

RLA Architecture
#10420

Bid and Permit

Volume 01

PROJECT MANUAL

for the

RESTROOM REFURBISHMENT of the SOUTHWEST BRANCH SOUTH TRAIL BRANCH RFQ OCLS-19-002

prepared for

**Orange County Library
101 East Central Blvd.
Orlando, Florida 32801**

March 22, 2019

SECTION 00 0100
TITLE PAGE

OWNER

Orange County Library
101 East Central Blvd.
Orlando, Florida 32801

ARCHITECT OF RECORD

RLArchitecture
301 South Sweetwater Cove Blvd.
Longwood, Florida 32779
Phone (407) 756 7833



ELECTRICAL CONSULTANT

Alers Engineering Group, LLC
5341 Lake Howell Road
Winter Park, FL 32792
Phone (407) 971-3935

MECHANICAL/ PLUMBING

Tags Engineering, LLC
1621 Katie Cv
Sanford, FL 32771
Phone (407) 463-3935

SECTION 00 0103
STATEMENT OF COMPLIANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. To the best of my knowledge the Plans and Specifications comply with the applicable minimum building codes and the applicable fire-safety standards as determined by the local authority in accordance with this Section and 633 Florida Statutes.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION – Not Used

END OF SECTION 00 0103

SECTION 00 0104
NON-ASBESTOS CERTIFICATION

PART 1 - GENERAL

1.1 CERTIFICATION STATEMENT

- A. To the best of my knowledge these Contract Documents do not contain any asbestos containing materials intended for use in construction.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION – Not Used

END OF SECTION 00 0104

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Not Used

END OF SECTION 00 0110

SECTION 01 1100
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A. The Project consists of the renovation of restroom and staff kitchen at the Southeast branch of the Orange County Library System.
- B. Contract Documents, dated March 22, 2019 were prepared by RLArchitecture, 301 South Sweetwater Cove Blvd., Longwood, Florida 32779.
- C. The Work consists of all items as indicated within the Contract Documents and those items of construction not indicated but normal and necessary and usual in the construction industry for construction of a building project.
 - 1. The project consists of the interior renovation of existing restrooms and staff kitchen.

1.2 CONTRACTS

- A. Contract Type: Single Prime

1.3 WORK SEQUENCE

- A. Work will be conducted in three phases
 - 1. Phase 01: (Southwest Branch). Phase 01 Date of Substantial Completion is October 31, 2019 with 7 days after to complete the Corrections and Completions list.
 - 2. Phase 02: (South Trail Branch). Phase 02 Date of Substantial Completion is November 30, 2019 with 7 days after to complete the Corrections and Completions list.
 - 3. Phase 03: (Southeast Branch). Phase 03 Date of Substantial Completion is December 31, 2019 with 7 days after to complete the Corrections and Completions list.

1.4 ADMINISTRATIVE RESPONSIBILITIES

- A. Maintain the Construction Schedule throughout Work.
- B. Contract Documents are not divided in any way to assume any division of labor. Examine all Contract Documents to avoid omissions or duplications.
- C. Understand conditions relating to the construction of the Project and the employment of necessary labor. Failure to do so will not relieve the obligation to provide all material and labor required to carry out the provisions of the Contract.
- D. HVAC is currently on a set time schedule. Coordinate HVAC schedule adjustments with Owner's representative.
- E. Building Security: Building has an access control system with lock/unlock schedules. Coordinate with Owner's Representative for entrance and workers' badge assignments.

1.5 CONTRACTOR USE OF PREMISES

- A. Limit use of premises to construction activities in areas indicated or as directed

by the Owner.

1. Do not disturb portions of the site beyond the areas which Work is indicated.
 2. Allow for Owner occupancy and Site use by the public.
 3. Existing systems shall remain in operation during the construction period.
 4. Keep driveways and entrances serving the premises clear and available to the Owner, public, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 5. Do not dispose any organic or hazardous materials on site either by burial or burning.
 6. Site Restoration: Restore site areas damaged or altered during construction to original or better condition.
 7. Keep worksite free and clear of rubbish, trash, and other debris throughout day and all trash removed at end of work day
- B. Move stored products that interfere with operation of the Owner.
- C. Obtain and pay for the use of additional storage of work areas needed for operation.
- D. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its contents during the construction period.

1.6 OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
1. Unless otherwise directed by the Owner, work shall be scheduled at the discretion of the Contractor.
 2. In general, the building will be closed to the public for the duration of the construction.
 3. Library Branches located in a shopping center and may have noise limitations. Keep loud noises to a minimum during the times the neighbors are occupying the buildings. Coordinate with Owner's rep for times available for specific functions that create a possible noise issue.

1.7 TAXES

- A. Taxes which are legally enacted at the time bids are received, whether or not effective, shall be paid by the contractor.

1.8 PERMITS, FEES, AND NOTICES

- A. Orange County Library System will secure all permits
- B. Coordinate utility tie-ins with local utility company and other involved parties for minimum interruption of service.

- C. Coordinate inspections of installed Work with governing authorities. Leave Work uncovered until approved.
- D. Give notices and comply with laws, ordinances, rules, regulations, and orders of public authorities bearing on the performance of the Work. If the Contract Documents are at variance, notify the Architect in writing. Necessary changes will be adjusted by appropriate notification. If Work is performed while knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Architect, the portion of Work in question shall be corrected at no additional cost to the Project.

1.9 LABOR AND MATERIALS

- A. Provide labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated.
- B. Enforce strict discipline and good working order among employees or other persons carrying out Work of this Contract. Do not permit employment of unfit person or persons or anyone not skilled in the task assigned to them.

1.10 WORKER CONDUCT, APPEARANCE, AND WORK RULES

- A. The conduct and appearance of each worker at the Site is of paramount importance. The Owner reserves the right to require any worker to be banished from the Site.
- B. General Conduct and Demeanor: All construction workers shall treat all other workers, Owners staff, and the public with respect and courtesy.
- C. Physical Appearance: Require each worker to dress appropriately in a clean, neat, and professional manner.
- D. Entertainment Devices (including, but not limited to radios, CD players, MP3 players and televisions): The use of all entertainment devices, including personal devices (walk man type) with headphones or earphones, is strictly prohibited at all times.
 - 1. Control the volume of communication radios and loudspeakers to avoid creating a nuisance.
- E. Language: Foul and rude language is strictly prohibited.
- F. Physical Actions: Running, horseplay, fighting, and other unprofessional conduct is prohibited. Fighting is a major infraction of the work rules.
- G. Stealing: Stealing of any materials, objects, furnishings, equipment, fixtures, supplies, clothing, or other items will not be tolerated and is a major infraction of the work rules.
- H. Sexual Harassment: All forms of physical and verbal sexual harassment will not be tolerated and is a major infraction of the work rules. Sexual harassment includes, without limitation: touching, whistling, sexually explicit stories, jokes, drawings, photos and similar representations, exhibitionism and all other sexually oriented offensive behavior.
- I. Warnings and Dismissal:

1. For minor infractions of the rules, the Owner may issue a warning. Only one warning will be allowed per worker. A second infraction will result in immediate dismissal of the worker from the Site.
 2. For major infractions of the rules, the worker shall be dismissed immediately without warning and is subject to possible criminal prosecution.
- J. Notification of Workers: Clearly notify and educate each worker about these Work Rules and the requirements for worker conduct and appearance.
1. Recommendations: The Owner recommends that the Contractor notify each worker of the work rules in writing and obtain a signed acknowledgment of the worker's understanding of the work rules as a condition of employment.

1.11 PROJECT COORDINATION

- A. Provide full-time, on-site supervision including a project coordinator and superintendent to coordinate all aspects of the Work through final completion.
1. Designate a Safety and Health Representative to administer the Safety and Health Program.
- B. Coordinate the performance of subcontractors in the utilization of the site, as well as in the actual performance of their contractual obligations.
- C. Verify all dimensions shown on the Drawings and obtain all measurements required for execution of Work.
- D. Installer's Acceptance of Conditions: require all installers to inspect substrates and conditions under which work is to be executed and report in writing conditions detrimental to the proper execution and completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work means installer accepts previous work and conditions.
- E. Owner and Contractor Provided Special and Other Equipment
1. Copies of Equipment Specifications and Drawings shall be made available to all trades for information by which they shall determine the amount of Work to be done.
 2. As the Project nears completion, certain rooms may be made ready to accept the equipment intended for them.
 3. Cooperate with the suppliers' installation personnel by providing unobstructed areas in which they may assemble and install equipment. These areas shall be adequately heated and lighted with temporary or permanent power available for tools or testing purposes.
- F. Temporary Omission of Work: If any materials and finishes are of such nature that it is necessary to temporarily omit certain portions of work (as illustrated in the Contract Documents) in order to make final installation, omit such parts or finish as necessary until other work or materials have been installed. Coordinate omitted parts of work prior to Substantial Completion.
- G. Rodent and Pest Control: Provide control measures to keep snakes, rodents, birds, and other animals or pests from nesting in the building(s) and storage areas during the construction period

1. Provide localized control measures to eliminate all outbreaks of insect infestation such as ant colonies, hornet nests, or bee hives during the construction period.
2. Use only chemicals that bear a Federal registration number of the U.S. Environmental Protection Agency
3. Employ methods that will not adversely affect the site or any adjacent sites.

1.12 PROJECT SAFETY AND SECURITY

- A. Develop a safety and security program, specifically oriented for protection and preventing damage, injury, or loss to the Project, other property at the Site, and adjacent properties. Program shall be acceptable to the Owner and shall remain in effect through Substantial Completion of the Project.

1.13 WORK RESTRICTIONS

- A. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Schedule and coordinate all times of interrupted utility service, shut downs, and disruptions to public services with the Owner's Representative 72 hours in advance.
 2. Do not proceed with utility interruptions without Owner's written permission.
- B. Nonsmoking Building: Smoking will not be permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes after the building is enclosed.

1.14 SPECIAL REQUIREMENTS

- A. Comply with the Life Safety requirements and approvals of the Orange County Building Department and the Orange County Fire Department,
 1. Life Safety includes, but is not limited to, the following:
 - a. Exiting requirements.
 - b. Overhead protection.
 - c. Protection of the general public.
 - d. Construction traffic plans and staging.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Permit Posting Board: Provide a permit posting board with weatherproof cover for posting all permits and other information requested by the Owner. Coordinate size and location with Owner's Representative.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 1100

SECTION 01 2513
PRODUCT SUBSTITUTIONS PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling requests for substitutions.
- B. Substitutions are subject to the full requirements of the Contract Documents.

1.2 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed are considered requests for substitutions. The following are not considered substitutions:
 - 1. Revisions to Contract Documents requested by the Owner or Architect.
 - 2. Specified options of products and construction methods included in Contract Documents.
 - 3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.3 SUBMITTALS

- A. Request for Substitution Form: Submit substitution requests to the Architect through a Construction Manager on the Request for Substitution form attached at the end of this section.
- B. Architect's Action: Additional information or documentation necessary for evaluation of the substitution may be requested. Notification of approved substitutions will be made by Addendum or by Request for Proposal, as appropriate for the timing of the request.
- C. Substitution requests shall include a red-lined specification section and sufficient data for direct side-by-side, point by point comparison of proposed item to specified item. Substitution may include samples, test data, shop drawings, list of similar successful project, summary of features or characteristics, identification of recycled components, or other information as may be required to evaluate the proposed product.
 - 1. Burden of proof of merit of requested substitution is the sole responsibility of the submitter and subject to provisions of the Contract Documents.
 - 2. Insufficient data, vagueness, or inadequate warranty may be cause for disapproval or rejection of request. Architect's re-decision for approval may be possible if additional data presents itself.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: Substitution request will be received and considered when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.
1. Proposed changes are in keeping with the general intent of Contract Documents.
 2. The request is timely, fully documented and properly submitted.
 3. Extensive revisions to Contract Documents are not required.
 4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
 5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 6. The specified item is no longer available, or the indicated manufacturers (or successors) are no longer in business. The request will not be considered if the product or method can not be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 7. As-built conditions differ from the design conditions, and are not correctable.
 8. The specified product or method of construction cannot receive approval by a governing authority.
 9. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
 10. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the contractor certifies that the substitution will overcome the incompatibility.
 11. The specified product or method of construction cannot be coordinated with other materials, and where the contractor demonstrates and certifies that the proposed substitution can be coordinated.
 12. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the contractor certifies that the proposed substitution provide the required warranty.
 13. Other special cases will be entertained by the Architect and the Owner on a case-by-case basis.
- B. The reviewer's general attitude will be:
1. The reviewer should not be responsible to complete the submittal i.e.: Select from options, choose between models or lines of products.
 2. The reviewer should not be required to seek information from manufacturer's literature or other sources not included with the submittal.
 3. The product must be equal or better in those features and performance which the job requires and those which the specified product will provide.

