

CNA Lab 210
Mechanical-Technical Building

Lewis-Clark State College

Lewiston, Idaho

LC Project No. 240003

PROJECT MANUAL

Date: January 2024



504 Main Street, Suite 480

Lewiston, Idaho 83501

208.743.5902

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**LEWIS-CLARK STATE COLLEGE
REQUEST FOR INFORMAL BIDS**

Issue Date: January 30, 2024

Project: Mechanical-Technical Building – CNA Lab 210 Renovations

Project #: 240003

Owner/Agency:

Lewis-Clark State College (LC State)

Physical Plant

538 11th Ave

Lewiston, ID 83501

(208) 792-2247

Owner Contact: Redgy Erb / rgerb@lcsc.edu

Architect/Engineer:

My Architect

504 Main Street, Suite 480

Lewiston, ID 83501

(208) 743-5902

Contact: Tim Lynch/tim.lynch@myarchitectaia.com

Bid Due Date:

Bids shall be due no later than 2:00 P.M. (Pacific Time), on February 15, 2024. Bids shall be delivered, mailed or emailed to LC State Physical Plant, 538 11th Ave, Lewiston, Idaho 83501. Emailed bids shall be sent to rgerb@lcsc.edu. Bidder is responsible to ensure bids are received by the date and time listed.

Pre-Bid Walkthrough (Not mandatory):

Location: LC State Physical Plant, 538 11th Ave, Lewiston, Idaho, then adjourn to the site.

Date/Time: February 8, 2024 at 10:00 A.M. (Pacific Time)

Project Scope:

Project scope includes: Create nine (9) work stations that represent hospital/clinic conditions for CNA instruction & testing. Layout to include owner provided hospital bed & casework. Project includes new wall and door, new plumbing chase, revisions and additions to electrical system, new sinks, faucets, supply & waste and venting, new flooring, painting and new cubicle curtains.

Plans, specifications, and bid documents are on file for examination at the following locations:

Lewis-Clark State College, 538 11th Avenue, Lewiston, ID 83501. Phone: (208) 792-2247.

Electronic versions of the documents may be accessed at:

<https://www.lcsc.edu/purchasing/vendors/current-solicitations>

State Policy (By reference):

Informal bids shall be based on provisions of § 67-2805 of the Idaho Code along with § 44-1001 and 44-1002 dealing with labor preference and §72-1717 dealing with an alcohol and drug-free workplace.

SUPPLEMENTAL CONDITIONS:

1. Bids are to be submitted to the Owner/Agency by the date and time listed above and to the location listed above.
2. Informal Bid Proposal form is attached. The form shall be completed in its entirety. If a section does not apply, mark "NA" in that section. Incomplete bid forms will be deemed non-responsive.
3. Bidders are asked to not contact LC State departmental personnel with questions regarding the project. All questions should be directed to the LC State and Architect's contact listed above.
4. Bid addenda will be issued by the Architect. Bidders shall acknowledge receipt of all addenda on the informal bid proposal form.
5. Informal bid proposal form shall be signed by a signatory of the contractor having authority to bind the contractor to contracts.
6. A bid bond is not required.
7. A performance bond and labor and materials payment bond each in the amount of one hundred percent (100%) of the contract amount will be required for work accomplished on this contract prior to execution of the contract.
8. An Idaho Public Works Contractors License is required at the time of submitting a bid for this project. All contractors, specialty contractors, and sub-contractors must have an Idaho Public Works Contractors license as suitable for work to be accomplished on this contract at the time of bid.
9. Prevailing Wage / Davis-Bacon Wages are not a requirement of this project.
10. A building permit is required for this project and shall be included within the contractor's bid. Building permits are issued by the Idaho Division of Occupational & Professional Licenses (DOPL), and can be calculated on their website: <https://dbs.idaho.gov/building-fees-calculator/>
11. The DOPL plan review fee has been paid by the Owner/Agency. This cost shall not be included within the contractor's bid.
12. A Contractor's Affidavit Concerning Alcohol and Drug-Free Workplace must be submitted with the bid.
13. Idaho Naming Law is a requirement for bidding this project. All specialty contractors and sub-contractors shall be listed on the contractor's informal bid proposal form.

14. The contractor will be required to maintain Contractors Liability Insurance to include Workman's Compensation (\$1,000,000), Commercial General Liability (\$1,000,000 per occurrence and \$2,000,000 aggregate minimum) and Automobile Liability (\$1,000,000 combined single limits for bodily injury and property damage). Provide a Certificate of Insurance prior to bid award.
15. The Owner/Agency will review all submitted bids for conformance with the bidding documents, and shall award the contract for construction to the low apparent bidder. The Owner/Agency will initiate a Professional Services Agreement with the low bidder as the form of contract.
16. Contract time: Bidder agrees to commence work on a date specified in writing by the Owner/Agency as the Notice to Proceed, and to substantially complete the work within **150 consecutive calendar days** thereafter.
17. All work is to be Substantially Complete by the contractual completion date. Bidder further agrees to pay as liquidated damages, the sum of **\$500 (five hundred dollars)** for each consecutive calendar day after the established substantial completion date or adjusted date as established by change order.

INFORMAL BID PROPOSAL FORM

Informal Bid Proposal for:

Project: Mechanical-Technical Building – CNA Lab 210 Renovations

Project #: 240003

Lewis-Clark State College

Physical Plant

538 11th Avenue

Lewiston, ID 83501

Sealed bids to be clearly marked "BID FOR MECHANICAL-TECHNICAL BUILDING – CNA LAB 210 RENOVATIONS".

The undersigned proposes to do the above work in accordance with the request for informal bids and all drawings and specifications attached thereto.

The Bidder agrees to commence work upon receipt of a contract and Notice to Proceed, and to complete the work within the calendar days indicated in the Contract Documents.

Bidder acknowledges receipt of Addenda No _____ through _____.

BASE PROPOSAL: Bidder agrees to perform all of the base proposal Work described in the specifications and shown on the plans for the sum of:

_____ Dollars (\$_____)

(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

NO ALTERNATES LISTED

Heating, Ventilating & Air Conditioning (HVAC)

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho HVAC Contractors License No. _____

Electrical

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho HVAC Contractors License No. _____

Plumbing

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho HVAC Contractors License No. _____

FAILURE TO NAME A PROPERLY LICENSED SUBCONTRACTOR IN EACH OF THE ABOVE CATEGORIES WILL RENDER THE BID NON-RESPONSIVE AND VOID.

Should the listing of subcontractors change due to selection of alternates or other similar circumstances, attach explanation.

Dated at _____ this _____ day of _____, 2024

Respectfully Submitted,

By: _____ (Company)

(Street or PO Address)

(City, State, and Zip Code)

(Signature)

(Title)

(Telephone Number and Email)

END OF BID FORM

**CONTRACTOR'S AFFIDAVIT
CONCERNING ALCOHOL AND DRUG-FREE WORKPLACE**

STATE OF _____

COUNTY OF _____

Pursuant to the Idaho Code, §72-1717, I, the undersigned, being duly sworn, depose and certify that _____ is in compliance with the provisions of Idaho Code title 72, chapter 17; that _____ provides a drug-free workplace program that complies with the provisions of Idaho Code, title 72, chapter 17 and will maintain such program throughout the life of a state construction contract and that _____ shall subcontract work only to subcontractors meeting the requirements of Idaho Code, §72-1717(1)(a).

Name of Contractor

Address

City and State

By: _____
(Signature)

Subscribed and sworn to before me this _____ day of _____, _____.

Commission expires:

NOTARY PUBLIC, residing at

FAILURE TO EXECUTE THIS AFFIDAVIT AND SUBMIT IT ALONG WITH YOUR BID SHALL MAKE YOUR BID NON-RESPONSIVE

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work by Owner.
5. Work under separate contracts.
6. Future work.
7. Owner-furnished products.
8. Contractor-furnished, Owner-installed products.
9. Access to site.
10. Coordination with occupants.
11. Work restrictions.
12. Specification and drawing conventions.
13. Miscellaneous provisions.
14. General Security Requirements
15. Permits

- B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

- A. Project Identification: 240003 – Mechanical Technical Building – CNA Lab 210 Renovations.
- B. Project Location: Mechanical Technical Building, 515 11th Avenue, Lewiston, Idaho 83501.
- C. Owner/Agency: Lewis-Clark State College
 - a. Owner's Representative: Redgy Erb / rgerb@lcsc.edu (208) 792-2247

- D. Architect (Design Professional): My Architect/ Tim Lynch/
tim.lynych@myarchitectaia.com / (208) 743-5902
- E. Architect's (Design Professional's) Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:
 - a. ELECTRICAL: KCS LLC, Dave Kimbrel, dave@kcsllc.org, 208-874-3357
 - b. PLUMBING: Covenant Engineering, Rob Sawyer
rob.sawyer@covenantengineering.net, 208-792-1904

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Create nine (9) work stations that represent hospital/clinic conditions for CNA instruction & testing. Layout to include owner provided hospital bed & casework. Project includes new wall and door, new plumbing chase, revisions and additions to electrical system, new sinks, faucets, supply & waste and venting, new flooring, painting and new cubicle curtains.
- B. Type of Contract:
 - 1. Project will be constructed under a single prime contract per the Lewis-Clark State College Professional Services Agreement between Owner and Contractor.

1.5 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.
- B. Preceding Work: Owner will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before work under this Contract begins.
 - 1. Salvage existing beds, night stands and bed tables for relocation.
- C. Concurrent Work: Owner will perform the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
 - 1. None.
- D. Subsequent Work: Owner will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract.

1. None.

- E. Items noted NIC (Not in Contract), will be furnished and installed by the Owner/Agency.

1.6 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project, and by use of facility by building tenants in existing tenant improvement Projects.
- B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Limits: Confine construction operations project areas.
 2. Driveways, Walkways and Entrances: Keep driveways loading areas, etc. and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - c. Contractor parking shall be limited to those areas indicated on the Contract Document and as designed by the Owner.
 - d. Maintain clear access to project at all times for firefighting equipment. Maintain exit ways from existing building required by authorities having jurisdiction.
 - e. Signs: Provide signs adequate to direct visitors.
 - 1) Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Any damage to the building, due to negligence on behalf of the contractor to not maintain a weather-tight condition, shall be the responsibility of contractors and they shall bear the burden for correction and/or repairs for any damage. Repair damage caused by construction operations.
- D. Security: The contractor shall maintain security of the building's roof areas and any staging areas throughout the project.
- E. Behavior and Dress: The Contractor and all Contractors representatives, to include subcontractors, consultants, vendors or other parties hired by the Contractor will maintain professional behavior and wear appropriate attire that always identifies their company while on the job site.

1.7 PROTECTION OF BUILDING, CONTENTS, AND GROUNDS.

- A. Construction Site Lay-down and Storage: LC State will identify an area for a contractor staging/laydown area. It will be the contractor's responsibility to adequately secure the staging/laydown area with temporary fencing, gates, and locks as required.
- B. Verify with Agency any specific requirements.

1.8 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's 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 24 hours' notice to Owner of activities that will affect Owner's operations.

