gravel with maximum size between ¾" and 1-1/2", and with minimum size number 4.
   4. Aggregate, fine: Natural washed sand of hard and durable particles varying from fine to particle passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen.
   5. Water: Clean and potable.
   6. 4" Max Slump
   7. W/CM Ratio of equal or less than 0.52
   8. Air-Entraining Ad Mixture shall meet ASTM C260, and shall be between 4 and 8 percent.

B. Use only such additives as are recommended in the mix design

2.4 MEMBRANE-FORMING CURING COMPOUNDS

A. Comply with ASTM C 309, Type 2, Class A.

2.5 ISOLATION JOINT MATERIAL

B. Comply with ASTM D 1751 or ASTM D 1752.

2.6 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper elimination of the work. Do not proceed until satisfactory conditions are corrected.

3.2 FINAL PREPARATION OF SUBGRADES

A. After preparation of subgrade as specified in Section 321214 - Subgrade and Roadbed, thoroughly scarify and sprinkle the entire area to be paved, and then compact to a smooth, hard, even surface of 95% compaction to receive the aggregates.

3.3 PLACEMENT OF BASE COURSE

A. Base:
   1. Spread the specified coarse aggregate to a thickness providing the compacted thickness shown on the Drawings or 4 inch thick if not shown.
   2. Compact to 95%.
B. Thickness Tolerance: Provide the compacted thickness within a tolerance of minus 0.0” to plus 0.5”.
C. Smoothness tolerance: Provide the lines and grades shown on the Drawings within a tolerance of 0.05 feet vertically and 1 inch in alignment at any point.
D. Correct deviations by removing materials, replacing with new materials, and reworking or recompacting.
E. Use only the amount of moisture needed to achieve the specified compaction.

3.4 INSTALLATION

A. Upon completion of base course and formwork, install reinforcement.
   1. Clean reinforcement to remove loose rust and mill scale, earth, and other materials that reduce bond or destroy bond with concrete.
   2. Position, support, and secure reinforcement against displacement by formwork, construction, and concrete placement operations.
   3. Place reinforcement to obtain the required coverages for concrete protection.

B. Transmit mix the concrete in accordance with provisions of ASTM C94.
   1. With each load, provide ticket certifying to the materials and quantities and to compliance with the mix design.
   2. On the transit-mix ticket, state the time water was first added to the mix.
   3. At the batch plant, withhold 2-1/2 gal of water per cu yd of concrete.
   4. Upon arrival at the job site, and as directed by the testing laboratory inspector, add all or part of the withheld water before the concrete is discharged from the mixer.
   5. Mix not less than five minutes after the withheld water has been added, and not less than one minute of that time immediately prior to discharge of the batch.
   6. Provide 15 minutes total mixing time per batch after first addition of water.

C. Do not use concrete that has stood over 30 minutes after leaving the mixer, or concrete that is not placed within 60 minutes after water is introduced into the mix.

D. Conveying:
   1. Place concrete in accordance with the following and pertinent recommendations contained in ACI 304.
   2. Deposit concrete continuously in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause formation of seams or places of weakness within the section.
   3. If a section cannot be placed continuously, provide construction joints as specified herein.
   4. Perform concrete placing at such a rate that concrete which is being integrated with fresh concrete is still plastic.
   5. Deposit concrete as nearly as practicable in its final location so as to avoid segregation due to rehandling and flowing.
   6. Do not subject concrete to any procedure which will cause segregation.
   7. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or has been contaminated to foreign materials.
   8. Remove any rejected concrete from the site.

E. Deposit and consolidate concrete in a continuous operation within the limits of construction joints until the placing of a panel or section is completed.
   1. Bring surfaces to the correct level with a straightedge, and then strike off.
   2. Use bullfloats or darbies to smooth the surface. Do not disturb the surfaces prior to start of finishing operations.

F. Finishing:
   1. Begin floating when the water sheen has disappeared and when the surface has stiffened sufficiently to permit the operation.
   2. During or after the first floating, check the planeness of surface with a ten foot straightedge applied at not less than two different angles.
   3. Cut down high spots and fill low spots, and produce a surface level within ¼" in two feet as determined by a two foot straightedge placed anywhere on the surface in any direction.
   4. Re-float the surface immediately to a uniform sandy texture.
   5. While the surface is still plastic, provide a textured finish by drawing a fiber bristle broom uniformly over the surface.
      a. Unless otherwise directed by the Architect, provide the texturing in one direction only.
      b. Provide "light", "medium", or "coarse" texturing as directed by the Architect.