4. Review is complete when, in the reviewer's opinion, significant deficiency(ies) are established. In such case, review of data covering other points of the specification is not required.
- C. The reviewer will note approval of the request only by issuing a Request for Proposal.
- D. Owner Review: Substitutions may be submitted to the Owner for review, and the Owner may act as it deems in its best interest waiving or maintaining requirements of the Contract Documents.
- E. Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 2513

REQUEST FOR SUBSTITUTION

Substitution Request Number _____

PROJECT: _____ DATE: _____

DATE REQUEST MUST BE ANSWERED TO MAINTAIN SCHEDULE: _____
Require after NTP issued

SPECIFICATION SECTION: _____ ARTICLE/PARAGRAPH _____

DRAWING NUMBER/DETAIL NUMBER:

SPECIFIED MANUFACTURER: _____

SPECIFIED MODEL NO: _____

PROPOSED MANUFACTURER: _____

PROPOSED MODEL NO: _____

REASON(S) FOR NOT PROVIDIING SPECIFIED ITEM: _____

Attach product description, drawings, photographs, performance and test data, samples, and other information necessary for side-by-side, point by point evaluation. Fill in all blanks.

A. Does the requested substitution affect dimensions, locations, or configurations?
No _____ Yes _____
Explain (Attach drawings if necessary): _____

B. List all deviations from the specified item: _____

C. Will the Contractor pay for any changes to the building design, including engineering and detailing costs caused by the approval?
No _____ Yes _____
Explain (If no, and describe modifications required to install or accommodate the requested change): _____

D. Will approval affect the work of other trades, including the Construction Schedule?

No _____ Yes _____

Explain (If yes): _____

E. Manufacturer's guarantees of the proposed and specified items are:

Same _____ Different _____

Explain (if different): _____

F. Does the proposed item meet all applicable codes, ordinances and regulations for this specific application?

No _____ Yes _____

Explain (If no): _____

G. Has proposed item been used locally in similar applications?

No _____ Yes _____

Explain (Give nearest Location): _____

H. Will maintenance and service parts be locally available for the requested item?

No _____ Yes _____

Explain (If no. Give nearest location): _____

I. Will the requested item require waiving of any qualifications or other requirements?

No _____ Yes _____

Explain (If yes): _____

J. Are there any license fees or royalties associated with the requested substitution?

No _____ Yes _____

Explain (If yes): _____

- K. If approved, will the Owner receive a credit for the proposed alternate material?
No _____ Yes _____
Explain (If no): _____

- L. Does the proposed alternate material meet the same applicable standards (ASTM, ANSI, UL, FS.) as the specified item?
No _____ Yes _____
Explain (If no. Attach drawings if necessary): _____

- M. Identify the recycled materials or components, or features that lead to the claims to being "Green": _____

- N. Has the required line-by-line, point by point comparison been included?
No _____ Yes _____
Explain (If no): _____

The undersigned will pay for the Designer's review time, and for changes to the building design, including review, re-design, engineering, drawings and other costs caused by the requested substitution.

_____ Signature
_____ Print

The following Purchase Order or billing number is to be used for billing the Contractor for costs incurred in evaluating, and if applicable, accommodating the requested substitution.

The Architect will not be required to prove any product is not equal or suitable to the Project.

CERTIFICATION OF EQUAL PERFORMANCE AND
ASSUMPTION OF EQUAL LIABILITY FOR EQUAL
PERFORMANCE

Contractor certifies the substitution complies with the Contract Documents and has performed an investigation of the requested product in comparison with the specified product, reviewed the warranties as applicable and found them to be equal to or better than the specified warranties, and has compared the substitution with the Work for any coordination required with other products, assemblies, or equipment.

Signature shall be by person having authority to legally bind their firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

SUBMITTED BY: _____

Firm: _____

Address: _____

Signature: _____

Date: _____

FOR ARCHITECT'S USE:

Notations below shall have the same meaning as the Architect's Submittal Action Stamp, defined in Division 01 Section, Submittal Procedures:

Not Acceptable _____
No Exceptions Taken _____

By: _____

Date: _____

SECTION 01 2600
CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Everyone realizes the construction schedule is very short. Every effort to expedite CO requests will be accommodated, but delays may occur. Just be prepared for timing issues for contract changes.

1.2 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, on AIA Document G710, Architect's Supplemental Instructions.

1.3 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 10 Days, or sooner if required to maintain Project Schedule, after receipt of Proposal Request, submit an estimate of cost necessary to execute the change to the Architect for review.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
 - 1. 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 line item breakdown of all associated costs.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Division 01 Section, Product Requirements if the proposed change requires substitution of one product or system for product or system specified.
- C. Proposal Request Form: AIA Document G709 for Change Order Proposal Requests.

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or other Owner approved form.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Document instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Document 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. 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 01 2600

SECTION 01 2900
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section specifies administrative and procedural requirements governing the Contractor's applications for payment.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including:
 - a. Contractor's Construction Schedule
 - b. Application for Payment forms with Continuation Sheets
 - c. List of sub contractors
 - d. List of Products
 - e. List of principal suppliers and fabricators
 - f. Submittals Schedule
2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section, for each branch.

1. Include the following Project identification on the Schedule of Values:
 - a. Owner's Name
 - b. Project name and location
 - c. Name of Architect
 - d. Architect's project number
 - e. Contractor's name and address
 - f. Date of submittal
2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of payment requirements and progress reports. Break principal subcontract amounts of more than \$8, 000.00 down into multiple line items.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment-Application Times: The date for payment applications will be established at the Pre Construction Meeting.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors
 2. List of principal suppliers and fabricators
 3. Schedule of Values
 4. Contractor's Construction Schedule (preliminary if not final)
 5. Products list
 6. Submittals Schedule (preliminary if not final)
 7. List of Contractor's staff assignments
 8. List of Contractor's principal consultants
 9. Copies of building permits
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work
 11. Initial progress report
 12. Report of preconstruction conference
 13. Certificates of insurance and insurance policies
 14. Performance and payment bonds
 15. Data needed to acquire Owner's insurance
 16. Initial settlement survey and damage report if required
- G. Application for Payment at Substantial Completion:
1. Application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall proceed or coincide with this application include:
 - a. Occupancy permits and similar approvals
 - b. Warranties (guarantees) and Maintenance agreements
 - c. Test, adjust, and balance records
 - d. Maintenance instructions
 - e. Startup performance reports
 - f. Changeover information related to Owner's occupancy, use, operation, and maintenance
 - g. Final cleaning
 - h. Application for reduction of retainage and consent of surety
 - i. Advice on shifting insurance coverages
 - j. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion
- H. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after the Date of Substantial Completion
3. Ensure that unsettled claims will be settled
4. Transmittal of required Project construction records to the Owner
5. Certified property survey
6. Proof that taxes, fees, and similar obligations were paid
7. Removal of temporary facilities and services
8. Removal of surplus materials, rubbish, and similar elements
9. Change of door locks to Owner's access
10. Final, liquidated damages settlement statement.
11. Verification from all Building Department(s) indicating that permits are closed out

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

SECTION 01 3100
PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for:
 - 1. Pre-Construction Conference
 - 2. Pre-Installation Conferences
 - 3. Progress Meetings
- B. The Architect will preside at all meetings attended by himself or his representative.
- C. All construction team members attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
 - 1. Consider each party's professional judgment, as advanced in the interest of successful completion of the work.

1.2 PRE-CONSTRUCTION CONFERENCE

- A. Schedule a pre-construction conference within 5 days after receipt of the executed Agreement.
- B. Location: At the Site of the first phase. No other pre-construction conference will be required.
- C. Attendees. Attending persons shall be familiar with and authorized to conclude matters relating to the Work.
 - 1. Owner or Owner's representative
 - 2. Architect
 - 3. Representation by invited consultants
 - 4. Contractor
 - 5. Contractor's Superintendent
 - 6. Others as directed by the Owner
 - 7. Major subcontractors and material suppliers
 - 8. Others as directed by Contractor
- D. Suggested Agenda (Major topics):
 - 1. Introductions and attendance list
 - 2. Notice to Proceed issued
 - 3. Date of Substantial Completion
 - 4. Critical Work sequencing
 - 5. Designation of responsible personnel
 - 6. Procedures for processing field decisions and Change Orders
 - 7. Procedures for processing Applications for Payment
 - 8. Use of premises
 - 9. Owner's use of premises requirements
 - 10. Submittal schedule and procedures
 - 11. Record documents
 - 12. Office, Work and staging areas

13. Delivery procedures
14. Safety
15. Security
16. Salvage items
17. Housekeeping
18. Working hours
19. Walkthrough of Site for pre-existing conditions
20. Crisis prevention

1.3 PRE-INSTALLATION CONFERENCES

- A. Conduct pre-installation conferences at the Site before each construction activity where such meeting is necessary to explain/coordinate any Drawing issues.

1.4 PROGRESS MEETINGS

- A. Conduct progress meetings at the Site weekly. Establish the date and time at the Pre-Construction Meeting.
- B. Attendees:
 1. Owner's representative
 2. Architect's representative
 3. Design consultants as necessary
 4. Contractor's superintendent
 5. Others as requested by contractor
- C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting within three days of meeting.
 1. Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

1.5 COORDINATION AND SPECIALLY CALLED MEETINGS

- A. Coordination meetings and specially called meetings may be called throughout the progress of the Work in the absence of the Architect.
 1. Prepare meeting agenda
 2. Record meeting minutes; include significant proceedings and decisions
 3. Reproduce and distribute copies of minutes within three days after each meeting
 - a. To participants in the meeting
 - b. To parties affected by decisions made at the meeting
 - c. To Owner and Architect

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 3100

SECTION 01 3113
PROJECT COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
 - 1. Coordination
 - 2. Administrative and supervisory personnel
 - 3. General installation provisions
 - 4. Cleaning and protection
 - 5. Request for Interpretations (RFI'S)
- B. Coordination meetings and pre-installation conferences are included in Division 01 Section, Project Meetings.
- C. Requirements for the Construction Schedule are included in Division 01 Section, Submittal Procedures.

1.2 COORDINATION

- A. Coordinate construction activities included under various Sections of the Project Manual to assure efficient and orderly installation of each portion of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for installation, connection, and operation.
 - 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in sequence to obtain required results.
 - 2. Coordinate requests for substitutions under requirements of Division 01, Section, Product Substitution Procedures, to assure compatibility of space, operating elements, and effect on work of other sections.
 - 3. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 - 4. Make adequate provisions to accommodate items scheduled for later installation.
 - 5. Contact local utilities 48 hours prior to commencement of any work to locate or verify location of existing below grade utilities. Repair any damage to utilities damaged during Work.
- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner where coordination is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and

ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules
2. Installation and removal of temporary facilities
3. Delivery and processing of submittals
4. Progress meetings
5. Pre-Installation conferences
6. Project Close-out activities

1.3 SUBMITTALS

A. Staff Names: At Initial Application for Payment, submit a list of the principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

1. Post copies of the list in the temporary field office and each temporary telephone.

1.4 REQUESTS FOR INTERPRETATION (RFI)

A. Procedure: On discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meetings.

1. Contractor to initiate all RFIs. RFIs submitted by entities other than Contractor will be returned with no response.
2. Frivolous RFIs: Review Contract Documents prior to issuing an RFI. If the information is in the Contract Documents a charge for the Architects review time may be imposed through change orders.