1.9 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Weekend Hours: Coordinate with LC State point of contact as needed.
- D. Early Morning or Late Evening Hours: Coordinate with LC State point of contact as needed.
- E. Hours for Utility Shutdowns: Coordinate with LC State point of contact as needed.
- F. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than 7 days in advance of proposed utility interruptions.

2. Obtain Owner's written permission before proceeding with utility interruptions.
- G. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify not less than 7 days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- H. Hazardous Materials: Notify the Design Professional and Owner immediately upon discovery of existing hazardous materials.
- I. Nonsmoking Building: Smoking is not permitted within the building or 25 of entrances, operable windows, or outdoor-air intakes.
- J. Controlled Substances: Use of tobacco products and other controlled substances is not permitted per Section 72-1717, Idaho Code.
- K. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- L. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
- M. Maintain list of approved screened personnel with Owner's representative.
- N. Contractor Parking: Agency will provide parking passes for the duration of the project. Quantity to be determined at the pre-construction meeting.
- O. On Owner/Tenant occupied projects, maintain cleanliness in areas adjacent to and surrounding the construction area to the satisfaction of the Owner at all times.
- P. On Owner/Tenant occupied projects, ensure deliveries and contractor work access are in accordance with previous agreement with Owner and/or as indicated in the Contract Documents.

1.10 PERMITS

- A. Furnish all necessary permits for construction of the Work.

1.11 WASTE DISPOSAL

- A. The contractor is responsible for any and all demolition and/or removal as necessary and required to fulfill the requirements of the Contract Documents.

1.12 TESTING AND INSPECTION

- A. Notify Owner/Engineer at least 24 hours prior to commencement of Work requiring special inspection.

1.13 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard or scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit one electronic copy 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. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions 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 substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within ten (10) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

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

1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 (fifteen) days prior to time required for preparation and review of related submittals.
1. 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:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. 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.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 15 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
1. 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:
 - a. 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.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, through email. ASI may be completed on Architect's form and attached to email.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will 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. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 (ten) days, when not otherwise specified, 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.

- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim 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 Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 7. Work Change Proposal Request Form: Use form acceptable to Architect.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, the Architect or Owner will complete the Owner's Change Order Form and attach the Proposal Request and back-up. The Architect will then forward this documentation to the Owner's Project Manager who will create a Change Order for approval of the Owner and Contractor. Note approval is determined after Change Order is fully approved by all relevant parties.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. 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 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES (SOV)

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
- B. Format and Content: Use 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. Submit the schedule of values through email seven days after contract is approved.
- 2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts where needed.
- 3. Provide a separate line item in the SOV 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.
- 4. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
- 5. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
- 6. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling 5% percent of the Contract Sum and subcontract amount.
- 7. Review and approval by the Architect and Owner (LCSC Representative) is required prior to the first payment application.

1.3 PAYMENT APPLICATIONS

- A. Each Pay Application or Invoice shall be submitted via email where they will be reviewed and approved by the Architect and then Owner. The Schedule of Values must be included and attached with the Invoice.

- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Payment Application is the period indicated in the Agreement.
- C. Payment Application Times: Create Pay Applications by the last of the month and electronically submit for approval. The period covered by each Payment Application is one month, ending on the last day of the month.
- D. Initial Payment Application: Administrative actions and submittals that must precede or coincide with submittal of first Payment Application include the following:
 - 1. List of subcontractors.
 - 2. Contractor's construction schedule (preliminary if not final)..
 - 3. Submittal schedule (preliminary if not final).
 - 4. Copies of building permits.
 - 5. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 6. Initial progress report.
 - 7. Data needed to acquire Owner's insurance
- E. Payment Application at Substantial Completion: After Architect issues the Certificate of Substantial Completion, upload a Payment Application showing 100 percent completion for portion of the Work claimed as substantially complete. Retainage will still be held by the Owner.
- F. Final Payment Application: After completing Project closeout requirements, submit final Payment Application with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. Evidence of completion of Project closeout requirements per Conditions Precedent to Final Payment Form.
 - 2. Marked up As-Built Drawings and Specifications.
 - 3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 - 4. Contractor's Affidavit of Payment of Debts and Claims Form. AIA Document G706.
 - 5. Consent of Surety to Final Payment. AIA Document G707.
 - 6. Release of Claims form, Exhibit H. Evidence that claims have been settled.
 - 7. Confirmation of all required, product warranties, operating manuals, instruction manuals and other as-built documents, drawings and items customarily required of the Contractor.
 - 8. Public Works Contract Tax Release from the Idaho Tax Commission.
 - 9. Final liquidated damages settlement statement.
 - 10. Authority Having Jurisdiction/Division of Building Safety (AHJ/DBS) inspection approval/occupancy permit.
 - 11. Any and all other items required by the Owner (LCSC) under the applicable contract requirements.

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Design Professional, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Key Personnel Names: Within seven (7) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.

- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled 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. Processing of submittals.
 - 5. Progress meetings.
 - 6. Pre-installation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

- c. Indicate functional and spatial relationships of components of Design Professional, structural, civil, mechanical, and electrical systems.
- d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
- e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
- f. Indicate required installation sequences.
- g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Design Professional indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

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

1. Floor Plans and Reflected Ceiling Plans: Show Design Professional and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire-Protection System: Show the following:

- a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Design Professional will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Design Professional determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Design Professional will so inform Contractor, who shall make changes as directed and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."
11. Review: Design Professional will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare an RFI and email to the Architect.
 1. Design Professional will approve RFIs with any comments through email.
 2. Design Professional shall notify LCSC of the Design Professional's Representative who will receive and respond to RFIs.
 3. Contractor to email RFIs in a prompt manner so as to avoid delays in the work or work of subcontractors.
 4. Contractor and Design Professional can copy any Team members the question and/or response within email.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Specification Section number and title and related paragraphs, as appropriate.
 2. Drawing number and detail references, as appropriate.
 3. Field dimensions and conditions, as appropriate.
 4. Contractor's suggested resolution.
 5. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 6. Attachments: Attach sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. Design Professional's Action: Design Professional will review each RFI, determine action required, and respond. Allow seven (7) working days for Design Professional's response for each RFI. RFIs received by Design Professional after 1:00 p.m. will be considered as received the following working day.
 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.

- c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Design Professional's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
2. Design Professional's action may include a request for additional information, in which case Design Professional's time for response will date from time of receipt by Design Professional of additional information.
3. Design Professional's action on RFIs that may result in a change to the Contract Time or the Contract Sum in which case the Contractor may submit a Proposal Request to the Design Professional.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Design Professional in writing within seven (7) days of receipt of the RFI response.
- D. On receipt of Design Professional's action, review response and notify Design Professional within seven (7) days if Contractor disagrees with response.

1.8 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. PDF Document Preparation: Where PDFs are required to be submitted to Design Professional, prepare as follows:
 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.9 PROJECT MEETINGS

- A. General: The Design Professional will schedule and conduct meetings at the Project site unless otherwise indicated. Frequency, day and time to be determined.
- B. Preconstruction Conference: The Owner will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Design Professional.
 1. Attendees: Authorized representatives of Owner, Contractor and its superintendent, and major subcontractors shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Owner's standard preconstruction agenda will be used.
 3. Minutes: The Design Professional will be responsible for the meeting minutes and will record and distribute via email.

- C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity when required by other sections and when required for 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 Design Professional, Owner of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.
 - i. Possible conflicts.
 - j. Compatibility requirements.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - 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 other parties requiring information.
 - 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. Construction Progress Meetings: The Contractor will conduct construction progress meetings at regular intervals.
 - 1. Coordinate dates of meetings with preparation of payment requests.

2. Attendees: In addition to representatives of Owner, Agency and Design Professional, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site use.
 - 9) Temporary facilities and controls.
 - 10) Progress cleaning.
 - 11) Quality and work standards.
 - 12) Status of correction of deficient items.
 - 13) Field observations.
 - 14) Status of RFIs.
 - 15) Status of Proposal Requests.
 - 16) Pending changes.
 - 17) Status of Change Orders.
 - 18) As-Built Updates.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
4. Minutes: Contractor is responsible for conducting any construction progress meeting and will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Contractor shall 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.

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Design Professional's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Design Professional's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Design Professional and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Design Professional.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Submittal purpose and description.

10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 11. Drawing number and detail references, as appropriate.
 12. Indication of full or partial submittal.
 13. Location(s) where product is to be installed, as appropriate.
 14. Other necessary identification.
 15. Remarks.
 16. Signature of transmitter.
- B. Options: Identify options requiring selection by Design Professional.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Design Professional on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Submittals:
1. Email Submittals to Architect.
 2. Prepare submittals as PDF files.

1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Prepare submittals in PDF form and email to Architect.
 2. Samples: Prepare submittals and deliver to Design Professional.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Design Professional'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. Initial Review: Allow seven (7) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Design Professional will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Resubmittal Review: Allow seven (7) days for review of each resubmittal.

- D. Resubmittals: Make resubmittals in same form as initial submittal.
- E. 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.
- F. Use for Construction: Retain complete copies of submittals on Project site, (as needed). Use only final action submittals that are marked with approval notation from Design Professional's action stamp.

1.6 SUBMITTAL REQUIREMENTS

- A. 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 published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. 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. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.

- e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Transmittal: Email transmittal to Architect. Include digital image file illustrating Sample characteristics, and identification information for record.
 4. Prepare submittals in PDF form and email to Architect.
 5. Paper Transmittal: Include paper transmittal including complete submittal information indicated for samples delivered to the Design Professional.
 6. 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.
 7. 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 two (2) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Design Professional will return submittal with options selected.
 8. 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 one (1) set of Samples.
 - 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 one (1) set of paired units that show approximate limits of variations.

- D. Product Schedule: 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. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Design Professionals and owners, and other information specified.
 2. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
 3. Certificates:
 - a. Certificates and Certifications Submittals: Submit a 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. Provide a notarized signature where indicated.
 - b. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 - c. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 - d. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 - e. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 - f. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

- E. Test and Research Reports:
 1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
 2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit 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.
5. Product Test Reports: Submit written reports indicating that 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.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.7 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Design Professional.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, shall be 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.
 2. Confirm plan review requirements with Division of Building Safety.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: 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 emailing to Architect.

- B. Contractor's Approval: Indicate Contractor's approval for each submittal. Include 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.
 - 1. Design Professional will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 DESIGN PROFESSIONAL'S REVIEW

- A. Action Submittals: Design Professional will review each submittal, indicate corrections or revisions required, and return it-within to the Contractor.
 - 1. Design Professional will indicate the appropriate action.
 - a. Actions taken by indication on Project software website have the following meanings:
 - 1) Approved, No Exceptions Taken, Pending, Overdue, Complete, or Rejected.
- B. Informational Submittals: Design Professional will review each submittal and will not return it, or will return it if it does not comply with requirements. Design Professional will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Design Professional.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be rejected for resubmittal without review.
- E. Submittals not required by the Contract Documents will be returned by Design Professional without action.

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -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 -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Design Professional, or Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

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 the Design Professional.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified

installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

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

1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Design Professional.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Design Professional.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.6 DOCUMENTS

- A. 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.