3.5 JOINTING

A. Construct joints at locations, depths, and with dimensions indicated on the Project Drawings.

B. The Contractor shall submit drawings describing jointing requirements:
   1. Indicate locations of all contraction joints, construction joins, and isolation joints. Locate joints at 12 feet on-center.
   2. The larger dimension of any panel shall not exceed 125 percent of the smaller dimension.
   3. The minimum angle between any two intersecting joints shall be 80 degrees.

4. Joints shall intersect pavement free edges at a 90 degree angle and shall extend straight for a minimum of 1.5 feet from the pavement edge
5. Align joints of adjacent panes. Align joints in attached curbs with joints in pavement.
6. Describe joint depths, widths, and keyway dimensions.
7. Use isolation joints only where pavement abuts buildings, foundations, manholes, and other fixed objects.

C. Construct contraction joints by one of the following methods:
1. Insert plastic strips vertically into the fresh concrete. Depress strips into pavement until flush with surface.
2. Saw-cut concrete after concrete has hardened sufficiently to prevent aggregate being dislodged and soon enough to control pavement cracking. If contraction joint sawing causes a crack, discontinue sawing that contraction joint and continue sawing other contraction joints.

D. Isolation joints:
1. Extend isolation joints through the full depth of the pavement. Fill the entire isolation joint with isolation joint material.
2. Do not permit reinforcement to extend continuously through any expansion joint.
3. Locate isolation joints at all beginning and ending of curves, filled to full depth with expansion joint material.
4. In curbs, locate ½" thick joint at the beginning and end of curves, and at a maximum of 40' centers elsewhere unless otherwise shown on the plans.
5. In curbs and paving, hold down ½" and seal exposed joints with a joint sealer.

3.6 CURING AND PROTECTION

A. Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury.

B. Apply membrane-forming curing compound to all exposed surfaces at a maximum coverage rate of 200 sq.ft./gal. Apply curing compound immediately after final surface texture has been obtained and water sheen has disappeared. Apply curing compound to pavement edges after forms have been removed.

C. Alternate curing methods may be used when specified and approved by the engineer.

3.7 TOLERANCES

A. The entire site is subject to frequent pedestrian traffic, and is subject to the guidelines presented in the Americans with Disabilities Act. Where stated on plans or where required by the ADA, the slopes are not to exceed the maximums set forth in this act.

END OF SECTION

SECTION 32 15 40
CRUSHED STONE PAVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Section Includes: Supply and installation of stabilized crushed aggregate paving as indicated in the Contract documents, including:
   1. Base Course
   2. Crushed Aggregate Paving
   3. Organic Binder for Crushed Aggregate

1.02 RELATED SECTIONS

A. Section 02200 – Earthwork

1.03 REFERENCES

A. ASTM C136 – Sieve Analysis of Fine and Coarse Aggregates.
B. ASTM D2419 – Sand Equivalent Value of Soils and Fine Aggregates.

1.04 SUBMITTALS

A. Submit in accordance with Section 01 33 00 - Submittal Procedures:
   1. Manufacturer's product data sheet.
   2. 1 quart sample of base course.
   3. Base Course gradation indicating that the product meets specifications.
   4. Samples of stabilized crushed aggregate paving in all available colors.
   5. Stabilized crushed aggregate gradation indicating that the product meets specifications.

1.05 MOCK-UP

A. Install 20 square feet minimum of stabilized crushed aggregate paving including base course, at location approved by architect.
B. Allow architect to view mock-up before proceeding with rest of stabilized crushed aggregate paving.
C. Approved mock-up may remain as part of completed Work.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect stabilized crushed aggregate mix from contamination. Store under cover.

1.07 SEQUENCING

A. Do not install work specified in this Section prior to acceptance of earth moving.
B. Coordinate work specified in this Section with work specified in other Sections to minimize cutting of and operation of heavy equipment over installed stabilized crushed aggregate paving.

C. Do not install stabilized crushed aggregate surfacing when subbase is wet at saturated field capacity.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Base Course Materials:
   1. Comply with MTO OPSS 1010 – "Material Specification for Aggregates – Granular A, B, M and Select Subgrade Material" specification for Granular A material.
   2. Apply 4" min. base.