B. Content:

1. Project name
2. Date
3. Name of Contractor
4. Name of Architect
5. RFI number, numbered sequentially
6. Specification Section number and title and related paragraphs
7. Drawing number and detail references
8. Field dimensions and conditions
9. Contractor's suggested solution. State any impacts to the Contract Time or the Contract Sum.
10. Contractor's signature.
11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

C. RFI Form: Submit on form agreed upon at the Pre-construction Meeting.

1. Format: electronic

- D. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow two working days for Architect's response. RFIs received after 2:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals
 - b. Requests for approval of substitutions
 - c. Requests for coordination information already indicated in the Contract Documents
 - d. Requests for adjustments in the Contract Time or the Contract Sum
 - e. Requests for interpretation of Architect's actions on submittals
 - f. Incomplete RFIs or RFIs with numerous errors
 - g. Requests that do not ask a question
 2. Architect's action may include a request for additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or Sum may be eligible for a Change Proposal.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly and as requested by Architect.
1. Project name
 2. Name and address of Contractor
 3. Name and address of Architect
 4. RFI number including RFIs that were dropped and not submitted
 5. RFI description
 6. Date the RFI was submitted
 7. Date Architect's response was received
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.
- B. Manufacturer's Instructions: Comply with manufacturer's instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

- D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed work for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.
- J. Restore work and materials that become damaged during construction to original condition or replace with new materials.

3.2 CLEANING AND PROTECTION

- A. Clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration before or at the Date of Substantial Completion.
- B. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise construction activities 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. Where applicable, such exposures include, but are not limited to, the following:
 - 1. Excessive static or dynamic loading
 - 2. Excessive internal or external pressures
 - 3. Excessively high or low temperatures
 - 4. Thermal shock
 - 5. Excessively high or low humidity
 - 6. Air contamination or pollution
 - 7. Water or ice
 - 8. Solvents
 - 9. Chemicals
 - 10. Light
 - 11. Radiation
 - 12. Puncture
 - 13. Abrasion
 - 14. Heavy traffic
 - 15. Soiling, staining and corrosion
 - 16. Bacteria

17. Rodent and insect infestation
 18. Combustion
 19. Electrical current
 20. High speed operation
 21. Improper lubrication
 22. Unusual wear or other misuse
 23. Contact between incompatible materials
 24. Destructive testing
 25. Misalignment
 26. Excessive weathering
 27. Unprotected storage
 28. Improper shipping or handling
 29. Theft
 30. Vandalism
 31. Mold
 32. Mildew
- D. Refer to Division 01 Section, Construction Cleaning for additional construction cleaning requirements.

END OF SECTION 01 3113

SECTION 01 3233
PRE-CONSTRUCTION VIDEO RECORDING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes construction video recordings.

1.2 SUBMITTALS

- A. Two standard size DVD videos in Microsoft viewer format of the entire Site prior to the commencement of any work.

1.3 QUALITY ASSURANCE

- A. Video Recordings:
1. Format in latest release of Windows Media Player.
 2. Record the DVD prior to the commencement of any work.
 3. Architect shall review DVD prior to the commencement of construction activity.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION VIDEOS

- A. Before starting Work, take videos of the site and surrounding properties from different points of view as selected by the Architect and Owner's Representative. Record pre-existing conditions of the building, site, and abutting properties obtained from several perspectives. Provide narrative describing the vantage point and area being photographed.
- B. Video in sufficient length and detail to show the following:
1. Existing conditions and improvements adjacent to the property
 2. Existing conditions on the interior prior to any demolition or renovation activity.
 3. All locations at the areas where the others will occupy adjacent structures and where the construction limits have been established.
 4. Staging area and pathway to the Work area.
 5. Other View points as requested by Architect.
- C. The architect reserves the right to request additional videos for the duration of the Project.

END OF SECTION 01 3233

SECTION 01 3300 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for submittals required for:
 - 1. Construction Schedule
 - 2. Submittal Schedule
 - 3. Shop Drawings
 - 4. Product Data
 - 5. Samples
- B. Refer to Division 01 Section, Contract Closeout for closeout submittal requirements.

1.2 DEFINITIONS

- A. Coordination Drawings: Drawings showing relationship and integration of different elements requiring coordination during installation within provided space.

1.3 SUBMITTAL PROCEDURES

- A. Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal in such a sequence as to cause no delay in the Work.
 - 1. Partial submittals will not be accepted without written permission.
 - 2. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 3. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - b. Approval of shop drawings requiring color selection shall be withheld until all submittals requiring color selection have been received and with adequate time allowed for Owner and Architect Review and selection.
 - 4. Submit only product pages that are pertinent; mark each copy of standard printed data to identify pertinent products. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
 - 5. Use a contrasting color of blue, green, or red for all notations in submittals. A yellow or orange highlighter will not be accepted.
 - 6. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.

- a. Submittals received after 2:00 PM will be logged in as being received the next business day.
 - b. Allow 4 calendar days from date of receipt of submittal by Architect for initial review. Allow 7 calendar days from date of receipt by Architect for Structural, Electrical, Mechanical, and Plumbing submittals. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will issue written notification when a submittal being processed must be delayed for coordination.
 - c. If an intermediate submittal is necessary, process the same as the initial submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals in advance of the Work to permit processing.
 - e. All submittals shall be submitted within 10 days of the Notice to Proceed. Notify Architect in writing of and submittal requiring additional preparation time.
 - f. Completeness of Submittal: Submittals must be submitted as a complete section. Prior to submission for approval, each submittal shall be checked for inclusion of all items stated in the specifications and each submittal shall be stamped with the Contractor's approval. Submittals which are grossly incomplete, or which indicate no attempt at conformance with the Contract Documents shall not be submitted for review. Incomplete submittals will be returned to the Contractor without review unless the incompleteness is fully explained in the letter of transmittal. The submittal must include sufficient detail to be readily understood, and shall be appropriately referenced to Drawing details and specification articles and paragraphs.
 - g. No reproduction of Contract Documents will be acceptable as submittals.
7. If the product is not as specified or approved by Addenda, it will be rejected by the Architect. Do not make submittals if the product manufacturer is not specified or listed in the Addenda.
 8. Schedule will not be extended for improper submittals.
- B. Review shop drawings, samples, and other submittals and submit them to the Architect with a letter of transmittal giving approval, comments, and suggestions. Each transmittal shall include the following information:
1. Date Submitted
 2. Project title and number
 3. Contractor's name and address
 4. Identification by Specification Section and quantity submitted for each submittal including name of subcontractors, manufacturer, or supplier
 5. Notification of deviations from the Contract Documents for each submittal
 6. Stamp, initials, and approval prior to submitting to the Architect. If submittals are not stamped and approved they will be sent back not reviewed.

7. All comments, corrections, or other information on submittals generated by Contractor's review shall be marked in green ink so as to clearly identify the initiator of the marks
- C. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on submittal cover sheet to record Contractor's review and approval markings and action taken by Architect.
 - a. If adequate space is not available on cover sheet, submittal may be returned not reviewed
 3. Include the following information on label for processing and recording action taken:
 - a. Project name
 - b. Date
 - c. Name and address of Architect
 - d. Name and address of contractor
 - e. Name and address of subcontractor
 - f. Name and address of supplier
 - g. Name of manufacturer
 - h. Submittal Number or other unique identifier, including revision identifier
 - 1) The Submittal Number shall consist of the applicable specification section number plus a suffix number numbered consecutively starting with the number 001. The form of Submittal Numbers shall be as follows: XX XXXXX - XXX (Example: 09 9000 -001). Re-submittal Submittal Numbers shall consist of the previously used Submittal Number and suffix plus an alphanumeric suffix consecutively from the letter 'a' (Example: First re-submittal: 09 9000-001a; Second re-submittal: 09 9000-001b).
 - i. Number and title of appropriate Specification Section
 - j. Drawing number and detail references, as appropriate
 - k. Location(s) where product is to be installed, as appropriate
 - l. Other necessary identification
 4. Provide Identifier number on the cover sheet for each individual item within submittal
- D. Deviations: Specifically identify deviations from the Contract Documents on submittals.
- E. Submittal Transmittal: Package each submittal for transmittal and handling. Transmit each submittal from using a transmittal form. At time of submission, submit one (1) copy to the Owner. Submittals received from sources other than the Contractor will be returned without action.

1. On the transmittal, record relevant information and requests for data. Include certification that information complies with the Contract Documents.
- F. Use only final submittals with marks and signatures showing action taken, for construction purposes.
 1. One set of shop drawings marked by Architect "REVIEWED " or "FURNISH AS CORRECTED" be filed on the project site at all times. No installation of equipment, materials, or products is to be incorporated into the Project until shop drawings marked by Architect "REVIEWED " or "FURNISH AS CORRECTED" have been received on the Project.
- G. Distribute copies of submittals to entities requiring information. One complete copy shall be kept on file at the Site at all times.

PART 2 - PRODUCTS

2.1 INFORMATIONAL SUBMITTALS

- A. General
 1. Prepare and submit Informational Submittals required by other specification sections.
 2. Certificates and Certifications: Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Construction Schedule
 1. Linear bar chart time control schedule
 - a. Work overtime, nights, and weekends, as necessary to maintain schedule.
 - b. Overtime, night, and weekend work will be at no additional cost to the Owner.
 - c. Expedite approvals and deliveries of material so as not to delay job progress.
 2. Update Construction Schedule reflecting revised schedule and progress meeting results.
 3. Construction Schedule shall be updated monthly and submitted at least 2 days prior to the monthly progress meeting.
- C. Subcontractors and Material Men: Provide a schedule of subcontractors and material men who will supply labor or materials for Work. Submit within 30 days of Notice to Proceed.
 1. Include company name, contact name, address, phone number, and function for Work.
- D. Schedule of Values
 1. Prepare and submit a Schedule of Values for approval within 7 days after Notice to Proceed. The Schedule of Values shall consist of a breakdown of the contract sum showing the various items of the Work, divided so as to facilitate the approval of payments for Work completed. The Schedule

of Values shall be prepared on AIA Document G702 and Continuation Sheet G703, showing the breakdown of items of Work and supported by such data to substantiate its correctness.

2. The contract breakdown shall be the same form as that to be used in submitting request for payments. Each item of work shall have indicated a separate cost for labor and material.
3. Schedule of Values shall be coordinated with the Construction Schedule such that the percentages of Work completed relates to the values for the Work shown on the Request for Payments.
4. At the beginning of the Project prepare a schedule of monthly progress payments showing the anticipated amount at each requested payment.

E. Certificates:

1. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
2. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
3. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
4. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

F. Reports:

1. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
2. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. 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.

2.2 ACTION SUBMITTALS

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

B. Product Data

1. Manufacturer's standard published data consisting of illustrations, schedules, performance charts, brochures, diagrams, and other information furnished to illustrate a material, product, or system for some portion of the Work.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Written recommendations
 - b. Product specifications
 - c. Standard color charts

- d. Catalog cuts
 - e. Wiring diagrams showing factory-installed wiring
 - f. Operational range diagrams
 - g. Mill reports
 - h. Standard product operation and maintenance manuals
 - i. Compliance with specified referenced standards
 - j. Testing by recognized testing agency
 - k. Application of testing agency labels and seals
 - l. Note on submitted Product Data manufacturer's recommended variances from the Contract Documents
- C. Shop Drawings
- 1. Drawings, diagrams illustrations, schedules, performance charts, brochures, and other data which are prepared to illustrate some portion of the Work.
 - 2. Advertising brochures will not be accepted as shop drawings
 - 3. Erection and setting drawings as referred to in these Specifications will be considered as shop drawings and shall be submitted along with detailed Shop Drawings
 - 4. Where schedules are required to indicate locations, submit as part of the shop drawing package for that item
 - 5. Shop drawings and schedules shall repeat the identification shown in the Contract Documents
 - 6. Include the following information, as applicable:
 - a. Dimensions
 - b. Identification of products
 - c. Fabrication drawings
 - d. Roughing-in and setting diagrams
 - e. Shopwork manufacturing instructions
 - f. Templates and patterns
 - g. Schedules
 - h. Design calculations
 - i. Compliance with specified standards
 - j. Notation of coordination requirements
 - k. Notation of dimensions established by field measurement
 - l. Relationship to adjoining construction clearly indicated
 - m. Seal and signature of professional engineer if specified
 - n. Wiring Diagrams: Show field-installed wiring, including power, signal, and control wiring. Differentiate between manufacturer-installed and field-installed wiring
- D. Samples
- 1. Submit three samples, or more if requested by Architect for color boards, to illustrate materials or workmanship, colors, and textures, and establish standards by which the Work will be judged.
 - 2. Approving and submitting samples, represents that materials, catalog numbers, delivery time, and similar data, has been verified and coordinated with the requirements of the Work and the Contract Documents.

3. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations. Failure of the Contractor to submit a sample range shall be deemed by the Architect and Owner to represent that the final product shall have no variation with regard to color, pattern, texture or other characteristics inherent in the material or product represented. Should the case arise that installed products exhibit a range/variation not demonstrated in the submitted samples, the acceptable range of installed items shall be as established by the Architect and it shall be the responsibility of the Contractor to correct or replace non-conforming items.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
 - c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
4. Resubmit the required number of correct or new samples until approved. Direct specific attention in writing or on resubmitted samples to revisions other than the changes requested by the Architect on previous submissions.
5. The Architect will review samples only for conformance with the design concept of the Project and with the information given in the Contract Documents. The Architect's approval of a separate item shall not indicate approval of an assembly in which the item functions.
6. The Architect's action shall not relieve the contractor of responsibility for deviations from the requirements of the Contract Documents unless the contractor has informed the Architect in writing of the deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's action relieve the Contractor from responsibility for errors or omissions in the samples.
7. Unless otherwise specified, samples shall be of adequate size to show function, equality, type, color, range, finish, and texture of material. When requested, supply technical information and certified test data.
 - a. Each sample shall be labeled, bearing material name and quality, the Contractor's name, date, project name, and other pertinent data.
 - b. Transportation charges to and from the Architect's office must be prepaid on samples forwarded. Approved samples shall be retained by the Architect until the Work for which they were submitted has been accepted.

8. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
9. Materials shall not be ordered until approval is received. Materials shall be furnished, equal in every respect to approved samples. Where color or shade cannot be guaranteed, the maximum deviation shall be indicated by the manufacturer. Work shall be in accordance with the approved samples.
10. Field Samples specified in individual Sections are special types of Samples.
 - a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

2.3 SUBMITTAL PREPARATION

- A. Provide permanent marking on each submittal to identify project, date, contractor, subcontractor, submittal name, and similar information to distinguish it from other submittals. Show executed review and approval marking and provide space for Architect's "Action" marking. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through the Contractor will be returned not reviewed.
- B. By approving and submitting shop drawings, the contractor represents that he has verified field measurements, field construction criteria, materials, catalog numbers, and similar data, and that he has coordinated each shop drawing with the requirements of the Work and of the Contract Documents prior to submitting to the Architect.
- C. Make corrections required by the Architect and shall resubmit the required number of corrected copies until approved. The contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections requested by the Architect on previous submissions.
- D. Electronic Submittal Administrative Requirements
 1. Identify and incorporate information in each electronic submittal file as follows:
 - a. Assemble complete submittal package into a single indexed and bookmarked file with links enabling navigation to each item.
 - b. Scanned using 300 dpi resolution
 - c. Name file with submittal number identifier described in Part 1 Article – Submittal Procedures
 - d. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by all reviewers.
 - e. Samples will require a physical delivery with transmittal. Sample approval may be electronic, depending on submittal requirements of that section.

2. Post electronic submittals as PDF electronic files directly to designated FTP site specifically established for Project. Notify Architect via email when shop drawing files have been posted.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. Provide electronic submittals for:
 - 1) Product Data
 - 2) Shop Drawings
 - 3) Project Schedule
 - 4) Sustainable Construction Program Submittals
 - 5) Delegated Design Services
3. Certificates and Certifications Submittals: Provide 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.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates

2.4 OPERATION AND MAINTENANCE DATA

- A. Typed or printed instruction covering the operation and maintenance of each item of equipment furnished, shall be prepared and place in a notebook and submitted for Architect's review and transmittance to the Owner. The instructions, as applicable, shall include the following:
 1. Any schematic piping and wiring diagrams
 2. Any valve charts and schedules
 3. Guides for troubleshooting
 4. Pertinent diagrams of equipment with main parts identification
 5. Manufacturer's data on all equipment
 6. Operating and maintenance instructions for all equipment
 7. Manufacturer's parts list
 8. Any testing procedures for operating tests
 - a. Three copies of the above instruction books shall be furnished prior to Final Payment. The books shall describe the information to be covered clearly and in detail and shall be in form and content satisfactory to the Owner.
- B. Instruct the Owner's appointed personnel in the proper use, care and emergency repair of all equipment installed prior to Final Payment. Call particular attention to safety measures that should be followed.

2.5 SAFETY DATA SHEETS

- A. In compliance with the OSHA Hazard Communication Standard, have on Site, SDS (Safety Data Sheets, Formally MSDS) for all products classified as hazardous that will be furnished, used, or stored on the jobsite during the Project.
 1. SDS are not part of the shop drawing review process.
 2. SDS submitted as part of a submittal will be considered an informational submittal and may or may not be returned.

3. At completion of the Work provide the Owner with the SDS for the hazardous products used on the Project during construction.

PART 3 - EXECUTION

3.1 GENERAL

- A. Do not permit the use of unmarked submittals in connection with construction activities

3.2 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp and sign before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, specification section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.3 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements.
- C. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 1. Final Unrestricted Release: Work may proceed, provided it complies with contract documents, when submittal is returned with the following:
 - a. Marking: "Reviewed"
 2. Final-But Restricted Release: Work may proceed, provided it complies with notations and corrections on submittal and with contract documents, when submittal is returned with the following:
 - a. Marking: "Furnished as Corrected"
 3. Returned for Resubmittal: Do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connection with performance of the work:
 - a. Marking: "Revise and Resubmit"
 - b. Marking: "Rejected"
 - c. Marking: "Submit Specified Item"
 4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required" or similar marking.

5. Corrected Copies: Work may proceed but resubmittal of corrected submittals is required. Resubmit corrected copies incorporating all review comments throughout the entire submittal.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents will not be logged in and will not be reviewed.
- F. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
- G. Corrections or comments made on Shop Drawings during review do not relieve the Contractor from compliance with the Contract Documents. This check is only for review of general conformance with the design concept and general compliance with information given in Contract Documents. The Contractor is responsible for confirming and correlating all guarantees, dimensions, selecting fabricating process and techniques of construction, furnishing specified finishes, and performing his work in a safe manner.
- H. The Architect's review of Shop Drawings shall not relieve the contractor of responsibility for any deviation from the requirements or the Contract Documents unless the Architect has been informed in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's action relieve responsibility for errors or omissions in the shop drawings.
 1. The Architect's review of a separate item shall not indicate review of an assembly in which the item functions.
- I. Notations and remarks added to Shop Drawings by the Architect are to insure compliance with the Contract Documents and do not imply a requested or approved change to contract cost.
- J. Should deviations, discrepancies, or conflicts between submittals and Contract Documents be discovered, either prior to or after review, Contract Documents shall control.

END OF SECTION 01 3300

SECTION 01 4200
REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes basic definitions of words and terms used within the Project Manual.

1.2 DEFINITIONS

- A. Approved: The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the AIA Document A201.
- B. Contractor: The term "contractor," "Contractor," "construction manager," or "Construction Manager " describes to entity who has a signed agreement with the Owner as the primary entity contracted to perform the Work. The terms are used interchangeably within this document.
- C. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect/Engineer, requested by the Architect/Engineer, and similar phrases.
- D. Florida Building Code (FBC): Where the term or acronym is used it will mean the current edition of the Florida Building Code with all applicable revisions adopted by the authorities having jurisdictions at the location of the Project.
- E. Furnish: The term "furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- F. Indicated: The term "indicated" refers to graphic representations, notes, or schedules on the Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted", "scheduled," and "specified" are used to help the user locate the reference. Location is not limited.
- G. Install: The term "install" describes operations at the Project site including the actual unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, who performs a particular activity including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - 1. The term "experienced," when used with the term "installer," means having successfully completed a minimum of 5 previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
 - 2. Trades: Using terms such a "carpentry" does not imply that certain construction activities must be performed by accredited or unionized

individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

3. Assigning Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by specialties who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

- a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

- I. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.
- J. Project Site, or Site, is the space available to the Contractor for performing installation activities, either exclusively or in conjunction with others performing work as part of the Project.
- K. Provide: The term "provide" means to furnish and install, connect, and test, complete and ready for the intended use.
- L. Regulations: The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the industry that control performance of the Work.
- M. Testing Agencies: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's "MasterFormat" system.
 1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: These Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as

plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.

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

1.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents, except comply with different dates as referenced in the FBC.
- C. Conflicting Requirements: Where compliance with 2 or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different but apparently equal to the Architect for a decision before proceeding.
 1. 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 the requirements. Refer uncertainties to the Architect for a decision before proceeding.
- D. Copies of Standards: Each entity engaged in installation on the Project must be familiar with industry standards applicable to its installation activity. Copies of applicable standards are not bound with the Contract Documents.
 1. Where copies of standards are needed to perform a required installation activity, obtain copies directly from the publication source and make them available on request.
- E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Inc.'s "Encyclopedia of Associations," which is available in most libraries.

1.5 SUBMITTALS

- A. Permits, Licenses, and Certificates: For the 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary facilities and controls, including temporary utilities and support facilities
 - 1. All work under this Section must comply to the fullest extent possible with Divisions 2 through 49 of the Project Manual.

1.2 SUBMITTALS

- A. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within 5 days of the date established for commencement of the Work.
- B. Maintain reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities. Submit to Owner when requested.
- C. Traffic Coordination Plan: Submit a Traffic Coordination Plan within 15 days of the date established for commencement of work requiring review by Police, Fire Department, and Building Department.

1.3 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements
 - 2. Health and safety regulations
 - 3. Utility company regulations
 - 4. Police, Fire Department and Rescue Squad rules
 - 5. Environmental protection regulations
- B. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.4 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

- C. Do not interfere with normal use of roads in vicinity of project site except as authorized by authorities having jurisdiction.
- D. Use of permanent systems will be allowed.
 - 1. Replace burned out or defective lamps with in the contract areas and any spaces designated for contractor's use.
 - 2. Provide filters with MERV of 8 at each return air grill for the HVAC system used for temporary use during construction.

1.5 SPECIAL PRECAUTIONS AND REQUIREMENTS

- A. Do not interfere with normal use of existing active utility services, except as absolutely necessary to execute required work involving such services, and then only after proper arrangements have been made through the proper authority.
 - 1. Notify Owner 48 hours in advance of proposed interruption of service.
- B. Conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Where visible to the public provide new materials suitable for the use intended. Where not visible to the public, provide undamaged previously used materials, suitable for the use intended.
- B. Lumber and Plywood: Comply with requirements in Division 06 Section, Rough Carpentry
- C. Water: Potable
- D. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less

2.2 EQUIPMENT AND SERVICES

- A. General: Provide equipment suitable for intended use, new, unless acceptable to Architect
- B. Water Service:
 - 1. Provide temporary water service required for construction. Maintain service until directed to remove.
 - a. Provide backflow device per local regulations
- C. Electrical Service: Provided by Owner thru building's electrical service.
 - 1. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
 - 2. Provide artificial lighting for areas of Work when natural light is not adequate for work and for areas accessible to the public. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.

- D. Telephone Service: Mobile phones satisfy this requirement.
- E. Environmental Control: Coordinate with Owner's representative for HVAC scheduled timing.
 - 1. Temporary environmental controls, including heating, cooling, and dehumidification, may be required to maintain adequate environmental conditions to facilitate progress of Work.
 - a. Provide adequate forced ventilation of enclosed areas for curing installed materials, disperse humidity, and prevent hazardous accumulations of dust, fumes, vapors, or gas.
- F. Fire Extinguishers: Hand carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- G. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
 - 1. Service, clean, and maintain the temporary toilets in a sanitary way at all times, and maintain supply of toilet paper. Monitor daily.
- H. First Aid Supplies: Comply with governing regulations.

PART 3 - EXECUTION

3.1 GENERAL

- A. Use qualified personnel for installation of temporary facilities. Locate where they will serve the Project adequately and result in minimum interference with Work. Relocate and modify as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed.
- C. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manor. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the Site.
 - 1. Do not block or remove exit routes until equivalent, code compliant exit facilities are provided
- D. Maintain and operate systems to assure continuous service.
- E. Provide and maintain temporary site access driveways for vehicles and equipment. Remove when directed.
- F. Install temporary facilities with minimal disturbance to the environment

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of

the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.

1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Cost or use charges for temporary facilities, utilities and services are not chargeable to the Owner or Architect, and will not be accepted as a basis of claims for a Change Order. The cost for all temporary facilities, utilities and services are part of Base Bid.
 4. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose
- B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use. Provide water service if the utility company cannot immediately provide.
1. Sterilization: Sterilize temporary water piping prior to use
- C. Heating, Cooling, and Ventilation: Provide as 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.
- a. Coordinate with the Owner for HVAC shutdown and return air systems in Project work areas.
 - b. In addition to the demising wall installation, and providing air filtration specified, shutdown the return air systems in each area where Work activities are underway. Re-establish the return air systems as work is completed.
- D. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.