1.7 QUALITY ASSURANCE

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

- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. **Specialists:** Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. **Testing Agency Qualifications:** An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:

- a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies using installers who will perform same tasks for Project.
 - e. When testing is complete, remove test specimens, and assemblies; do not reuse products on Project unless authorized by the Design Professional.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Design Professional with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.8 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least **seventy-two (72)** hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- C. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Owner, Design Professional, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Owner, Design Professional, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service to Owner, Design Professional, and Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 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.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 - 1. Distribution: Distribute schedule to Owner, Design Professional, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: 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 revisions as they occur. Provide access to test and inspection log for Owner and Design Professional's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to Design Professional, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Owner will pay sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.
- E. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- F. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

- A. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Temporary Use of LC State Amenities: LC State will allow contractor use of restrooms, mop sinks and other building amenities if the contractor maintains such facilities in a clean and sanitary manner. Abuse of LC State sanitary facilities will be cause for discontinuing of use by the contractor.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Design Professional, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.

2.2 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, 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 qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

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 and clean HVAC system as required in Section 017700 "Closeout Procedures."
- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See individual Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 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.

3.3 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. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241 if needed.
2. Maintain support facilities until Design Professional schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. 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.

C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

D. 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 or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

E. Project Staging/Laydown Area: LC State will identify an area for a contractor staging/laydown area. It will be the contractor's responsibility to adequately secure the staging/laydown area with temporary fencing, gates and locks as required.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.

2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 3. Maintain and touch up signs so they are legible at all times.
- G. 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 progress cleaning requirements in Section 017300 "Execution."
- H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- I. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
1. Do not load elevators beyond their rated weight capacity.
 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- J. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

- C. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- F. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
 - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 - 2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 - 3. Provide walk-off mats at each entrance through temporary partition.
- G. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 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.

3.6 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
 - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
 - 3. Indicate methods to be used to avoid trapping water in finished work.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

3.7 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. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. 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 comparable products.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

- A. Products: Items obtained 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.
 - 3. Comparable Product: Product that is demonstrated and approved by Design Professional through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within seven (7) days of receipt of a comparable product request. Design Professional will notify Contractor of approval or rejection of proposed comparable product request within seven (7) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Form of Design Professional's Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Design Professional does not issue a decision on use of a comparable product request within time allocated.

- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

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

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. 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 determine compliance with the Contract Documents and to determine 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. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.6 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: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for 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 indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, 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 meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Design Professional will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: ..."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: ..."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: ..."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.
 - a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: ..."
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: ..."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: ..."
7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or

indicated product or a comparable 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 requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require "match Design Professional's sample," provide a product that complies with requirements and matches Design Professional's sample. Design Professional's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Design Professional from manufacturer's full range" or similar phrase, select a product that complies with requirements. Design Professional will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Design Professional will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional may return requests without action, except to record noncompliance with these requirements:
1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 2. Evidence that proposed product provides specified warranty.
 3. List of similar installations for completed projects with project names and addresses and names and addresses of Design Professionals and owners, if requested.
 4. Samples, if requested.

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
1. Construction layout.
 2. Installation of the Work.
 3. Cutting and patching.
 4. Progress cleaning.
 5. Starting and adjusting.
 6. Protection of installed construction.
- B. Related Requirements:
1. Section 011000 "Summary" for limits on use of Project site.
 2. Section 017700 "Closeout Procedures" for replacing defective work, and final cleaning.

1.2 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Design Professional of locations and details of cutting and await directions from Design Professional before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.

- g. Noise- and vibration-control elements and systems.
- 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- 6. Dates: Indicate on the contractor's schedule when cutting and patching will be performed.
- B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 EXAMINATION

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

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. 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 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 caused by differing field conditions outside the control of Contractor, submit a request for information to Design Professional according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to any existing property survey and existing benchmarks. If discrepancies are discovered, notify Design Professional promptly.
- B. General: Lay out the Work using accepted practices.

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

3.4 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 in occupied spaces and in unoccupied spaces, or as required by authorities having jurisdiction.
- 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. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Design Professional.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Remove and replace damaged, defective, or non-conforming Work.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. 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.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."

- F. 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.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable 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.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 AGENCY-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's and Agency construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner and Agency construction personnel.
 1. Construction Schedule: Inform Owner/Agency of Contractor's preferred construction schedule for Owner/Agency portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner/Agency in a timely manner if changes to schedule are required due to differences in actual construction progress.
 2. Pre-installation Conferences: Include Owner/Agency construction personnel at pre-installation conferences covering portions of the Work that are to receive Owner/Agency work. Attend pre-installation conferences conducted by Owner/Agency construction personnel if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials

specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- 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 ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- B. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 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. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Drawings and general provisions of the Contract, including other Division 01 Specification Sections, apply to this Section.
- B. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- C. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 2. Section 017839 "Project As-Built Documents" for submitting As-Built Drawings, As-Built Specifications, and As-Built Product Data.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at final completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of seven (7) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including as-built documents which indicate any field revisions made to the construction documents, operation and maintenance manuals, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents. (Verify if hard and/or electronic copies are required from the Agency.)
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Design Professional. Label with manufacturer's name and model number.
 5. Submit sustainable design submittals not previously submitted.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 7. A final report of Special Inspections to be attached to the Substantial Completion. If no Special Inspections are required, Design Professional can initial as such on the Substantial Completion form.
 8. Submit O&M Manuals for compliance with the contract documents. (Verify if hard and/or electronic copies are required from the Agency)
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of seven (7) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Advise Owner of changeover in utility services.
 6. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 7. Terminate and remove temporary facilities from Project site, along with construction tools, and similar elements.
 8. Complete final cleaning requirements.
 9. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Design Professional will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Design Professional, 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.

1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
 1. Submit final Application for Payment according to Section 012900 "Payment Procedures" via email.
 2. Certified List of Incomplete Items: Submit certified copy of Design Professional's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Design Professional. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Design Professional will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will approve/initial punch list after inspection or will notify Contractor of construction that must be completed or corrected before final documents will be signed.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order
 2. Submit list of incomplete items in the following format:
 - a. PDF electronic file. Design Professional will return annotated file.

1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Design Professional for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within ten (10) days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

- D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit on digital media acceptable to Design Professional.
- E. Warranties in Paper Form (contact Design Professional to see if this can be included only in the Operation & Maintenance Manual):
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated 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; clean according to manufacturer's recommendations 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. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
 - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations, as well as any damage to surrounding areas. Repair includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition before requesting inspection for determination of Substantial Completion.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
- B. Repair, or remove and replace, defective construction.

END OF SECTION 017700

CONSENT OF SURETY TO FINAL PAYMENT

OWNER
ARCHITECT
CONTRACTOR
SURETY
OTHER

AIA Document G707

(Instructions on reverse side)

TO OWNER:
(Name and address)

ARCHITECT'S PROJECT NO.:

CONTRACT FOR:

PROJECT:
(Name and address)

CONTRACT DATED:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

on bond of
(Insert name and address of Contractor)

, SURETY,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to
(Insert name and address of Owner)

, CONTRACTOR,

as set forth in said Surety's bond.

, OWNER,

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)



CAUTION: You should sign an original AIA document that has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced. See Instruction Sheet for Limited License for Reproduction of this document.





AIA[®] Document G706[™] – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER

CONTRACT FOR:

ARCHITECT

CONTRACTOR

TO OWNER: *(Name and address)*

CONTRACT DATED:

SURETY

OTHER

STATE OF:

COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

CONTRACTOR: *(Name and address)*

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose.

Indicate Attachment Yes No

BY:

The following supporting documents should be attached hereto if required by the Owner:

(Signature of authorized representative)

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

Conditions Precedent to Final Payment

Date: _____
LCSC Project No. _____
Project Title: _____
Location: _____

Send to:
Lewis Clark State College (LC State)
Physical Plant
538 11th Ave.
Lewiston, Idaho 83501

Copy to:
Design Professional
My Architect
504 Main Street, Suite 480
Lewiston, Idaho 83501

Contractor's Responsibilities:

As a condition precedent to final payment, the Contractor must furnish the owner, in the form and manner required by Owner, to be submitted to the Design Professional for approval, the following:

- Release of Claims form has been provided to the Architect;
- Contractor's Affidavit of Payment of Debts and Claims Form has been provided to the Architect (AIA G706);
- Consent of Surety to Final Payment has been provided to the Architect (AIA G707);
- Confirmation of all required product warranties, operating manuals, instruction manuals and other record documents, drawings and items customarily required of the Contractor has been provided to the Architect.
- Tax Release from the Idaho Tax Commission has been provided to the Architect;
- Division of Building Safety Letter of Completion/Final Inspection has been provided to the Architect (as required);

Contractor's Signature

Date

Design Professional's Approval for Payment:

- All Warranties, Guarantees, etc. have been received, approved and have been provided to the Architect.
- Contractor's As-Built Drawings, have been received, reviewed and approved.
- Final punch list with AE's verification that all items have been completed.
- Record Drawings have been completed by AE. *Record Drawings are a requirement for the AE's final payment; not the Contractor's.*

To the best of my knowledge, information, and belief, and on the basis of my observations and inspections, I certify the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the required documentation has been received. The entire balance, as shown on the attached Final Request for Payment, is due and payable.

Design Professional's Signature

Date

Idaho State Tax Commission REQUEST FOR TAX RELEASE

Date: _____

PART I -- AWARDING AGENCY INFORMATION:

Name of agency	Mailing address	City, state, and ZIP Code
Contact name	Phone number	Email address

PART II -- CONTRACTOR INFORMATION:

Name of contractor	Mailing address	City, state, and ZIP Code
Federal EIN	Contact name	Phone number
		Email address

PART III -- CONSTRUCTION/CONTRACT MANAGER INFORMATION (if applicable):

Name of business	Mailing address	City, state, and ZIP Code
Federal EIN	Contact name	Phone number
		Email address

Send a copy of the approved Tax Release to: Awarding Agency Contractor Construction Manager

NOTE: We will email all copies unless otherwise requested

PART IV -- PROJECT INFORMATION:

Name of project	Location of project
Description of project	

Project number assigned by awarding agency	Project start date	Project completion date	Final/closing contract amount (includes all change orders) \$
--	--------------------	-------------------------	--

Did any government entities supply materials which were installed by this contractor or its subs?: Yes No

If YES, list these materials and their dollar values. (Attach additional information if needed)

List Materials	List Dollar Values of Materials
	\$
	\$
	\$

Send to: Contract Desk/Sales Tax Audit
Idaho State Tax
Commission PO
Box 36
Boise ID 83722-0410

Phone: (208) 334-7618 • Fax: (208) 332-6619 • Email: contractdesk@tax.idaho.gov

NOTE: Please allow 30 days to process a Tax Release Request. You must send a complete, signed Form WH-5 Public Works Contract Report to the Idaho State Tax Commission to complete this request.

RELEASE OF CLAIMS

(TO BE COMPLETED FOR FINAL PAYMENT)

I, _____, do hereby release the Lewis Clark State College from any and all claims of any character whatsoever arising under and by virtue of contract number _____

Dated _____ as amended, except as herein stated.