B. Crushed Aggregate Materials:
   1. Crushed Aggregate Material shall consist of sound, angular, durable particles.
   2. Gradation, in accordance with ASTM C136:

Sieve	Sieve Size (mm)	Percent Passing
½"	12.7	100%
3/8"	9.51	90-100%
4	4.76	50-100%
30	0.595	25-55%
100	0.149	10-25%
200	0.074	5-18%

   3. Aggregate color shall be selected from a pre-approved material pallet from Gail Materials 951-667-6106, wwwgailmaterials.net or equivalent product from local supplier.
   4. Apply 4" min. crushed aggregate materials.

C. Organic Binder:
   1. Organic-Lock™ self-healing organic binder by Gail Materials, Corona, CA; phone 951-667-6106; fax 951-667-6102; www.gailmaterials.net.
   2. Or equal

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine grading and subsoil conditions. Do not proceed until conditions are acceptable.

3.02 PREPARATION OF SUBGRADE

A. Excavate to depth required so that finish grade can be established as noted on plans.
B. Spread excavated surface as specified in Section 02200. Verify location with owner.
C. Compact subgrade to 95% Modified Proctor Density. Excavate soft and unstable areas of subgrade that cannot be compacted to standard noted, fill and compact with approved granular material.

3.03 BASE COURSE

A. Place base course material over subgrade to depths and dimensions shown on drawings in maximum (6") lifts compacted to 95% Modified Proctor Density.

3.04 PRE-BLENDED ORGANIC LOCK™ AGGREGATE SURFACING

A. For typical pathways or trails install Organic Lock™ Aggregate Paving to a compacted depth of 4 inches. For areas of vehicular use or equal install Organic Lock™ Aggregate Paving to a compacted depth of 6 inches.
B. Prewetted Organic Lock Aggregate Paving can be installed in one lift for pathway, trails or equal application. For areas of vehicular use of compacted depths of 6 inches or greater shall be installed at 3 inch compacted lifts. Estimated compacted max density is +/- 129 lbs/cu. ft. The moisture percentage in the prewetted Organic Lock Aggregate Paving will be determined by Gail Materials and will depend on selected aggregate.
C. For applications that are not prewetted by Gail Materials the Organic Lock Aggregate Paving will be delivered dry. Gail Materials will calculate the required gallons of water to be added per ton of selected material in order to reach the ideal moisture percentage for installation. In order to ensure that water is being applied correctly the Organic Lock Aggregate Paving shall be bucket blended or equal prior to spreading. Gail Materials does not recommend installing Organic Lock Aggregate Paving in place and then watering in either lifts or from the surface down.
D. Depending on weather conditions, the time required to allow the material to set-up before it can be compacted varies. Generally, this time period is between 6 and 48 hours. The top layer should be firm and not sticky. Compaction can begin when you can walk on the material without significantly sinking in and material does not feel muddy. If material sticks to the roller during compaction, allow the material to further dry. Do not allow the material to completely dry out.
E. Make 4-6 passes using a 1-10 ton double or single static drum roller, or equivalent. Do not use a vibratory compactor or vibratory setting on the compactor. The contractor shall select the proper size roller for the appropriate application.
F. After final compaction, the surface shall be true to elevation and shall not vary by more than (1/4") tested with a straight edge at any location on the surfaces. Surfaces can either be crowed at a minimum of 2% and/or installed with a cross slope of minimum 1%.
G. Compaction testing shall not be conducted until the Organic Lock Aggregate Paving has be allowed to thoroughly dry and cure.

3.05 ADJUST AND CLEAN

A. All paved areas or adjacent surface shall be brushed clean and excess materials shall be removed from the work site and disposed of in an approved dump location.

3.06 PROTECTION

A. Do not allow traffic on stabilized crushed aggregate paving after placement or until compacted stabilized crushed aggregate paving has fully cured. This time may vary depending on weather conditions.
B. Protect stabilized crushed aggregate paving surface from damage until Project completion. Repair damaged areas to match specified requirements.

3.07 MAINTENANCE & REPAIRS

A. Loose aggregate will appear on the surface over time and is a natural occurrence. If excess material becomes loose, redistribute the material over the surface, water thoroughly and re-compact with a minimum 1-ton drum roller.

B. To repair, excavate damaged area and scarify exposed stabilized crushed aggregate paving. Pre-blend replacement crushed aggregate material with Organic-Lock™ Aggregate Paving at the specified rate. Apply material to the excavated area and compact. Thoroughly water the material and allow the material to cure, but not completely dry out. Re-compact the material, ensuring that the final grade and crown are maintained. Do not use a vibratory compactor.

END OF SECTION