3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. No field office will be required. Use the interior of the building for limited storage and office space. All areas occupied by construction activities will be cleaned when complete, ready for Owner's use.
- B. Storage and Fabrication Sheds: Conex box on the site, location directed by Owner.
- C. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
 2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that

require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

4. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.

- a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F

- D. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

3.4 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

- B. Maintenance: Maintain facilities in operating condition until removal

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.
2. Protection: Maintain markers for underground lines. Protect from damage during excavation operations.
3. Protect floors with suitable coverings when necessary.
4. Maintain fire rated and smoke resistant integrity of building elements during operations. Restore assemblies behind removal operations. Provide temporary protection during any stoppage of Work.

- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when 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 the temporary facility. Replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of the Contractor.
2. Prior to Substantial Completion Inspection, remove temporary lamps and install new lamps.

END OF SECTION 01 5000

SECTION 01 5600
TEMPORARY BARRIERS AND ENCLOSURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
1. Facility installation protection
 2. Barricades, warning signs, lights

1.2 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:
1. Florida Building Code requirements
 2. Health and safety regulations
 3. Utility company regulations
 4. Police, Fire Department and Rescue Squad requirements
 5. Environmental protection regulations
- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Arrange for authorities having jurisdiction to inspect each disconnected utility. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHERS

- A. Refer to Division 01 Section, Temporary Facilities

PART 3 - EXECUTION

3.1 FACILITY INSTALLATION PROTECTION

- A. Temporary Fire Protection:
1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
- B. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.2 BARRICADES AND GUARD LIGHTS

- A. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
 1. Provide protective measures to provide free and safe passage of Owner's personnel, clients, and general public to occupied portions of the building.

END OF SECTION 01 5600

SECTION 01 6100
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selecting products, delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporation in the Work. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
- B. Materials: Products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
- C. Equipment: Products with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
- D. Substitutions: Proposed changes in products, materials, equipment, or methods of construction required by the Contract Documents.
 - 1. Substitutions requested during the bidding period, and accepted prior the award of the contract, are considered part of the Contract Documents and are not subject to requirements specified in this Section.
 - 2. Refer to Division 01 Section, Product Substitutions
- E. Basis of Design: Makes reference to a design intent. Additional manufacturers may be listed, but listing does not guarantee all of their products or their standard products will be equal or better to the Basis of Design.
 - 1. Equivalency is assumed when actual model numbers, system numbers or product numbers have been listed.
- F. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
- G. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.3 SUBMITTALS

- A. Provide additional copies of the SDS for products that may be chemically harmful. Retain a copy of SDS at Site.
 - 1. SDS submitted as part of a submittal will be considered an informational submittal and may or may not be returned.

1.4 QUALITY ASSURANCE

- A. All manufacturers for panel walls, exterior doors, roofing materials, skylights, windows, doors, shutters, louvers, structural components, and other products comprising of the building's envelope, whether or not listed or specified, shall

comply with Rule 9N-3 of the Florida Administrative Code and shall comply with the FBC.

1. If products listed are not approved, the manufacturer shall be responsible to obtain approvals in accordance with Rule 9N-3 of the Florida Administrative Code prior to submitting Product Data or Shop Drawings. If the product is not approved by the State, it will not be acceptable.
- B. To the fullest extent possible, provide products of the same kind, from a single source.
 1. Where additional amounts of a product, by nature of its application, are likely to be needed by the Owner at a later date for maintenance and repair or replacement work, provide a domestically produced product which is likely to be available to the Owner at such a later date.
- C. Compatibility of Options: Compatibility is a basic general requirement of product and material selections. Total compatibility among options is not assured by limitations within the Contract Documents, but must be provided. Where more than one choice is available as options, select an option which is compatible with other products and materials already selected.
- D. Do not proceed with the installation of any materials containing known hazardous materials without written permission of the Architect.
- E. Do not use material or equipment for any purpose other than that which it is designed or is specified.
 1. Do not use materials or equipment removed from existing premises, except as specifically permitted by the Contract Documents.
 2. Provide interchangeable components of the same manufacturer for similar components.
- F. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's nameplates or trademarks on exposed surfaces of products that will be exposed to review in occupied spaces or on the exterior.
- G. Options for selecting products are limited by Contract Documents and governing regulations, and are not controlled by industry traditions or procedures based on experience.
- H. Substitutions:
 1. The submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to the Project not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.
 2. If the use of a substitute product requires additional work or modifications, all such additional work, including utility modifications shall be at no additional cost to the Contract.

1.5 DELIVERY, STORAGE, AND HANDLING

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

- B. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with Work and site conditions.
 - 1. The Owner will not be responsible for deliveries related to the Project. The Owner will not sign for any deliveries.
 - 2. Inspect shipments on delivery for compliance with the Contract Documents.
 - 3. Do not accept delivery of damaged products.
- C. Allocate space for storage purposes. Additional off-site space is the responsibility of the Contractor.
 - 1. Maintain temperature and humidity within the ranges required by manufacturer unless more stringent requirements are stipulated in the Contract Documents.
 - 2. Arrange storage in a manner to provide easy access to maintain products and for pay request inspections.
 - 3. Store loose granular materials on solid flat surface in a well-drained area. Prevent mixing with foreign materials.
 - 4. Store materials in a manner that will not endanger Project structure.
 - 5. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
 - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 7. Do not allow storage of any materials within the drip line of trees that are scheduled to remain.
- D. Provide batteries for all items requiring batteries prior to the Date of Substantial Completion to demonstrate compliance with the Contract Documents.

1.6 WARRANTY

- 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 the Contractor of obligations under the requirements of the Contract Documents.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit draft for approval before final execution.
 - 1. Refer to individual sections for content requirements and requirements for submitting special warranties.
- C. Specific warranties or bonds called for in the Contract Documents, in addition to that falling under the general warranty, shall be furnished in accordance with the Contract Documents.
- D. Products provided for Work shall be warranted for a minimum period of one year and for longer periods, where specified, from the Date of Substantial Completion.
- E. Should defects develop in the Work within the specified period due to faults in products or workmanship, correct defective Work to comply with the Contract Documents.

- F. Warranty shall not apply to Work which has been abused, neglected, or improperly maintained by the owner or his successor in interest.
- G. In the event movement in the adjoining structure or components causes defects, the contractor responsible for the original installation of the adjoining structure or components shall provide such repair, replacement, or correction necessary to bring the equipment back into the same operating condition as approved at the Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. Provide products complying with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.
 - 1. Provide products with accessories, trim, finish, safety guards, and other devices and details needed for installation and the intended use and effect.
 - 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar applications.
 - 3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this Work by the Architect.
 - 4. Where Contract Documents are at variance with specific manufacturer's details and installation procedures, perform the more stringent requirement; should there be a conflict, consult with Architect for resolution prior to start of work.
- B. For products specified by naming one or more products or manufacturers and "or equal," select any one of the products or manufacturers named that comply with the Contract Documents.
 - 1. To propose a substitution, submit a request for any product or manufacturer not specifically named and obtained approval from Architect or Owner as outlined.
- C. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:
 - 1. Proprietary Specification Requirements: Where specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted after bid opening.
 - 2. Semi Proprietary Specification Requirements: Where specifications name two or more products or manufacturers, provide one of the products indicated. No substitutions will be permitted.
 - 3. Nonproprietary Specifications: When specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the contractor to use these products only, the contractor may propose any available product that complies with the Contract Documents. Comply with Division 01 Section, Product Substitutions to obtain for use of unnamed products.

4. Descriptive Specification Requirements: Where specifications describe a product or assembly, listing characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with the Contract Documents.
 5. Performance Specification Requirements: Where specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.
 6. Compliance with Standards, Codes, and Regulations: Where specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
 7. Visual Matching: Where specifications require matching an established sample, the Architect's decision will be final whether a proposed product matches satisfactorily.
 8. Visual Selection: Where a specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures ..." or similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.
- D. Availability of Specified Items:
1. Verify that specified items will be available in time for installation during orderly and timely progress of the Work.
 2. Notify Architect if specified item or items will not be available.
 3. Costs of delays because of non-availability of specified items, when such delays could have been avoided, will be back charged to the Contract.
- E. Where the questions of appearance, artistic effect, or harmony of design are concerned, the Architect reserves the right to refuse approval of substituted products proposed to be substituted for that specified, if in his opinion the item to be substituted is not harmonious to the finished effect and appearance desired, as portrayed in the Contract Documents. The Architect's refusal to approve, established by this paragraph, is final and not subject to arbitration.
- F. Products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product. Additional approved manufacturers will be issued by Addenda.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.
1. Where Contract Documents are at variance with specific manufacturer's details and installation procedures, perform the more stringent

requirement; should there be a conflict, consult with Architect for resolution prior to start of work.

- B. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at the Date of Substantial Completion.
- C. Tools requiring powder charges are permitted only during normal specified working hours.

3.2 PROTECTION

- A. Protect building elements and products when subject to damage. Repair damages as soon as practicable.

END OF SECTION 01 6100

SECTION 01 7143
CONSTRUCTION CLEANING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cleaning during and at completion of the Work

1.2 SAFETY REQUIREMENTS

A. Hazards Control

1. Store volatile wastes in covered metal containers, and remove from the premises daily.
2. Prevent accumulation of wastes, which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

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

1. Do not burn or bury rubbish and waste materials on Site.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
3. Do not dispose of wastes into streams or waterways.
4. Do not dispose of slurry, mortar, tile adhesive, floor leveler, dry wall mud, grout, or similar materials into sanitary drains.
5. Do not dispose of rinse water and resulting residues as a result of rinsing tools, buckets, and other construction materials into sanitary drains.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use only materials and methods recommended by manufacturer of material being cleaned.
- B. Use only materials that will not create hazards to health or property to the greatest extent possible, and which will not damage finished surfaces.

2.2 RUBBISH CONTAINER

- A. Provide dumpster type rubbish container with lid, sized adequate for the Project waste, debris, and rubbish for the life of the Project.
- B. Dispose of container contents weekly or at more frequent intervals if required by inadequate container capacity.

PART 3 - EXECUTION

3.1 CLEANING

- A. Execute periodic cleaning to keep the Work, the Site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations. Dispose at legal disposal sites away from Project.

- B. During the progress of the work, remove from the project daily all discarded food containers, paint materials containers, general trash, and other flammable items.
 - 1. Provide adequate ventilation during the use of volatile or noxious substances.
- C. Provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.
- D. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- E. Maintain adjacent roads free from the accumulation of mud, rocks, rubbish, litter and debris resulting from construction activities.
- F. The Owner reserves the right to provide cleaning services when clean-up has not been provided to the satisfaction of the Owner or the Owner's representative in accordance with the Conditions of the Contract. Cost of such cleaning will be charged to the Project and the Contract Sum adjusted by Change Order.

3.2 DUST CONTROL

- A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly coated surfaces.
- C. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

3.3 LIMITED ACCESS SPACES

- A. Remove debris and surface dust from limited access spaces, including plenums, shafts, chases, trenches, equipment vaults, manholes, attics, and similar spaces.