Dated _____ Contractor _____

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory manuals.
 - 2. Emergency manuals.
 - 3. Systems and equipment operation manuals.
 - 4. Systems and equipment maintenance manuals.
 - 5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Design Professional will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 - 1. Submit on digital media acceptable to Design Professional (email pdf format.) Enable reviewer comments on draft submittals.
 - 2. Contact Design Professional to clarify the number of paper copies required. Supply up to 3 (three) paper copies.
- C. Final Manual Submittal: Submit each manual in final digital media format form prior to requesting inspection for Substantial Completion. Design Professional will return copy with comments.
 - 1. Correct or revise each manual to comply with Design Professional's comments. Submit copies of each corrected manual within 15 (fifteen) days of receipt of Design Professional's comments.
- D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - 2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Design Professional.

7. Names and contact information for major consultants to the Design Professional that designed the systems contained in the manuals.
 8. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.

7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.

C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.

3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.
- H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in As-Built Drawings to ensure correct illustration of completed installation.
- 1.7 PRODUCT MAINTENANCE MANUALS
- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

END OF SECTION 017823

SECTION 017839 – PROJECT AS-BUILT DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for as-built documents, including the following:
 - 1. As-Built Drawings.
 - 2. As-Built Specifications.
 - 3. As-Built Product Data.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. As-Built Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of as-built Drawings as follows:
 - a. Initial Submittal:
 - 1) Email PDF electronic files of scanned as-built prints to Architect.
 - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit one (1) paper-copy set of marked-up as-built prints.
 - 2) Email PDF electronic files of scanned as-built prints to Architect.
 - 3) Architect will review for completeness.
- B. As-Built Specifications: Submit one annotated PDF electronic file of Project's Specifications, including addenda and contract modifications as required by Architect.
- C. As-Built Product Data: Submit one annotated PDF electronic file and directories of each submittal as required by Architect.
 - 1. Where As-Built Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.3 AS-BUILT DRAWINGS

- A. As-Built Prints: Maintain one set of marked-up paper and an electronic copy of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark as-built prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained as-built data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up as-built 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 acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference as-built prints to corresponding photographic documentation.
 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.
 - 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 and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up as-built prints.
 4. Mark as-built sets with 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 "AS-BUILT DRAWING" in a prominent location.
1. As-built Prints: Organize as-built prints into manageable sets. If required, bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.

3. As-Built Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "AS-BUILT DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.4 AS-BUILT 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 As-Built Product Data.
 5. Note related Change Orders, as-built Product Data, and as-built Drawings where applicable.
- B. Format: Submit as-built Specifications as paper copy or scanned PDF electronic file of marked-up paper copy of Specifications.

1.5 AS-BUILT PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for project as-built document purposes. Post changes and revisions to project as-built documents as they occur; do not wait until end of Project.
- B. 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 Order, record Specifications, and As-built Drawings where applicable.
- C. Format: Submit As-built Product Data as paper copy or scanned PDF electronic file of marked-up paper copy of Product Data.

1. Include as-built Product Data directory organized by Specification Section number and title, electronically linked to each item of as-built Product Data.

1.6 MAINTENANCE OF AS-BUILT DOCUMENTS

- A. Maintenance of As-Built Documents: Store as-built documents in the field office apart from the Contract Documents used for construction. Do not use project as-built documents for construction purposes. Maintain as-built documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project as-built documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017839

**SECTION 08 1213
HOLLOW METAL FRAMES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal frames for non-hollow metal doors.

1.02 RELATED REQUIREMENTS

- A. Section 08 1416 - Flush Wood Doors: Non-hollow metal door for hollow metal frames.
- B. Section 08 7100 - Door Hardware: Hardware and silencers.

1.03 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2003 (R2009).
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2017.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2018.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2018a.
- H. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2016.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- J. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- K. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- L. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2007.
- M. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
- D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store in accordance with applicable requirements and in compliance with standards and/or custom guidelines as indicated.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Fleming Door Products, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 4. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.
 - 5. Steelcraft, an Allegion brand: www.allegion.com/#sle.
 - 6. Daybar Industries Limited; www.daybar.com.
 - 7. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Door Frame Type: Provide hollow metal door frames with integral casings.
- B. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
- C. Accessibility: Comply with ICC A117.1 and ADA Standards.
- D. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830, NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

2.03 HOLLOW METAL DOOR FRAMES WITH INTEGRAL CASINGS

- A. Frame Finish: Factory primed and field finished.
- B. Type 1, Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.

2.04 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.05 ACCESSORIES

- A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

- A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Install door hardware as specified in Section 08 7100.

1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.

3.03 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

SECTION 08 1416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush wood doors; flush and flush glazed configuration; non-rated.

1.02 REFERENCE STANDARDS

- A. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014, with Errata (2018).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1; 2017, with Errata (2019).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- D. Samples: Submit two samples of door veneer, illustrating wood grain, stain color, and sheen.
- E. Specimen warranty.
- F. Warranty, executed in Owner's name.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Oregon Door: www.oregondoor.com/#sle.
 - 2. VT Industries, Inc; : www.vtindustries.com/#sle.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOORS

- A. Doors: See drawings for locations and additional requirements.
 - 1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Wood veneer facing with factory transparent finish to match existing.

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: Red oak, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), _____ .
 - 1. Vertical Edges: Same species as face veneer.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- E. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
 - 1. Transparent:
 - a. System - 1, Lacquer, Nitrocellulose.
 - b. Stain: As selected by Architect.
 - c. Sheen: Satin.

2.07 ACCESSORIES

- A. Hollow Metal Door Frames: See Section 08 1113.
- B. Glazed Openings:
 - 1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.
 - 2. Tint: Clear.
- C. Door Window Frames: Door window frames with glazing securely fastened within door opening.
 - 1. Frame Material: 18 gauge, 0.0478 inch (1.21 mm), galvanized steel.
 - 2. Metal Finish: Dark Bronze polyester powder coating.
 - 3. Glazing: 1/4 inch (6.4 mm) thick, tempered glass, in compliance with requirements of authorities having jurisdiction.
- D. Door Hardware: See Section 08 7100.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

3.05 SCHEDULE

- A. See Door and Frame Schedule on drawings_____.

END OF SECTION

**SECTION 08 7100
DOOR HARDWARE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hardware for wood doors.

1.02 RELATED REQUIREMENTS

- A. Section 08 1213 - Hollow Metal Frames.
- B. Section 08 1416 - Flush Wood Doors.

1.03 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. BHMA A156.1 - American National Standard for Butts and Hinges; 2016.
- C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; 2017.
- D. BHMA A156.7 - American National Standard for Template Hinge Dimensions; 2016.
- E. BHMA A156.16 - American National Standard for Auxiliary Hardware; 2018.
- F. BHMA A156.18 - American National Standard for Materials and Finishes; 2016.
- G. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
- B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
- C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
 - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
 - 2. Provide complete description for each door listed.
- D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- E. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- F. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
 - 1. Locksets and Cylinders: Three years, minimum.
 - 2. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

- A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
- B. Provide individual items of single type, of same model, and by same manufacturer.
- C. Provide door hardware products that comply with the following requirements:
 - 1. Applicable provisions of federal, state, and local codes.
 - 2. Accessibility: ADA Standards and ICC A117.1.

2.02 HINGES

- A. Manufacturers:
 - 1. McKinney; an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
 - 2. Hager Companies; _____: www.hagerco.com/#sle.
 - 3. Pamex, Inc; Hinges: www.pamexinc.com/#sle.
 - 4. Stanley, dormakaba Group; _____: www.stanleyhardwarefordoors.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Hinges: Comply with BHMA A156.1, Grade 1.
 - 1. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
 - a. Provide hinge width required to clear surrounding trim.
 - 2. Provide hinges on every swinging door.
 - 3. Provide five-knuckle full mortise butt hinges unless otherwise indicated.

2.03 CYLINDRICAL LOCKS

- A. Manufacturers:
 - 1. Schlage, an Allegion brand; _____: www.allegion.com/us/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
 - 1. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
 - a. Finish: To match lock or latch.
 - 2. Trim: Provide lever handle or pull trim on outside of each lock, unless otherwise indicated.

2.04 WALL STOPS

- A. Manufacturers:
 - 1. Rockwood; an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
 - 2. Hager Companies; _____: www.hagerco.com/#sle.
 - 3. Pamex, Inc; Wall Stops: www.pamexinc.com/#sle.
 - 4. Trimco; _____: www.trimcohardware.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
 - 1. Type: Bumper, concave, wall stop.

2. Material: Aluminum housing with rubber insert.

2.05 SILENCERS

- A. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
 1. Single Door: Provide three on strike jamb of frame.
 2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
 3. Material: Rubber, gray color.

2.06 FINISHES

- A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
 1. Primary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.

3.03 ADJUSTING

- A. Adjust work under provisions of Section 01 7000 - Execution and Closeout Requirements.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.04 CLEANING

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.05 PROTECTION

- A. Protect finished Work under provisions of Section 01 7000 - Execution and Closeout Requirements.
- B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal stud wall framing.
- B. Acoustic insulation.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.
- E. Textured finish system.

1.02 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).
- C. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- D. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017.
- F. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2018.
- G. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.
- H. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- I. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2019b.
- J. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2018.
- K. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2019.
- L. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- M. GA-216 - Application and Finishing of Gypsum Panel Products; 2016.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:
 - 1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.
- B. Store metal products to prevent corrosion.

PART 2 PRODUCTS

2.01 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich; : www.clarkdietrich.com/#sle.
 - 2. SCAFCO Corporation; : www.scafco.com/#sle.
 - 3. Steel Construction Systems; : www.steelconsystems.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- C. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa).
 - 1. Studs: C-shaped with knurled or embossed faces.
 - 2. Runners: U shaped, sized to match studs.

2.02 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. CertainTeed Corporation; : www.certainteed.com/#sle.
 - 2. Georgia-Pacific Gypsum; : www.gpgypsum.com/#sle.
 - 3. USG Corporation; : www.usg.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).

2.03 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3-1/2" inch (88.9 mm).
- B. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
 - 1. Corner Beads: Low profile, for 90 degree outside corners.
 - 2. L-Trim with Tear-Away Strip: Sized to fit 1/2-inch (13 mm) thick gypsum wallboard.
- C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Fiberglass Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
 - 2. Paper Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 3. Joint Compound: Drying type, vinyl-based, ready-mixed.
- D. Textured Finish Materials: Latex-based compound; plain.
- E. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch (0.84 to 2.84 mm) in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C1007/AISI S220 and manufacturer's instructions.
- B. Studs: Space studs at 16 inches on center (at 406 mm on center).
 - 1. Extend partition framing to structure in all locations.
 - 2. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

3.04 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Corner Beads: Install at external corners, using longest practical lengths.
- B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 3: Walls to receive textured wall finish.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

3.07 TEXTURE FINISH

- A. Apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions .
- B. Texture Required: match existing.

3.08 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

END OF SECTION

**SECTION 09 6500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 REFERENCE STANDARDS

- A. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004 (Reapproved 2018).
- B. ASTM F1861 - Standard Specification for Resilient Wall Base; 2016.
- C. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2011.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

1.05 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 TILE FLOORING

- A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness.
 - 1. Manufacturers:
 - a. Armstrong Flooring; Standard Execelon Imperial Texture:
www.armstrongflooring.com/#sle.
 - b. Johnsonite, a Tarkett Company; _____: www.johnsonite.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
 - 3. Size: 12 by 12 inch (305 by 305 mm).
 - 4. Thickness: 0.125 inch (3.2 mm).
 - 5. Color: To be selected by Architect from manufacturer's full range.

2.02 RESILIENT BASE

- A. Resilient Base - Type RB: ASTM F1861, Type TS rubber, vulcanized thermoset; style as scheduled.
 - 1. Manufacturers:
 - a. Flexco Corporation: www.flexcofloors.com/#sle.
 - b. Burke Flooring: www.burkeflooring.com/#sle.
 - c. Johnsonite, a Tarkett Company: www.johnsonite.com/#sle.
 - d. Roppe Corporation: www.roppe.com/#sle.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Height: 5 inches (127 mm).
 - 3. Thickness: 0.125 inch (3.2 mm).
 - 4. Finish: Satin.
 - 5. Length: Roll.
 - 6. Color: As indicated on drawings.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 - 1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

- A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- C. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- D. Prohibit traffic until filler is fully cured.
- E. Clean substrate.
- F. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
 - 1. Spread only enough adhesive to permit installation of materials before initial set.
 - 2. Fit joints and butt seams tightly.

3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 1. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 9123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, and lead items.
 - 6. Floors, unless specifically indicated.
 - 7. Brick, architectural concrete, cast stone, integrally colored plaster, and stucco.
 - 8. Glass.
 - 9. Acoustical materials, unless specifically indicated.
 - 10. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

- A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- B. SSPC-SP 13 - Surface Preparation of Concrete; 1997 (Reaffirmed 2003).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47).
 - 3. Cross-reference to specified paint system products to be used in project; include description of each system.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.
 - 2. Allow 10 days for approval process, after receipt of complete samples by Architect.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Data: Submit data including product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.

2. Extra Paint and Finish Materials: 1 gal (4 L) of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 fc (860 lux) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 1. Behr Process Corporation: www.behr.com/#sle.
 2. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 2. Supply each paint material in quantity required to complete entire project's work from a single production run.
 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- C. Colors: As indicated on drawings.
 1. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
 2. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.03 PAINT SYSTEMS - INTERIOR

- A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete masonry units, and shop primed steel.
 1. Two top coats and one coat primer.

2. Top Coat(s): High Performance Architectural Interior Latex.
 - a. Products:
 - 1) Behr Dynasty Interior Eggshell Enamel [No.2650]. (MPI #139)
 - 2) PPG Paints Prominence Interior Latex, 84-3310 Series, Eggshell. (MPI #138)
 - 3) Sherwin-Williams ProMar 200 HP Series, Eg-Shel. (MPI #139)
 - 4) Substitutions: See Section 01 6000 - Product Requirements
 3. Primer: As recommended by top coat manufacturer for specific substrate.
- B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals:
 1. Medium duty applications include door frames.
 2. Two top coats and one coat primer.
 3. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, or 141.
 - a. Products:
 - 1) PPG Paints Pure Performance Interior Latex, 9-510XI Series, Semi-Gloss. (MPI #141)
 - 2) Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, Semi-Gloss. (MPI #141)
 - 3) Substitutions: See Section 01 6000 - Product Requirements
 4. Top Coat Sheen:
 - a. Semi-Gloss: MPI gloss level 5; use this sheen at door frames.
 5. Primer: As recommended by top coat manufacturer for specific substrate.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 1. Gypsum Wallboard: 12 percent.
 2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
 2. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.
- F. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
 2. Prepare surface as recommended by top coat manufacturer.
- G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- H. Ferrous Metal:
1. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 10 2123
CUBICLE CURTAINS AND TRACK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended overhead curtain track and guides.
- B. Surface mounted overhead curtain track and guides.
- C. Cubicle curtains.

1.02 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2020.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for curtain fabric characteristics and _____.
- C. Shop Drawings: Indicate a reflected ceiling plan view of curtain track, hangers and suspension points, attachment details, schedule of curtain sizes.
- D. Samples: Submit 12 by 12 inch (300 by 300 mm) sample patch of curtain cloth with representative top, bottom, and edge hem stitch detail, heading with reinforcement and carrier attachment to curtain header.
- E. Maintenance Data: Include recommended cleaning methods and materials and stain removal methods.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Accept curtain materials on site and inspect for damage.
- B. Store curtain materials on site and deliver to Owner for installation when requested.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Cubicle Track and Curtains:
 - 1. A. R. Nelson Co: www.arnelson.com/#sle.
 - 2. Construction Specialties, Inc: www.c-sgroup.com/#sle.
 - 3. Inpro: www.inprocorp.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 TRACKS AND TRACK COMPONENTS

- A. Tracks: Extruded aluminum sections; one piece per track run.
 - 1. Profile: Channel.
 - 2. Mounting: Suspended.
 - 3. Structural Performance: Capable of supporting vertical test load of 50 lbs (23 kg) without visible deflection of track or damage to supports, safely supporting moving loads, and sufficiently rigid to resist visible deflection and without permanent set.
 - 4. Track End Stop: To fit track section.
 - 5. Suspension Rods: Tubular aluminum sections, sized to support design loads and designed to receive attachment from track and ceiling support.
 - 6. Escutcheons: Where suspension rod meets finished ceiling or structure, provide escutcheons to match rod finish.
 - 7. Finish on Exposed Surfaces: Clear anodized.

- B. Curtain Carriers: Nylon rollers, size and type compatible with track; designed to eliminate bind when curtain is pulled; fitted to curtain to prevent accidental curtain removal.
- C. Installation Accessories: Types required for specified mounting method and substrate conditions.

2.03 CURTAINS

- A. Cubicle Curtains:
 - 1. Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - 2. Material: Close weave polyester; anti-bacterial, self deodorizing, sanitized, and preshrunk.
- B. Curtain Fabrication:
 - 1. Width of curtain to be 10 percent wider than track length.
 - 2. Length of curtain to end 15 inches (380 mm) above finished floor.
 - 3. Curtain Heading: Fabric band matching curtain panel with metal grommet holes for carriers spaced 6 inches (150 mm) on center.
 - 4. Seams and Hems: Manufacturer's standard fabrication method for securely sewn and finished seams and hems.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and supports above ceiling are ready to receive work of this Section.
- B. Verify that field measurements are as indicated.

3.02 INSTALLATION

- A. Install curtain track to be secure, rigid, and true to ceiling line.
- B. Secure track to ceiling system.
- C. Install end cap and stop device.
- D. Install curtains on carriers ensuring smooth operation.

END OF SECTION

SECTION 12 3600 COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sill for top of wall furring

1.02 REFERENCE STANDARDS

- A. ISFA 3-01 - Classification and Standards for Quartz Surfacing Material; 2013.
- B. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- C. NSI (DSDM) - Dimensional Stone Design Manual, Version VIII; 2016.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for 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. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

1.04 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.

1.05 FIELD 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 absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Natural Quartz and Resin Composite Countertops: Sheet or slab of natural quartz and plastic resin over continuous substrate.
 - 1. Flat Sheet Thickness: 1 inch (25.4 mm), minimum.
 - 2. Natural Quartz and Resin Composite Sheets, Slabs and Castings: Complying with ISFA 3-01 and NEMA LD 3; orthophthalic polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard stone fabrication tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Manufacturers:
 - 1) Cambria Company LLC: www.cambriausa.com/#sle.
 - 2) Dal-Tile Corporation; ONE Quartz Surfaces: www.daltile.com/#sle.
 - 3) Wilsonart: www.wilsonart.com/#sle.
 - b. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with NSI (DSDM).
 - c. Finish on Exposed Surfaces: Polished.
 - d. Color and Pattern: As selected by Architect from manufacturer's full line.

3. Exposed Edge Treatment: Built up to minimum 1 inch (25.4 mm) thick; radiused edge.

2.02 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 1. Join lengths of tops using best method recommended by manufacturer.
 2. Fabricate to overhang fronts and ends of cabinets 1/2 inch (13 mm) except where top butts against cabinet or wall.

PART 3 EXECUTION

3.01 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. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Attach stainless steel countertops using stainless steel fasteners and clips.
- B. Attach countertops using compatible adhesive.
- C. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet (3 mm in 3 m), maximum.
- B. Offset From Wall, Countertops: 1/8 inch (3 mm) maximum; 1/16 inch (1.5 mm) minimum.
- C. Field Joints: 1/8 inch (3 mm) wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 260500 - ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Provisions of this Section shall apply to all Sections of Division 16.

1.2 SCOPE OF WORK

- A. Furnish and install all materials and equipment and provide all labor required and necessary to complete the work shown on the drawings and/or specified in all Sections of Division 16 and all other work and miscellaneous items, not specifically mentioned, but reasonably inferred for a complete installation, including all accessories required for testing the system. It is the intent of the drawings and specifications that all systems be complete and ready for operation.

1.3 CODE COMPLIANCE

- A. All work and materials shall comply with the latest rules, codes and regulations, including, but not limited to, the following:
 - 1. Occupational Safety and Health Act Standards (OSHA)
 - 2. NFPA #70 – National Electric Code (NEC)
 - 3. ADA Standards – Americans with Disabilities Act
 - 4. ANSI/IEEE C-2 – National Electrical Safety Code
 - 5. NECA – Standard of Installation
 - 6. International Building Code
 - 7. International Fire Code
 - 8. International Energy Conservation Code
 - 9. NFPA #72 – Fire Code
 - 10. NFPA #101 – Life Safety Code
 - 11. All other applicable Federal, State and local laws and regulations
- B. Work to be executed and inspected in accordance with local codes and ordinances. Permits, fees or charges for inspection or other services shall be paid for by the contractor. Local codes and ordinances are to be considered as minimum requirements and must be properly executed without expense to the owner; but do not relieve the contractor from work shown that exceeds minimum requirements.

1.4 CONDITIONS AT SITE

- A. Visit to site is required of all bidders prior to submission of bid. All will be held to have familiarized themselves with all discernible conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not.
- B. Lines of other service that are damaged as a result of this work shall be promptly repaired at no expense to the owner to the complete satisfaction of the owner.

1.5 DRAWINGS AND SPECIFICATIONS

- A. All drawings and all specifications shall be considered as a whole and work of this Division shown anywhere therein shall be furnished under this Division.
- B. Drawings are diagrammatic and indicate the general arrangement of equipment and wiring. Most direct routing of conduits and wiring is not assured. Exact requirements shall be governed by architectural, structural and mechanical conditions of the job. Consult all other drawings in preparation of the bid. Extra lengths of wiring or addition of pull or junction boxes, etc., necessitated by such conditions shall be included in the bid. Check all information and report any apparent discrepancies before submitting bid.
- C. Change to location, type, function, brand name, finish, etc., shall not be made without permission of owner.
- D. Some equipment is specifically designated on the drawings. It is not the intent to sole source any item unless explicitly stated. Items have been specified based upon design requirements. All bidders are encouraged to submit products for approval. Prior approval must be obtained as required by these contract documents. Bids submitted with non-approved items will be considered invalid and bid will be forfeit. Submittals received by the engineer after award of contract on non-approved equipment will not be reviewed nor will they be returned.

1.6 SAFETY AND INDEMNITY

- A. Safety: The contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.
- B. No act, service, drawing review or construction review by the owner is intended to include review of the adequacy of the contractor's safety measures in, on, or near the construction site.