3.4 FINISHED SPACES

- A. The cleaning for building occupancy includes the following:
 - 1. Removal of trash and rubbish from spaces.
 - 2. Removing grease, mastic, adhesive, dust, dirt, stains, fingerprints, non-permanent labels and other foreign material from sight-exposed interior and exterior surfaces. Avoid disturbing natural weathering of exterior surfaces.
 - 3. Removing putty or sealant stains and paint from glass, and washing and polishing same without scratching. Cleaning materials and methods shall be as recommended by manufacturer in order to avoid scratching or scouring the special surfaces.
 - 4. Polishing glossy surfaces to a clear shine.
 - 5. Broom cleaning of the entire Work area with a commercial sweeping compound of composition suitable for use on floors being swept.
 - 6. Remove marks, stains, fingerprints, and other soils or other dirt from painted, decorated, and natural finished woodwork and other Work.
 - 7. Clean casework removing stains, paint, dirt and dust. Vacuum interiors.
 - 8. Remove spots, plaster, soil and paint from ceramic tile, marble, and other

- finished materials, wash or wipe clean.
 9. Clean interior and exterior transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 10. Restore reflective surfaces to original reflective condition.
 11. Vacuum carpeted and similar soft surfaces. Shampoo if required.
 12. Cleaning surfaces of equipment; removing excess grease and lubrication.
 13. Cleaning permanent filters of ventilating equipment and replacement of disposable filters when units have been operated during construction; in addition, cleaning of ducts, blowers, and coils when units have been operated without filters during construction.
 14. Cleaning light fixtures and lamps. Replace burned-out bulbs and defective and noisy starters in fluorescent and mercury vapor fixtures.
 15. Dusting of surfaces other than floors with clean rags.
 16. Removing waste, foreign matter, and debris from roofs, gutters, area ways, and drainage systems.
 17. Remove waste, debris, tools, construction equipment, and surplus materials from site. Clean grounds; removing stains, spills, and foreign substances from paved areas and sweeping clean. Rake cleaning of other exterior surfaces. Rake grounds which are neither planted nor paved to a smooth, even textured surface.
- B. Employ services of a janitorial service to clean all toilet fixtures and spaces to a sanitary condition, including stains from water exposure.
- C. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
- D. Conduct an inspection of sight exposed surfaces of the entire area to verify that the Work is clean prior to Owner occupancy.
1. Leave Project clean and ready for occupancy.
- E. Re-cleaning will not be required after the Work has been accepted unless further work, or completion of Punch List items, makes additional cleaning necessary.
- F. Prior to final acceptance, clean and renovate permanent facilities that have been used during the construction period.
1. Repair all damages to existing materials and finishes
 2. Replace air filters and clean inside of ductwork and housings
 3. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 4. Replace lamps that are burned out or noticeably dimmed by use during construction.

END OF SECTION 01 7143

SECTION 01 7329 CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for cutting into existing construction and subsequent patching required restoring surfaces to original condition.
 - 1. Execute cutting and patching required to perform work and to:
 - a. Make parts fit together as intended
 - b. Remove and replace defected work and work non conforming to the Contract Documents
 - c. Uncovering work to allow for observations where work has been covered prior to such observations
 - d. Cutting and patching of incidental work for individual sections
 - 2. Drilling for the installation of fasteners and similar operations is not considered to be cutting and patching.
- B. Related Requirements:
 - 1. Refer to specific sections for requirements and limitations applicable to cutting and patching individual portions of the work.
 - 2. Limitations on cutting structural members
 - 3. Limitations on cutting fire-rated or smoke-resistant assemblies
 - 4. Requirements of this section apply to mechanical and electrical installations
- C. Demolition of selected portions of the building for alterations is included in Division 02 Section, Selective Demolition.

1.2 DEFINITIONS

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

1.3 BUILDING MODIFICATIONS

- A. Provide necessary modifications to existing facilities and structures as indicated to accomplish the Work.
 - 1. Modifications include the removal of existing structure, termination and relocation of utilities, cutting, patching, cleaning, adjusting, refinishing, and incidental work required for the installation of new Work.
 - 2. Relocation of materials designated for Owner's salvage and materials to be stored and reinstalled
 - 3. Maintain daily occupancy functions during the progress of the Work. Coordinate Work to minimize inconveniences to the Owner's operation.
 - 4. Do not interrupted utilities without Owner's written permission.

1.4 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
- B. 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.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. For any change in materials, submit request for substitution under provisions of Division 01 Section, Product Substitution Procedures to Architect for consideration.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- B. After uncovering, inspect conditions affecting performance of work. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.2 GENERAL

- A. Execute cutting, fitting, and patching including excavation and fill, to complete work, and to:
 - 1. Fit the several parts together, to integrate with other work.
 - 2. Uncover work to install ill-timed work.
 - 3. Remove and replace defective and non-conforming work.
 - 4. Remove samples of installed work for testing.
 - 5. Provide openings in elements of work for penetrations of mechanical, electrical, or other work.

- B. Notify Owner 48 hours prior to any welding, torch cutting, burning, soldering, or other similar hot work.

3.3 PREPARATION

- A. Protect in-place construction during cutting and patching to prevent damage.
- B. Provide temporary support of work to be cut. Protect existing construction during cutting and patching.
- C. Take all precautions necessary to avoid cutting existing pipe, mechanical, and electrical service until provisions have been made to bypass them.
- D. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- F. Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

3.4 PERFORMANCE

- A. 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.
 - 2. Execute work by methods to avoid damage to other work, and which will provide proper surface to receive patching and finishing.
- B. Cutting: Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
 - 1. Cut rigid materials using masonry saw or core drill. Pneumatic hammer type tools are not allowed without prior approval. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Where utility services are required to be removed, relocated, or abandoned, by-pass services before cutting. Cut-off pipe or conduit below finished surfaces. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of insects, moisture or other foreign matter.
 - 4. Mechanical and Electrical Services: Cut off pipe and conduit in walls to be removed. Cap valve or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture, insects, or other foreign matter after cutting.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Restore work with new products in accordance with requirements of Contract Documents. Comply with specified tolerances.

1. Test and inspect patched areas after completion to demonstrate integrity of installation.
2. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Patch with durable seams that are as invisible as possible.
3. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.

END OF SECTION 01 7329

SECTION 01 7801
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: Contract closeout.
- B. The closeout process shall be fully documented by submission of the following:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operation and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Substantial Completion
 - 6. Final Acceptance
- C. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 49.
- D. Time of Closeout is directly related to the Date of Substantial Completion.

1.2 PRE CLOSEOUT

- A. Submit Project Closeout Manuals and Operation and Maintenance manuals for review. Show projected submittal date on Construction Schedule.
- B. Conduct Pre Substantial Completion Conference. Refer to Division 01 Section, Project Meetings.

1.3 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. Complete the following before requesting the Architect's inspection for certification of substantial completion.
 - 1. Advise Owner of pending insurance changeover requirements
 - 2. Submit specific warranties, workmanship and maintenance bonds, maintenance agreements, other agreements, final certifications and other required closeout documents.
 - 3. Obtain and submit release enabling Owner's full and unrestricted use of the Project and access to service and utilities, including occupancy permits, operating certificates, and other similar required releases.
 - 4. Deliver tools, spare parts, extra stocks of material and similar physical items to the Owner. Obtain receipts for deliveries.
 - 5. Make final changeover of locks and transmit keys to Owner and advise Owner's personnel of changeover in security provisions.
 - 6. Complete start-up testing of systems and instruction and training of Owner's operating/maintenance personnel. Discontinue and remove from project site temporary facilities and service, construction tools and facilities, mock-ups, and other construction elements.
 - 7. Written certification that the Work is pest and rodent free
 - 8. Complete final cleaning requirements as specified in Division 01 Section, Construction Cleaning.

1.4 SUBSTANTIAL COMPLETION

- A. When Work is believed to be substantially complete, submit the following:
 - 1. Application for payment showing 100% completion.
 - 2. A written notice that the Work is substantially complete.
 - 3. Surveys and Record Documents.
 - 4. Three sets each of Operation and Maintenance Manuals and Project Closeout Manuals
 - 5. Test, adjusting, balance records
 - 6. Remove any remaining temporary facilities from Site, along with mock-up, construction tools, and similar elements.
 - 7. Changeover information related to Owner's occupancy, use, operation, and maintenance.
- B. Corrections and Completions List:
 - 1. Prior to the Architects preparation of a Corrections and Completions List, prepare a punch list and submit to Architect.
 - 2. Inspect the Work as thoroughly as possible.
 - 3. The Architect will inspect the Work after items on the punch list have been completed. The Architect will then prepare the Corrections and Completions list for use to expedite completion of the Work.
- C. Within a reasonable time after receipt of such notice, Architect will schedule and make an inspection to determine the status of completion.
- D. Should Architect determine that the work is not substantially complete:
 - 1. Architect will return the Application for Payment.
 - 2. Architect will promptly notify the Contractor in writing, giving reasons why the Work is not substantially complete.
 - a. Remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Architect.
 - 3. Architect's re-inspect of Work. There will be only two Substantial Completion inspections by the Architect, all costs associated with additional inspections required to achieve the Certificate of Substantial Completion shall be deducted from the Contract amount by Change Order.
 - 4. The Architect will review the Closeout Documents and return them within 14 days for corrections.
- E. When the Architect finds that the Work is substantially complete, he will:
 - 1. Prepare a Certificate of Substantial Completion on AIA Form G704, accompanied by Contractor's Corrections and Completions List, amended by the Architect.
 - 2. Submit the Certificate of Substantial Completion to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.
- F. When the Work has been accepted as substantially complete the Contractor shall:
 - 1. Submit releases enabling Owner's full, unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating

certificates and similar releases.

2. Make the final change-over of locks and transmit the keys to the Owner. Advise the Owner's personnel of the change-over in security provisions.
3. Re-submit the adjusted Application for Payment.

G. All warranties commence on the Date of Substantial Completion.

1.5 PREREQUISITES TO FINAL INSPECTION

A. Complete the following before requesting the Architect's final inspection for certification of final acceptance, and final payment. List known exceptions, if any, in the request.

1. Final record drawings, maintenance manuals, damage or settlement survey, property survey, and all other similar and updated material.
2. Final pay request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
3. A copy of the final Corrections and Completions list stating that each item has been completed or otherwise resolved for acceptance.
4. Evidence of final, continuing insurance coverage complying with insurance requirements.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 - a. Demonstration and training videotapes when required by individual sections.

1.6 FINAL INSPECTION

- A. When Work is considered complete and above information has been submitted, submit a letter requesting Final Inspection. Letter shall include any items whose completion is delayed under circumstances acceptable to the Architect.
- B. The Architect will re-inspect the Work one time only. All costs associated with additional inspections required to achieve the Final Inspection Completion shall be borne by the Contractor.

1.7 RECORD DOCUMENTS

- A. Do not permanently conceal Work until the required information has been recorded.
- B. Do not use record documents for construction purposes; protect from damage, deterioration, and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.
 1. Maintain all approved permit documents. They shall be accessible to the Owner, Architect, and other inspectors. All permit documents shall be delivered to the Owner within 10 days after the Date of Substantial Completion.
- C. Mark and stamp each drawing sheet and the cover of the Project Manual with "Project Record Copy."
- D. Record Drawings: Maintain a clean set of full size blue or black line prints of Contract Drawings and Shop Drawings. Mark the set to show the actual

installation where the installation varies substantially from the Contract Documents. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference on Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Neatly and legibly mark record sets with red erasable pencil noting related change-order numbers where applicable.
- E. Record Specifications: Mark copy to indicate the actual product installation where installation varies from that indicated in the Specifications, Addenda, and Contract Modifications.
1. Show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 3. Note related record drawing information and Product Data.
- F. Record Product Data: Maintain one copy of each product data submittal. Mark these documents to show significant variations in the actual Work performed in comparison with the submitted information. Include both variations in the products as delivered to the site, and variations from the manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications.
- G. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Architect for the Owner's records.

1.8 PROJECT CLOSEOUT MANUALS

- A. Collect, identify and collate the following materials from the subcontractors to be bound in a hard cover, 3-ring "D" style lay flat binder. Deliver three (3) copies of the finished manuals to the Architect for approval, as a condition precedent to final certification and final payment.
- B. Indexing: Information shall be organized and categories indexed. The individual categories are to be organized and indexed per the Specification Table of Contents.
- C. Listing of Contractor and all Subcontractors: Provide a listing of subcontractors performing work, both on and off site, with the Contractor heading the list. Provide the Company Name and full address, phone number with individual person's name for contact, the current license number, and general area of practice.
- D. Certificate of Substantial Completion: Insert, at this point, a copy of the fully executed Certificate of Substantial Completion.

- E. Testing, Inspections and Certificate of Occupancy: Provide copies of tests, and test and balance reports, see MEP Documents. Provide copies of Certificates of Inspections from authorities having jurisdiction for each trade, division or portion of work, as required. Provide a copy of the final executed Certificate of Occupancy and building permit close out.
- F. Contractor's Affidavit of Payment of Debts and Claims: Provide certification, on AIA Document G706 that work covered by Contract Documents has been completed, and that payrolls, bills of materials and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible, have been paid or otherwise satisfied.
- G. Contractor's Affidavit of Release of Liens: Provide certification, on AIA Document G706A, that liens that are or may be filed arising from work covered by Contract Documents have been released or waived, with any exception noted. Provide additional certification from subcontractors, and material and equipment suppliers, with any exceptions noted. Provide a bond satisfactory to cover exceptions.
- H. Lien Waivers: Releases and waivers of liens, from the Contractor and subcontractors.
- I. Consent of Surety: Provide Consent of Surety, on AIA Document G707.
- J. Warranties, Guarantees, and Bonds: Provide warranties, guarantees, and bonds called for in the Contract Documents.
- K. Certificate of Insurance for Products and Completed Operations.
- L. Cover: Identify each binder with typed or printed title PROJECT CLOSEOUT MANUAL; and list title of project.
- M. Receipts for extra tools, materials, spare parts and videos of Owner's instructional sessions.