1.7 CONSTRUCTION OBSERVATION BY THE OWNER

- A. Prior to covering: any major portion of the materials installed under this section, notify the owner so that an observation can be made. Notification shall be made at least three (3) working days in advance of the date the items will be covered.

1.8 INSTRUCTION OF OWNER'S PERSONNEL

- A. The contractor shall conduct an on-site instructional tour of the entire project. The personnel designated by the owner shall be instructed in: operation of all electrical systems, trouble-shooting procedures, preventative maintenance procedures, uses of Operation and Maintenance manuals, relamping and cleaning of lighting fixtures and operation of all special systems.
- B. Contractor will include in his bid 4 hours of instruction time to be held at the project location after substantial completion for instruction of owner's personnel. Coordinate time and number of owner personnel to be present and provide schedule to engineer.

1.9 PROJECT COMPLETION

- A. Upon completion of all work and operational checks on all systems, the contractor shall request that a final construction observation be performed.
- B. The owner shall compile a punch list of items to be completed or corrected. The contractor shall notify the owner upon completion of the items.

1.10 WARRANTY

- A. Contractor shall warrant work as provided by the General Conditions of the contract, (AIA Document a201, 1997 edition). The contractor shall specifically reference paragraph 3.5, WARRANTY and paragraph 12.2, CORRECTION OF WORK, except lamps, which shall be guaranteed for thirty (30) days after final acceptance of the work under the contract.
- B. Repair, revision or replacement of any and all defects, failure or inoperativeness shall be done by the contractor at no cost to the owner.

PART 2 - PRODUCTS

2.1 MATERIAL APPROVAL

- A. The design, manufacturer and testing of electrical equipment and materials shall conform to or exceed latest applicable NEMA, IEEE or ANSI standards.
- B. All materials must be new and UL listed. Materials that are not covered by UL testing standards shall be tested and approved by an independent testing laboratory or a governmental agency, which laboratory shall be acceptable to the owner and code enforcing agency.

2.2 SHOP DRAWINGS AND MATERIALS LIST

- A. Submit shop drawings and materials lists through OMS as specified for review.

2.3 OPERATION AND MAINTENANCE MANUALS

- A. Submit Operation and Maintenance Manuals through OMS for review. Provide 2 hard copies for owner use.

2.4 RECORD DRAWINGS

- A. Submit record drawings to owner.

2.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle materials in a manner to prevent damage.
- B. Protect equipment from weather and dampness.

PART 3 - EXECUTION

3.1 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS

- A. Only quality workmanship will be accepted. Haphazard or poor installation practice will be cause for rejection of work.
- B. Provide experienced foreman with a minimum of three years experience working on this type of building placed in charge of this work at all times.

3.2 COORDINATION

- A. Coordinate work with other trades to avoid conflict and to provide correct rough-in and connection for equipment furnished under trades that require electrical connections. Inform contractors of other trades of the required access to and clearances around electrical equipment to maintain serviceability and code compliance.
- B. Verify equipment dimensions and requirements with provisions specified under this Section. Check actual job conditions before fabricating work. Report necessary changes in time to prevent needless work. Changes or additions subject to additional compensation, which are made without the authorization of the owner, shall be at contractor's risk and expense.

3.3 MANUFACTURER'S INSTRUCTIONS

- A. Where the specifications call for an installation to be made in accordance with manufacturer's recommendations, a copy of such recommendations shall at all times be kept in the job superintendent's office and shall be available to the owner.
- B. Follow manufacturer's instructions where they cover points not specifically indicated on drawings and specifications. If they are in conflict with the drawings and specifications obtain clarification from the owner before starting work.

3.4 QUALITY ASSURANCE

- A. The contractor shall insure that all workmanship, all materials employed, all required equipment and the manner and method of installation conforms to accepted construction and engineering practices, and that each piece of equipment is in satisfactory working condition to satisfactorily perform its functional operation.
- B. Provide quality assurance tests and operational check on all components of the electrical distribution system, all lighting fixtures, and special systems.

3.5 CUTTING AND PATCHING

- A. Perform all cutting and fittings required for work of this section in rough construction of the building.
- B. All patching of finished construction of building shall be performed under the sections of specifications covering these materials.
- C. No joists, beams, girders or columns shall be cut by any contractor without obtaining written permission from the owner.

END OF SECTION 260500

SECTION 260519 - CONDUCTORS AND CABLES

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 building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.
- B. All existing conductors related to the fire alarm system shall be removed and replaced with new conductors.

1.3 COORDINATION

- A. Coordinate layout and installation of cables with other installations.
- B. Revise locations and elevations from those indicated, as required to suit field conditions and as approved by the owner.

PART 2 - PRODUCTS

2.1 BUILDING WIRES AND CABLES

- A. Conductors: Stranded, copper, 600 volt insulation, type THHN/THWN.
- B. ALL CONDUCTORS NOT IN CONDUIT SHALL BE PLENUM RATED.
- C. Conductors, #2 AWG and smaller: stranded (no solid wire acceptable), copper, 600 volt insulation, type THHN/THWN.
- D. Color-code 208/120-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
 - 1. Phase A: Black.
 - 2. Phase B: Red.
 - 3. Phase C: Blue.

4. Neutral: White.
 5. Ground: Green.
 6. Isolated ground: Green with yellow tracer.
- E. Color-code 480/277-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
1. Phase A: Brown.
 2. Phase B: Yellow.
 3. Phase C: Orange.
 4. Neutral: White or gray.
 5. Ground: Green.
- F. Wire connectors and splices: units of size, ampacity rating, material, type and class suitable for service indicated.
- G. Signal and communication circuits:
1. ALL CONDUCTORS NOT IN CONDUIT SHALL BE PLENUM RATED.
 2. Special cables as indicated on the drawings.
 3. Conductors for general use: stranded copper conductor, #16 AWG minimum, with THWN insulation for underground or wet locations and THHN insulation for dry locations.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

- A. All existing conductors related to the fire alarm system shall be removed and new conductors shall be installed.
- B. Examine raceways and building finishes to receive wires and cables for compliance with requirements for installation tolerances and other conditions affecting performance of wires and cables. Do not proceed with installation until unsatisfactory conditions have been corrected.
- C. Use no wire smaller than #12 AWG for power and lighting circuits and no smaller than #14 AWG for control wiring.
- D. Use #10 AWG conductor for 20 Amp, 120 volt branch circuits longer than 75 feet, and for 20 Amp, 277 volt branch circuits longer than 200 feet.
- E. Place an equal number of conductors for each phase of a circuit in the same raceway or conduit.

- F. Splice only in junction or outlet boxes.
- G. Neatly train or lace wiring inside boxes, equipment, and panelboards.
- H. Make conductor lengths for parallel circuits equal.

3.2 INSTALLATION

- A. Install wires and cables as indicated, according to manufacturer's written instructions and NECA's "Standard of Installation."
- B. Remove existing wires from raceway before pulling in new wires and cables.
- C. Pull Conductors: Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket weave wire/cable grips that will not damage cables or raceway.
- E. Install exposed cables, parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables above accessible ceilings; do not rest on ceiling tiles. Do not fasten cables to ceiling support wires. Use cable ties to support cables from structure.

3.3 CONNECTIONS

- A. Conductor Splices: Keep to minimum.
- B. Install splices and tapes that possess equivalent or better mechanical strength and insulation ratings than conductors being spliced.
- C. Use splice and tap connectors compatible with conductor material.
- D. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.
- E. Connect outlets and components to wiring and to ground as indicated and instructed by manufacturer.
- F. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.
- G. Terminate spare conductors with electrical tape.

3.4 LABELING

- A. Provide Brady wire markers or equivalent on all conductors. All wire shall be labeled in each box and panel with the circuit number and panel identification.

3.5 FIELD QUALITY CONTROL

- A. Inspect wire and cable for physical damage.
- B. Perform continuity testing on all power and equipment branch circuit conductors. Verify proper phasing connections.

END OF SECTION 260519

SECTION 260526 - GROUNDING

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 grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

1.3 SYSTEM DESCRIPTION

- A. Where not specifically forbidden, bond together system neutrals, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductors in raceways and cables, receptacle ground connectors, and plumbing systems.

PART 2 - PRODUCTS

2.1 GROUNDING CONDUCTORS

- A. For insulated conductors, comply with Section 260519 - Conductors and Cables.
- B. Material: Copper.
- C. Equipment Grounding Conductors: Insulated with green-colored insulation. Where green insulation is not available, on larger sizes, black insulation shall be used and suitably identified with green tape at each junction box or device enclosure.
- D. Isolated Ground Conductors: Insulated with green-colored insulation with yellow tracer. Where not available, green and yellow tape at each junction box or device enclosure.
- E. Underground Conductors: Bare, tinned, stranded, unless otherwise indicated.
- F. Bare Copper Conductors: Medium hard drawn copper conductor, stranded, sized as shown on the drawings.
- G. Hardware: Bolts, nuts and washers shall be bronze, cadmium plated steel or other non-corrosive material, approved for the purpose.

- H. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators.

2.2 CONNECTOR PRODUCTS

- A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.
- B. Bolted Connectors: Bolted-pressure-type connectors, or compression type.
- C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.
- D. Below grade compression fittings: Thomas & Betts, Series 52000, 53000, and 54000 or equivalent.
- E. Use connector and sealant approved for purpose on all below grade clamp or compression type connections.

2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel, 5/8 inch diameter, minimum length 8 feet.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Use only copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.
- B. In raceways, use insulated equipment grounding conductors.
- C. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections.
- D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.
- E. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
 - 1. Use insulated spacer; space 1 inch from wall and support from wall 6 inches above finished floor, unless otherwise indicated.
- F. Underground Grounding Conductors: Use copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade.

3.2 EQUIPMENT GROUNDING CONDUCTORS

- A. Comply with NEC Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NEC are indicated.
- B. Install equipment grounding conductors in all feeders and circuits.
- C. Computer Outlet Circuits: Install insulated equipment grounding conductor in branch-circuit runs from computer-area power panels or power-distribution units.
- D. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate grounding conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.
- E. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways bonded to outlet or equipment, sized per Section 250 of the NEC.
- F. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
 - 1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on grounding bar.
 - 2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

3.3 INSTALLATION

- A. Ground Rods: Where indicated, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes.
 - 1. Drive ground rods until tops are 2 inches below finished floor or final grade, unless otherwise indicated.
 - 2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds, unless otherwise indicated. Make connections without exposing steel or damaging copper coating.
- B. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts. Install straps only in locations accessible for maintenance.

3.4 CONNECTIONS

- A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
 - 2. Make connections with clean, bare metal at points of contact.
 - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
 - 4. Make aluminum-to-galvanized steel connections with tin-plated copper jumpers and mechanical clamps.
 - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- B. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.
- C. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.
- D. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values.
- E. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.
- F. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

3.5 EQUIPMENT GROUND

- A. Ground non-current carrying metal parts of electrical equipment enclosures, frames, conductor raceways or cable trays to provide a low impedance path for line-to-ground fault current and to bond all non-current carrying metal parts together. Install a grounding conductor in each raceway system. Equipment grounding conductor shall be electrically and mechanically continuous from the electrical circuit source to the equipment to be grounded. Size grounding conductors per NEC 250 unless otherwise shown on the drawings.
- B. Install metal raceway couplings, fittings, and terminations secure and tight to ensure good grounding continuity. Provide grounding conductor sized per NEC through all raceway and conduit systems.

- C. Lighting fixtures shall be securely connected to equipment grounding conductors. Outdoor lighting standards shall have a factory installed ground lug for terminating the grounding conductor.
- D. Motors shall be connected to equipment ground conductors with a bolted solderless lug connection on the metal frame.

3.6 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

END OF SECTION 260526

SECTION 260529 - SUPPORTING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 WORK INCLUDED

- A. Conduit and equipment supports.
- B. Fastening hardware.

1.3 RELATED WORK

- A. Division 3 - Concrete Work. Concrete equipment pads.

1.4 COORDINATION

- A. Coordinate size, shape and location of concrete pads with Division 3.

1.5 QUALITY ASSURANCE

- A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

PART 2 - PRODUCTS

2.1 MATERIAL

- A. Support Channel: Galvanized or painted steel.
- B. Hardware: Corrosion resistant and tamper resistant

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using expansion anchors. Do not use spring steel clips and clamps.
- B. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, or gypsum board partitions and walls; expansion anchors or preset inserts in solid masonry walls; expansion anchor on concrete surfaces; sheet metal screws in sheet metal studs; and wood screws in wood construction. All fasteners in inmate accessible areas are to be security fasteners.
- C. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit.
- D. Do not use powder-actuated anchors.
- E. Do not drill structural steel members.
- F. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
- G. In wet locations install free-standing electrical equipment on concrete pads.
- H. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- I. Bridge studs top and bottom with channels to support flush-mounted cabinets and panelboards in stud walls.
- J. All supports and attachments shall meet local seismic zone 2B requirements.

END OF SECTION 260529

SECTION 26-0533 - RACEWAYS AND BOXES

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 raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. IMC: Intermediate metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RMC: Rigid metal conduit.
- F. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

1.5 COORDINATION

- A. Coordinate layout and installation of raceways and boxes with other construction elements to ensure adequate headroom, working clearance, and access.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. RMC: Rigid Steel Conduit: ANSI C80.1.

- B. IMC: ANSI C80.6.
- C. PVC coated Steel Conduit and Fittings: NEMA RN 1; rigid steel conduit with external 40 mil PVC coating and internal two mil urethane coating.
- D. EMT and Fittings: ANSI C80.3. Fittings: Compression Type.
- E. FMC: Zinc-coated steel.
- F. LFMC: Flexible steel conduit with PVC jacket. Fittings: NEMA FB 1; compatible with conduit/tubing materials.

2.2 NONMETALLIC CONDUIT AND TUBING

- A. RNC: NEMA TC 2, Schedule 40 PVC. Fittings: NEMA TC 3; match to conduit and material.

2.3 METAL WIREWAYS

- A. Material: Sheet metal sized and shaped as indicated.
- B. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- C. Finish: Manufacturer's standard enamel finish.

2.4 OUTLET AND DEVICE BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
- B. Cast-Metal Boxes: NEMA FB 1, Type FD, cast box with gasketed cover.

2.5 PULL AND JUNCTION BOXES

- A. Small Sheet Metal Boxes: NEMA OS 1, galvanized steel.
- B. Cast-Metal Boxes: NEMA FB 1, cast aluminum with gasketed cover.

2.6 ENCLOSURES AND CABINETS

- A. Hinged-Cover Enclosures: NEMA 250, Type 1, 3R, or 4, with continuous hinge cover and flush latch, key operable.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

- B. Cabinets: NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage, and include accessory feet where required for freestanding equipment.

2.7 J-HOOKS

- A. J-hooks: Steel, rated for indoor use in non-corrosive environments. J-hooks shall be rated to support Category 5e cable.
- B. Fittings and Support Bodies: Manufacturer's recommended fittings including side mount flange clips, bottom mount flange clips, beam clamp, rod and flange clip, C & Z purlin clip, and all other components and assemblies to make the system work.
- C. Acceptable Product: Caddy CableCat Hanging System, 1-5/16" and 2" hooks, or approved equal
- D. Acceptable Manufacturer: Erico Fastening Products or approved equal.
- E. J-hook Supports: Manufacturer's recommended fastening devices.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive raceways, boxes, enclosures, and cabinets for compliance with installation tolerances and other conditions affecting performance of raceway installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 WIRING METHODS

- A. Outdoors: Use the following wiring methods:
 - 1. Exposed: Rigid steel or IMC.
 - 2. Concealed: Rigid steel or IMC.
 - 3. Underground, Single Run: RNC or PVC Externally Coated Rigid Steel Conduit where required by NEC 517.13.
 - 4. Underground, Grouped: RNC or PVC Externally Coated Rigid Steel Conduit where required by NEC 517.13.
 - 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 - 6. Boxes and Enclosures: NEMA 250, Type 3R or Type 4.
- B. Indoors: Use the following wiring methods:
 - 1. Exposed: EMT.

2. Concealed: EMT.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except in wet or damp locations, use LFMC.
4. Damp or Wet Locations: Rigid steel conduit.
5. Boxes and Enclosures: NEMA 250, Type 1, except as follows:
 - a. Damp or Wet Locations: NEMA 250, Type 4, stainless steel.

3.3 INSTALLATION

- A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.
- B. Minimum Raceway Size: 1/2-inch trade size. 3/4-inch minimum for homeruns.
- C. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- D. Install raceways level and square and at proper elevations. Provide adequate headroom.
- E. Complete raceway installation before starting conductor installation.
- F. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.
- G. In areas where there is no existing surface mounted conduit, new conduit must be concealed behind ceiling or walls.
- H. Use temporary closures to prevent foreign matter from entering raceways.
- I. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portion of bends is not visible above the finished slab.
- J. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.
- K. Use raceway fittings compatible with raceways and suitable for use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.
- L. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.
- M. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.
 1. Run parallel or banked raceways together, on common supports where practical.

2. Make bends in parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.
- N. Join raceways with fittings designed and approved for the purpose and make joints tight.
1. Make raceway terminations tight. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight.
 2. Use insulating bushings to protect conductors.
- O. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.
- P. Install pull wires in empty raceways. Utilize polyester line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of the pull wire.
- Q. Telephone and Signal System Raceways: In addition to the above requirements, install raceways in maximum lengths of 150 feet and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements.
- R. Install raceway sealing fittings according to manufacturer's written instructions. Locate fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
1. Where conduits pass from warm to cold locations, such as the boundaries of refrigerated spaces.
 2. Where otherwise required by NEC.
- S. Apply firestopping to cable and raceway penetrations of fire-rated floor, ceiling and wall assemblies to achieve fire-resistance rating of the assembly.
- T. Route conduit through roof openings for piping and ductwork where possible; otherwise, install roof penetrations in accordance with roofing system requirements. Coordinate with roofing installer.
- U. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used 6 inches above the floor. Install screwdriver-operated, threaded flush plugs flush with floor for future equipment connections.
- V. Flexible Connections: Use maximum of 6 feet of flexible conduit for recessed and semi-recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquidtight flexible conduit in wet or damp locations. Install separate ground conductor across flexible connections.
- W. PVC Externally Coated, Rigid Steel Conduits: Use only fittings approved for use with that material. Patch all nicks and scrapes in PVC coating after installing conduits.

- X. Surface Raceways: Install a separate, green, ground conductor in raceways from junction box supplying the raceways to receptacle or fixture ground terminals.
- Y. Conduits shall not be routed on or above the roof without prior approval from the Engineer. Instead, the branch circuits shall be routed at the structure level below the roof to feed roof-top equipment. When approval is granted to route conduits on or above the roof, the conduits shall be strapped to 4"x4"x18" and supported on blocks of wood at intervals not exceeding NEC requirements. The conduits shall not be rested directly on the roof. It shall be permissible to penetrate the roof adjacent mechanical or electrical equipment to power that respective equipment.
- Z. New exposed conduit shall be painted to match adjacent surfaces.
- AA. All underground conduit shall use PVC coated rigid conduit for all elbows and sweeps. The contractor shall transition from PVC to PVC coated rigid conduit using listed means and methods.

3.4 SUPPORT INSTALLATION

- A. Install support devices to securely and permanently fasten and support electrical components.
- B. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.
- C. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers, at least every 8 feet. For surface mounted conduit in areas accessible to inmates and below 10' provide 2 hole straps every 4 feet and within 12" on both sides of all junctions, boxes, terminations, corners and devices.
- D. Size supports for multiple raceway installations so capacity can be increased by a 25 percent minimum in the future.
- E. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps For surface mounted conduit in areas accessible to inmates and below 10' provide 2 hole straps every 4 feet and within 12" on both sides of all junctions, boxes, terminations, corners and devices.
- F. Install 1/4-inch diameter or larger threaded steel hanger rods, unless otherwise indicated.
- G. Spring-steel fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2-inch and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports. Two hole straps must be used on all exposed conduit in areas accessible to inmates and below 10'.
- H. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals.
- I. Simultaneously install vertical conductor supports with conductors.

- J. Separately support cast boxes that are threaded to raceways and used for fixture support. Support sheet-metal boxes directly from the building structure or by bar hangers. If bar hangers are used, attach bar to raceways on opposite sides of the box and support the raceway with an approved fastener not more than 24 inches from the box. In areas where exposed conduit is in area accessible to inmates and below 10', two hole straps must be used within 12" from the box.
- K. Install metal channel racks for mounting cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices unless components are mounted directly to structural elements of adequate strength.
- L. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.
- M. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit. All fasteners are to be tamper resistant. Perform fastening according to the following unless other fastening methods are indicated:
 - 1. Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units..
 - 2. Existing Concrete: Zamac nail in or equivalent.
 - 3. Steel: Spring-tension clamps on steel.
 - 4. Light Steel: Sheet-metal screws.
 - 5. Fasteners: Select so the load applied to each fastener does not exceed 25 percent of its proof-test load.
- N. Do not drill structural steel members.
- O. All supports and attachments shall meet local seismic zone requirements.

3.5 BOX INSTALLATION

- A. Do not install boxes back-to-back in walls.
- B. Locate boxes in masonry walls to require cutting of masonry unit edge only. Coordinate masonry cutting to achieve neat openings for boxes.
- C. Provide knockout closures for unused openings.
- D. Support boxes independently of conduit except for cast boxes that are connected to two rigid metal conduits, both supported within 12 inches of box.
- E. Use 4" boxes with multiple-gang mudring where more than one device are mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.

- F. Install boxes in walls without damaging wall insulation.
- G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- H. Position outlets to locate lighting fixtures as shown on reflected ceiling plans.
- I. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed luminaire, to be accessible through luminaire ceiling opening.
- J. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness. Use stamped steel stud bridges for flush outlets in hollow stud walls, and adjustable steel channel fasteners for flush ceiling outlet boxes.
- K. Align wall-mounted outlet boxes for switches, thermostats, and similar devices.
- L. Install hinged-cover enclosures and cabinets plumb. Support at each corner.
- M. Locate pull and junction boxes above accessible ceilings or in unfinished areas. Support pull and junction boxes independent of conduit.
- N. Minimum box size to be 4" square by 2 1/8" deep.
- O. Provide covers with security fasteners on all j-boxes.
- P. Surface mounted junction boxes mounted below 10' must be either cast boxes with screw in conduit fittings or have the unused KO's tack welded in place to ensure that they cannot be removed.