1.9 CONTRACTOR'S CLOSEOUT SUBMITTAL

- A. Project Closeout Manuals.
 - 1. Submit one draft copy along with the Pay Request when the Project is considered 50% complete.
 - 2. Submit revised data in final format at Application for Payment for Substantial Completion.
 - a. Final Format: All pages of Project Closeout Manual shall be scanned to .pdf files. Submit one hardcopy and one CD.
- B. Project Record Documents.
- C. Operation and Maintenance Manuals, as identified in Division 01 Section, Operations and Maintenance Data.
- D. Spare parts and maintenance materials, as identified in Division 01 Section, Spare Parts and Maintenance Materials.
- E. Keying Schedule and keying turnover.

1.10 FINAL APPLICATION FOR PAYMENT

- A. Submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.
- B. Submit a final statement of accounting to Architect. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Total Contract Sum, as adjusted
 - b. Previous payments
 - 3. Sum remaining due
- C. If Work has not been completed the Final Application for Payment will be returned to the Contractor, unsigned until such time that all Work is complete.

1.11 WARRANTY

- A. Organize warranty documents into an orderly sequence based on the Table of contents of the Project Manual.
 - 1. Bind original; warranties and bonds in heavy-duty, 3-ring, vinyl covered, loose-leaf binder.
 - 2. Identify binder on front and spine with the typed title WARRANTIES, Project Name, and Name of Contractor.
- B. Only copies of warranties and bonds shall be included in the close-out materials when requested.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

END OF SECTION 01 7801

SECTION 01 7832
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing and submitting Operation and Maintenance Manual and instructions to Owner's personnel.
 - 1. Use personnel thoroughly trained and experienced in instructions, operation and maintenance of equipment or systems involved.

1.2 FORMAT

- A. Prepare instructions and data in the form of an instructional manual for use by Owner's operating personnel.
- B. Binders: Three ring "D" style hardback binder(s). When multiple binders are used, correlate data into related groupings.
- C. Cover: Identify each binder on front and spine with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS. Include Project title.
- D. Arrange content following the Table of Contents of this Project Manual.
- E. Provide tabbed flyleaf for each separate product and system with typed description of product and major component parts of equipment..
- F. Text: Manufacturer's printed data or type written data.
- G. Drawings: Bind with text pages. Fold larger drawings to size of text.

1.3 CONTENT (EACH VOLUME)

- A. Table of Contents: Provide title of Project, names, addresses, and telephone numbers of Architect and Contractor with name of responsible parties and a schedule of products and systems, indexed to content of volume.
- B. For each Product or System: List name, address and telephone numbers of subcontractors and suppliers, including local source of suppliers and replacement materials.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete or mark-out non-applicable information.
 - 1. Do not use yellow or other colored highlighter
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, show control and flow diagrams.
 - 1. Do not use Project Record Documents as maintenance drawings.
- E. Warranties and Bonds: Bind one copy of each in appropriate section.
- F. Maintenance Service Agreements: Bind one copy of each in appropriate section.

1.4 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include Product Data, with catalog number, size, composition, color, and texture designations. Provide information for re-ordering custom manufactured products.
- B. Care and Maintenance Instructions: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for maintenance and cleaning.
- C. Moisture-Protection and Weather-Exposed Products: Include product data listing applicable reference standards, chemical compositions, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: Refer to Individual sections.

1.5 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each Item of Equipment and Each System: Include description of unit or system and component parts. Give function, normal operation characteristic, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replacement parts.
- B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications.
- C. Include "as-installed" color coded wiring diagrams.
- D. Operation Procedures: Include start-up, break-in, and routine operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include seasonal and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for troubleshooting; disassembly, repair, and assembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - 1. Provide any forms necessary to document required maintenance.
- F. Provide servicing and lubrication schedule with list of lubricants required.
- G. Include manufacturer's printed operations and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide "as-installed" control diagrams by controls manufacturer.
- K. Provide Contractor's Coordination Drawings, with "as-installed" color coded piping diagrams.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacture's spare parts and recommended quantities to be maintained in storage.
- N. Include test and balance reports.
- O. Additional Requirements: Refer to individual sections.

- P. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.6 INSTRUCTIONS TO OWNER PERSONNEL

- A. Before Final Inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times. The instruction will include tracing the system in the field and on the diagrams in the manuals so that maintenance personnel will be familiar with both the systems and the data supplied.
- B. Use Operation and Maintenance Manuals as basis of instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance. For equipment requiring seasonal operation, perform instructions for other seasons within eight months.
- C. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.
- D. Videotape all instruction given to the Owner's personnel. Record individual training sessions on a separate disk or tape. Label with name of event, date recorded, Contractor's name, and company presenting session.

1.7 SUBMITTALS

- A. Submit 2 draft copies in proposed form along with the pay request when the project is considered 50 percent complete. Copy will be returned with Architect's comments. Revise content of documents as required for final submittal.
- B. Submit 2 copies revised data in final format at Application for Payment for Substantial Completion.
 - 1. Final Format: All pages of Operation and Maintenance Manual shall be scanned to .pdf files. Submit one hardcopy and one CD.
- C. Submit two video tape (or digitally recorded DVDs) copies of each training session with closeout documents.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

END OF SECTION 01 7832

SECTION 01 7833
WARRANTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
 - 1. Refer to General Conditions for Terms of the warranty for workmanship and materials.
 - 2. Refer also to Division 01, Section, Product Requirements, Warranty Article for additional warranty requirements.
 - 3. Specific requirements for warranties for the work that are specified to be warranted are included in individual sections.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the contractor.

1.2 WARRANTY FORMS

- A. Form for general use is attached to the end of this section.
- B. Material and equipment manufacturers may use their own forms, modified as required to comply with terms outlined in the Contract Documents.

1.3 DEFINITIONS

- A. Standard Product warranties: Preprinted written warranties published by the individual manufacturers for particular products specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties: Written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranty work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranty work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work complying with the Contract Documents.

Replace or rebuild defective work regardless whether the Owner has benefited from the use of the work through a portion of its anticipated useful service life.

- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the work, until the contractor presents evidence that persons required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties to the Architect prior to the Date of Substantial Completion.
- B. Special Warranties: When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier, or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft copy for review prior to final execution.
- C. Form of Submittal: At Final Completion compile two copies of each required warranty executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents in sequence according to the Table of Contents of the Project Manual.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

END OF SECTION 01 7833

WARRANTY – GUARANTEE

To: Orange County Library System
RE: Southwest Branch, Restroom Refurbishment

Specification Section Number: _____
Specification Section Title: _____
Substantial Completion Date: _____
Warranty – Guarantee Period: _____

_____ Does hereby certify all guarantees and warranties
Contractor's Name

take effect on the Date of Substantial Completion and shall remain in force as required by the Contract Documents for the CONTRACTORS NAME; and further certifies that all shipping, labor, materials, equipment, or items necessary to execute said guarantees and warranties shall be provided at no cost to the Owner for the duration of each guarantee or warranty period.

GENERAL CONTRACTOR FIRM NAME:

_____	_____
DBPR License Number	Signature
_____	_____
Address	Typed/Printed Name
_____	_____
Address Line 2	Title
_____	_____
Phone Number	Fax Number

SUBCONTRACTOR FIRM NAME:

_____	_____
DBPR License Number	Signature
_____	_____
Address	Typed/Printed Name
_____	_____
Address Line 2	Title
_____	_____
Phone Number	Fax Number

Sworn to and subscribe before me this _____
Day of _____, 20_____

Notary Public, State of Florida
My Commission expires:

(Notary Seal)

WARRANTY – GUARANTEE

To: Orange County Library System
RE: South Trail Branch, Restroom Refurbishment

Specification Section Number: _____
Specification Section Title: _____
Substantial Completion Date: _____
Warranty – Guarantee Period: _____

_____ Does hereby certify all guarantees and warranties
Contractor's Name

take effect on the Date of Substantial Completion and shall remain in force as required by the Contract Documents for the CONTRACTORS NAME; and further certifies that all shipping, labor, materials, equipment, or items necessary to execute said guarantees and warranties shall be provided at no cost to the Owner for the duration of each guarantee or warranty period.

GENERAL CONTRACTOR FIRM NAME:

_____	_____
DBPR License Number	Signature
_____	_____
Address	Typed/Printed Name
_____	_____
Address Line 2	Title
_____	_____
Phone Number	Fax Number

SUBCONTRACTOR FIRM NAME:

_____	_____
DBPR License Number	Signature
_____	_____
Address	Typed/Printed Name
_____	_____
Address Line 2	Title
_____	_____
Phone Number	Fax Number

Sworn to and subscribe before me this _____
Day of _____, 20_____

Notary Public, State of Florida
My Commission expires:

(Notary Seal)

SECTION 01 7843
SPARE PARTS AND MAINTENANCE MATERIALS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative requirements for spare parts, maintenance materials, storage and turnover.

1.2 QUALITY ASSURANCE

- A. Do not use spare parts, maintenance materials, and turnover materials designated for the Owner's use for construction, punch-out, or warranty repair purposes.

1.3 STORAGE, MAINTENANCE

- A. Store products per manufacturer's recommendations until the date of substantial completion then transfer to the area designated by Owner.
- B. Maintain spare parts, products and materials in original unopened containers with labels intact and legible, until delivery to Owner.

1.4 DELIVERY

- A. Coordinate with Owner: Deliver and unload spare parts, products and materials to Owner at Project site and obtain receipt prior to Substantial Completion.
 - 1. Use form attached at end of this Section.
 - 2. Copy of receipts to be included in Close-out Manual.

PART 2 - PRODUCTS

2.1 PRODUCTS REQUIRED

- A. Provide Owner with quantities of extra stock, products, spare parts, maintenance tools, and maintenance materials specified in individual sections.
- B. Products: Identical to those installed in the Work. Include quantities in original purchase from original supplier or manufacturer.

PART 3 - EXECUTION

3.1 ATTACHED DOCUMENTS

- A. Attic Stock/Spare Parts Receipt

END OF SECTION 01 7843

ATTIC STOCK/SPARE PARTS RECEIPT

Completed and submit to the Owner upon delivery. Include a copy in the appropriate section of the Operation and Maintenance Manual.

Name of Project: _____

Specification Reference: _____

Receipt For: _____

Quantity/Units: _____

Signature below by the Contractor and subcontractor signifies that the maintenance materials and spare parts required by the Contract Documents have been turned over to the Owner. Signature by the Owner acknowledges receipt of the same maintenance materials and spare parts.

Contractor: _____

Authorized Signature and Title: _____

Date: _____

Subcontractor: _____

Authorized Signature and Title: _____

Date: _____

Owner: _____

Authorized Signature and Title: _____

Date: _____

SECTION 02 4113
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for removing selective portions of the building to accommodate new construction
 - 1. Remodeling construction work and patching are included within the respective sections of specifications, including removal of materials for reuse and incorporation into remodeling or new construction.
 - 2. Relocation of pipes, conduits, ducts, and other mechanical and electrical work is specified in the Facilities Service Subgroup.

1.2 MATERIALS OWNERSHIP

- A. Remove, clean, and deliver to Owner the following items:
 - 1. Electric hand dryers
 - 2. Soap Dispensers
 - 3. Stainless steel framed mirrors
 - 4. Toilet paper dispensers
 - 5. Toilet seat cover dispensers
 - 6. Napkin disposal unit
 - 7. Baby changing tables
 - 8. Grab bars

1.3 SUBMITTALS

- A. Schedule indicating proposed sequence of operations for selective demolition work for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection.
 - 1. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 - 2. Coordinate with Owner's continuing occupation of portions of existing building and with Owner's partial occupancy of completed new addition.
- B. Submit digital photographs in JPEG format of existing conditions of structure surfaces, equipment, and adjacent improvements that might be misconstrued as damage related to removal operations. File with Architect prior to start of work. This is in addition to the requirements for the pre-construction video recordings.
- C. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

1.4 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- C. Standards: Comply with ANSI A10.6 and NFPA 241.