3.6 LABELING

- A. Label cover plate of all pull and junction boxes by system served. Indicate panel circuits for power and lighting boxes.

3.7 CLEANING

- A. On completion of installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches, and abrasions.

END OF SECTION 260533

SECTION 262416 - PANELBOARDS

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 overcurrent protective devices, and associated auxiliary equipment rated 600 V and less for the following types:
 - 1. Lighting and appliance branch-circuit panelboards.

1.3 SUBMITTALS

- A. Product Data: For each type of overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:
 - a. Enclosure types and details for types other than NEMA 250, Type 1.
 - b. Bus configuration, current, and voltage ratings.
 - c. Short-circuit current rating of overcurrent protective devices.
 - d. UL listing for series rating of installed devices.
 - e. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
- C. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.
- D. Maintenance Data: For components, include the following:
 - 1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
 - 2. Time-current curves, including selectable ranges for each type of overcurrent protective device.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in the NEC, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NEMA PB 1.
- C. Comply with the NEC.

1.5 COORDINATION

- A. Coordinate layout and installation of components with existing conditions and other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to workspace clearance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
 - 1. Overcurrent Protective Devices and Accessories:
 - a. Shall be compatible with the existing panelboard in which they are being installed, field verify manufacturer prior to ordering devices and accessories.

2.2 FABRICATION AND FEATURES

- A. Directory Card: With transparent protective cover, mounted inside metal frame, inside panelboard door.
- B. Panels located adjacent to each other shall have identically sized enclosures and trims.

2.3 PANELBOARD SHORT-CIRCUIT RATING

- A. UL label indicating series-connected rating with integral or remote upstream devices. Include size and type of upstream device allowable, branch devices allowable, and UL series-connected short-circuit rating. If not series rated: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Branch Overcurrent Protective Devices:

1. 120/208 volt branch circuit panelboards: Quick-make, quick-break, molded case plug-in type designed for 120/208 volt, three-phase, four-wire service with minimum 10,000 amperes rms short circuit rating.
2. 277/480 volt branch circuit panelboards: Molded case bolt-on type designed for 277/480 volt, three-phase, four-wire service with minimum 14,000 amperes rms short circuit rating.
3. Provide multi-pole units with common trip elements.
4. Breaker shall have center-tripped position in addition to the ON and OFF positions.
5. Provide lockouts for all circuits that should not be inadvertently tripped (as indicated on the drawings).

2.5 OVERCURRENT PROTECTIVE DEVICES

- A. Molded-Case Circuit Breaker: NEMA AB 1, with interrupting capacity to meet available fault currents.
 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
 2. GFCI Circuit Breakers: Single- and two-pole configurations with 5-mA trip sensitivity.
- B. Molded-Case Circuit-Breaker Features and Accessories. Standard frame sizes, trip ratings, and number of poles.
 1. Lugs: Mechanical or compression style, suitable for number, size, trip ratings, and material of conductors.
 2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
 3. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
 4. Shunt Trip: 120-V trip coil energized from separate circuit.

PART 3 -EXECUTION

3.1 INSTALLATION

- A. Install panelboards and accessories according to NEMA PB 1.1.
- B. Clearances: Minimum code required clearances around panelboards must be maintained.
- C. Mounting Heights: Top of trim 78 inches above finished floor, unless otherwise indicated.
- D. Mounting: Plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.
- E. Mounting Hardware: Provide all necessary blocking, channels and other hardware for securing panelboards to wall, column or other parts of building structure.

- F. Circuit Directory: Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- G. Install filler plates in unused spaces.
- H. Wiring in Panelboard Gutters: Arrange conductors into groups and bundle and wrap with wire ties after completing load balancing.

3.2 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components.

3.3 CONNECTIONS

- A. Install equipment grounding connections for panelboards with ground continuity to main electrical ground bus.
- B. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

3.4 FIELD QUALITY CONTROL

- A. Testing: After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.
 - 1. Procedures: Perform each visual and mechanical inspection and electrical test indicated in NETA ATS, Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

3.5 CLEANING

- A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 262416

SECTION 262726 - WIRING DEVICES

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 receptacles, switches, and finish plates.

1.3 DEFINITIONS

- A. GFCI: Ground-fault circuit interrupter.
- B. TVSS: Transient voltage surge suppressor.

1.4 SUBMITTALS

- A. Submit shop drawings and product data.

1.5 COORDINATION

- A. Receptacles for Owner-Furnished Equipment: Match plug configurations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
- B. Wiring Devices:
 - 1. Bryant; Hubbell, Inc.
 - 2. GE Company; GE Wiring Devices.
 - 3. Hubbell Wiring Device – Kellems
 - 4. Leviton Manufacturing Co., Inc.
 - 5. Pass & Seymour/Legrand; Wiring Devices Div.
 - 6. Cooper Wiring Devices
 - 7. Or approved equal.

C. Wiring Devices for Hazardous (Classified) Locations:

1. Crouse-Hinds Electrical Co.; Distribution Equipment Div. or approved equal.

D. Multi-outlet Assemblies:

1. Wiremold.
2. Hubbell, Inc.; Wiring Devices Div.
3. Or approved equal.

2.2 RECEPTACLES

A. General Requirements for All Devices

1. Each device shall have an amperage rating not less than that of the branch circuit(s) overcurrent protection device. Ivory color, unless noted otherwise.
 - a. Emergency devices backed up by an emergency generator and the associated cover plates shall be Red color.
2. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. All devices shall be Commercial Specification Grade (Construction specification grade is prohibited), unless noted otherwise.
 - a. All convenience receptacles shall be Heavy-Duty 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 5362 Series or similar.

B. Straight-Blade: All devices shall be Tamper Resistant where required by the National Electric Code and/or local amendments.

1. Tamper Resistant—Convenience Receptacles: 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL5362xxTR Series or similar.

C. GFCI Receptacles: Duplex convenience receptacle with integral ground fault current interrupter. Provide one device for each location, daisy-chaining devices to achieve GFCI protection is not approved for this project.

1. Duplex GFCI Convenience Receptacles, 125 V, 20 A.
2. Straight Blade, non-feed through type.
3. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
4. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.
5. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; GFRST20xx Series or similar.

- D. Isolated-Ground Receptacles: Equipment grounding contacts connected only to the green grounding screw terminal of the device with inherent electrical isolation from mounting strap, orange plastic face.
1. General Description: Straight Blade, 125 V, 20 A, Configuration 5-20R. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 1449, and FS W-C-596, with integral TVSS in line to ground, line to neutral, and neutral to ground.
 2. TVSS Components: Multiple metal-oxide varistors; with a nominal clamp-level rating of 400 V and minimum single transient pulse energy dissipation of 240 J, according to IEEE C62.41.2 and IEEE C62.45.
 3. *Active TVSS Indication: Visual and audible, with light visible in face of device to indicate device is "active" or "no longer in service."*
 4. *Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL5362SA Series or similar.*
 5. *Devices: Listed and labeled as isolated-ground receptacles.*
 6. *Isolation Method: Integral to receptacle construction and not dependent on removable parts.*

2.3 SWITCHES

- A. Snap Switches: General-duty, quiet type, rated 20 amperes, 120/277 volts AC. Handle: Ivory plastic, unless noted otherwise.
1. *TOGGLE SWITCHES: Heavy-duty, quiet type, rated 20 amperes, 120/277 volts AC Comply with NEMA WD 1, UL 20, and FS W-S-896.*
 - a. *Single Pole: Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 1221 Series or similar.*
 - b. *Double Pole: Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 1222 Series or similar.*
 - c. *Three Way: Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 1223 Series or similar.*
 - d. *Four Way: Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 1224 Series or similar.*
 2. *Pilot-Light Switches, Single pole, with neon-lighted handle, illuminated when switch is "on", 20 A, for 120 and 277 V. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL1221PL Series or similar.*
 3. *Illuminated Switches, Single pole, with neon-lighted handle, illuminated when switch is "off." 20 A, for 120 and 277 V. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL1221IL Series or similar.*
 4. *Key-Operated Switches, 120/277 V, 20 Amp, with factory-supplied key in lieu of switch handle. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL1221L Series or similar.*
- B. Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on/off switches and audible and electromagnetic noise filters
1. *Control: Continuously adjustable slide. Single-pole or three-way switch to suit connections.*
 2. *Incandescent Lamp Dimmers: Modular, 120 V, 60 Hz with continuously adjustable slide; single pole with soft tap or other quiet switch; electromagnetic filter to eliminate noise, RF, and TV interference; and 5-inch wire connecting leads.*

3. *LED fixture dimmers: Modular; compatible with drivers; trim potentiometer to adjust low-end dimming; dimmer-driver combination capable of consistent dimming to a maximum of 1 percent of full brightness.*

2.4 *WALL PLATES*

- A. *Single and combination types match corresponding wiring devices.*

1. *Cover plate: Stainless Steel, unless noted otherwise.*
2. *Cover plate for surface mounted devices: Galvanized steel.*
3. *Weatherproof cover plate: While in use, gasketed, cast metal, hinged device covers.*
4. *Plate-Securing Screws: Metal with head color to match plate finish, security Torx drive with center rejection pin.*

PART 3 - EXECUTION

3.1 *INSTALLATION*

- A. *Install devices and assemblies plumb and secure.*
- B. *Install wall plates when painting is complete.*
- C. *Install wall dimmers to achieve indicated rating after derating for ganging as instructed by manufacturer.*
- D. *Do not share neutral conductor on load side of dimmers.*
- E. *Arrangement of Devices: Unless otherwise indicated, mount flush, vertically, with height as indicated or six inches above counters.*
- F. *Group adjacent switches under single, multigang wall plates.*
- G. *Protect devices and assemblies during painting.*
- H. *Install wall switches with off position down.*
- I. *Install cover plates on switch, receptacle, and blank outlets.*

3.2 *IDENTIFICATION*

- A. *Switches and receptacles: Identify panelboard and circuit number from which served. Use machine-printed, pressure-sensitive, abrasion-resistant label tape on the outside of the face plate for receptacles and on the inside of the face plate for switches; utilize durable wire markers or tags within all outlet boxes. Labels shall be Brother ½” TZ tape, black ink on clear, extra-strength adhesive tape, with size 18 text or engineer approved equal. Use matching label printer.*

3.3 CONNECTIONS

- A. Connect wiring device grounding terminal to outlet box with bonding jumper.
- B. Connect wiring device grounding terminal to branch-circuit equipment grounding conductor.
- C. Isolated-Ground Receptacles: Connect to isolated-ground conductor routed to designated isolated equipment ground terminal of electrical system.
- D. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

3.4 FIELD QUALITY CONTROL

- A. Test wiring devices for proper polarity and ground continuity. Check each device to verify operation.
- B. Test GFCI operation according to manufacturer's written instructions.
- C. Replace damaged or defective components.

3.5 CLEANING

- A. Internally clean devices, device outlet boxes, and enclosures. Replace stained or improperly painted wall plates or devices.

END OF SECTION 262726