1.5 PROJECT CONDITIONS

- A. Owner will not occupy the building areas during selective demolition
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Owner assumes no responsibility for actual condition of items or structures to be demolished.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.
- E. Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
 - 1. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Do not interrupt utilities serving occupied facilities, except when authorized in writing by Owner. Provide temporary services during interruptions to existing utilities, as acceptable to Owner.
 - 2. Maintain fire-protection facilities in service during selective demolition operations.
- G. Explosives: Use of explosives will not be permitted.

PART 2 - PRODUCTS

- A. Floor Mat Dust Control
 - 1. Basis of Design: Condor 6GPZ4, 24 by 30 inch Disposable Tacky Mat by Granger, or approved substitution.
 - 2. Color: Blue or similar mat in color selected by Owner.
 - 3. Number of sheets: Minimum 30

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey of Existing Conditions: Correlate with requirements indicated to determine extent of selective demolition required.
 - 1. Record existing conditions by use of preconstruction photographs. Comply with requirements specified in Division 01 Section, Pre-

Construction Video Recording.

- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
 - 1. Comply with requirements for existing services/systems interruptions specified in Division 01 Section, Summary.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
 - a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Erect temporary covered passageways as required by authorities having jurisdiction.
 - 3. Protect walls, ceilings, floors, sanitary lines, and other existing finish work that are to remain or that are exposed during selective demolition

operations.

4. Construct temporary insulated dustproof partitions where required to separate areas where noisy or extensive dirt, fumes, and dust operations are performed. Equip partitions with dustproof doors and security locks.
 5. Cover and protect furniture, furnishings, and equipment that have not been removed.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 DEMOLITION

- A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level.
 2. Cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
 9. For interior slabs on grade, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.
- B. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area on-site. Notify Owner of location.
 5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- E. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Architect in written, accurate detail. Pending receipt of directive from Architect, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Site and legally dispose in an EPA-approved landfill.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

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

END OF SECTION 02 4113

SECTION 03 5414
CEMENT BASED UNDERLAYMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cement-based, polymer-modified, self-leveling underlayment for interior finish flooring.
- B. Material shall be compatible with the designated fire rated assembly.

1.2 SUBMITTALS

- A. Shop Drawings: Plans indicating substrates, locations, and average depths of underlayment based on survey of substrate conditions.
- B. Mock-Up

1.3 QUALITY ASSURANCE

- A. Verify compatibility of cement-based underlayment including surface sealers, if any, with indicated finish flooring products, including adhesives.
- B. Mockups: Apply underlayment mockups to demonstrate surface finish, bonding, texture, tolerances, and standard of workmanship.
 - 1. Apply mockups approximately 100 square feet in area directed by Architect.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 FIELD QUALITY CONTROL

- A. Slump Test: Test mix for slump during pumping using a 2 inch by 4 inch cylinder resulting in a patty size of 8 inches plus or minus 1 inch diameter.
 - 1. Provide slump test at least once for each building level, per day.
- B. Field Samples: At least one set of 3 molded cube samples shall be taken from each day's pour during the application. Cubes shall be tested in accordance with ASTM C472. Make test results available to architect and contractor.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original, unopened packages, protected from exposure to the elements.
- B. Remove damaged or deteriorated materials from the Site.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ambient temperature and humidity, ventilation, and other conditions affecting underlayment performance.
 - 1. Place underlayments only when ambient temperature and temperature of substrates are between 50 and 80 deg F.

1.7 COORDINATION

- A. Coordinate application of underlayment with requirements of floor covering products, including adhesives to ensure compatibility of products.

PART 2 - PRODUCTS

2.1 CEMENT-BASED UNDERLAYMENT

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Ardex, Inc.; K-15 Self-Leveling Underlayment Concrete.
 - 2. Burke Group, LLC (The); 300 Premium Underlayment.
- B. Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in uniform thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.
 - 2. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109.
- C. Accessory Materials:
 - 1. Primers and Aggregates: Recommended in writing by manufacturer for substrate, thickness, and conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for conditions affecting performance. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 APPLICATION

- A. Prepare and clean substrates. Provide clean, dry, neutral-pH substrate for underlayment application.
 - 1. Treat nonmoving substrate cracks to prevent cracks from telegraphing (reflecting) through underlayment.
 - 2. Concrete Substrates: Mechanically remove laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.
- B. After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.
 - 1. Test slab for moisture and PH. Do not proceed if values are not within underlayment manufacturer's recommendations.
- C. Coordinate application of components, including primer, to provide optimum underlayment-to-substrate and intercoat adhesion.
- D. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
- E. Apply underlayment to produce uniform, level surface suitable for tile installation.

1. Apply first level, with recommended gravel aggregate, to 1/2 to 1 inch below intended final elevation,
 2. Apply a final layer without aggregate to produce smooth surface.
 3. Feather edges to match adjacent floor elevations.
- F. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.
- G. Do not install finish flooring over underlayment until after time period recommended by underlayment manufacturer.

3.3 PROTECTION

- A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 03 5414

SECTION 05 5000
METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
1. Rough hardware
 2. Miscellaneous framing and supports

1.2 SUBMITTALS

- A. Shop Drawings:
1. Show fabrication details for metal fabrications.
 2. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
 3. Provide templates for anchors and bolts specified for installation under other Sections.

1.3 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to the following:
1. AWS D1.1, "Structural Welding Code--Steel."
 2. AWS D1.3, "Structural Welding Code--Sheet Steel."
 3. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re-certification.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of in place construction to which fabrications must fit by field measurements before fabrication. Show measurements on final shop drawings.
1. Established Dimensions: Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

1.5 COORDINATION

- A. Coordinate installation of anchorages for metal fabrications. 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.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide

materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Rolled Structural Steel Shapes: ASTM A572, Grade 50.
- B. Steel Plates and Bars: ASTM A36.
- C. Steel Pipe: ASTM A53, standard weight (schedule 40), unless otherwise indicated, or another weight required by structural loads.
 - 1. Galvanized finish
- D. Welding Rods and Bare Electrodes: Select according to AWS specifications for the metal alloy to be welded.
- E. Brackets, Flanges, and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
- F. Galvanized sheet metal shall be commercial quality with 0.20 percent copper, ASTM A525; G90 hot-dip galvanized, mill phosphatized where indicated for painting; 24 gage thickness except as otherwise indicated.

2.3 PAINT

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
 - 1. Use primer with a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Division 9.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in steel, and complying with SSPC-Paint 20.
- C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187.

2.4 FASTENERS

- A. General: Unless otherwise indicated, provide Type 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
- B. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
 - 1. Material: Group 1 alloy 304 or 316 stainless-steel bolts and nuts complying with ASTM F593 and ASTM F594.

2.5 GROUT

- A. Non-shrink, Nonmetallic Grout: Factory-packaged, non-staining, non-corrosive, nongaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.6 FABRICATION

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Shear and punch metals cleanly and accurately. Remove burrs.
- E. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- F. Remove sharp or rough areas on exposed traffic surfaces.
- G. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- J. Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces.
- K. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- L. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.7 MISCELLANEOUS METAL FABRICATIONS

- A. Rough Hardware
 - 1. Furnish bent or otherwise custom-fabricated, bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as

required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures.

2. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts that bear on wood structural connections, and furnish steel washers elsewhere.

B. Miscellaneous Framing and Supports

1. Provide steel framing and supports for applications indicated that are not a part of structural steel framework as required to complete the Work.
2. Fabricate units to sizes, shapes, and profiles indicated and required to receive other adjacent construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - a. Fabricate units from slotted channel framing where indicated.
 - b. Furnish inserts if units are installed after concrete is placed.
3. Fabricate support for suspended toilet partitions as follows:
 - a. Hangers: Steel rods, 1/2-inch minimum diameter, spaced not more than 36 inches o.c. Thread rods to receive anchor and stop nuts. Fit hangers with wedge-shaped washers for full bearing on sloping flanges of support beam.
 - b. Braces and Angles: Steel angles of size required for rigid support of beam and for secure anchorage.
4. Galvanize miscellaneous framing and supports in all locations.

2.8 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
1. ASTM A123, for galvanizing steel and iron products
 2. ASTM A153, for galvanizing steel and iron hardware
- B. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which fabrications are to be installed. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts,

toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.

- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.
- E. Fit exposed connections together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
- F. Field Welding:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- G. Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on reviewed Shop Drawings.

3.3 INSTALLING SUPPORTS FOR TOILET PARTITIONS

- A. Anchor supports to and brace overhead to building structure.

3.4 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 requirements for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a 2.0-mil minimum dry film thickness.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas, and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 05 5000

SECTION 06 0500
COMMON WORK RESULTS FOR WOOD, PLASTICS, AND COMPOSITES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes work results requirements that are common to all other Division 06 Sections.

1.2 DEFINITIONS

A. Exposed Surfaces

1. Surfaces visible when doors and drawers are closed
2. Bottoms of cases more than 4 feet above floor
3. Visible members in open cases or behind glass doors

B. Semi-Exposed Surfaces

1. Members behind opaque doors, such as shelves, divisions, interior faces of ends, case back, drawer sides, backs and bottoms, and back face of doors
2. Tops of cases 6'-6 or more above floor

C. Concealed Surfaces: Surfaces not visible after installation.

1.3 SUBMITTALS

A. Product Data:

1. Documentation showing adhesives meet VOC limits of the South Coast Air Quality Management District Rule #1168.
2. Wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used.
 - a. Include written instructions for handling, storing, and finishing treated material.
3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Site.
4. Certification that chemical treatment complies with specification for each type of treatment.
5. Acknowledgement of the detrimental effect of copper treated wood when in contact with untreated steel.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Where indicated, provide materials with fire-test-response characteristics determined by a nationally recognized testing and inspecting agency according to ASTM D5664.
- B. Kiln dry all wood to the following maximum moisture content:
1. Exterior and non-conditioned spaces: 19 percent
 2. Interior, conditioned spaces: 15 percent

- C. Ensure all preservative is adequately fixed in wood. Reject lumber with surface residues of white salts. Provide wood that is kiln-dried after treatment or prefinished with a sealer.
- D. Obtain approvals from Building Official for alternative wood preservative treatment.
- E. Products used within the interior of the building shall contain no added formaldehyde including glues.
 - 1. Emission standards for particleboard, medium density fiberboard, hardwood plywood, and finished goods made with them must meet the EPA's publication "The Formaldehyde Emission Standards for Composite Wood Products Act of 2010"

1.5 PROJECT CONDITIONS

- A. Coordinate environmental requirements for casework installation areas. Do not deliver or install casework until temperature and relative humidity have been stabilized and will be maintained.
 - 1. Maintain temperature and humidity in installation area as required to maintain moisture content of installed casework within a 1.0 percent tolerance through date of Substantial Completion.
- B. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit work to be performed according to manufacturer's written instructions and warranty requirements and at least one coat of specified finish to be applied without exposure to rain.
- C. Verify dimensions by field measurement before fabrication where work adjoins other Work. Notify Architect of conditions that may cause delay to Project. Allow for trimming and fitting of cabinet work and trim.
- D. Coordination: Fit work to other Work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports and reinforcement to allow proper attachment of other work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect materials against weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings.
- B. Do not deliver interior wood products until environmental conditions meet requirements specified for installation areas.

PART 2 - PRODUCTS

2.1 PRESSURE TREATMENT OF WOOD

- A. Water Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propenyl butyl carbonate (IPBC) as its active ingredient.
- B. Preservative Treatment. Comply with performance requirements in AWPA U1.
 - 1. ACQ - Ammoniacal copper quarternary compound: Pressure-injected
 - 2. Use 0.25 lb/cu ft retention

3. Kiln dry after treatment to 19 percent maximum moisture content for lumber and 18 percent for plywood
 4. Optional Preservative Treatments:
 - a. CDDC: Copper hydroxide sodium dimethyldithiocarbamate
 - b. Acetylation process
- C. Acceptable Products:
1. NatureWood by Osmose, Inc.
 2. Preserve Plus by Chemical Specialties, Inc.
 3. Accoya Wood by Accsys Technologies

2.2 MISCELLANEOUS MATERIALS

- A. Adhesives: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
1. Use wood glue that has a VOC content of 30 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.
1. Use adhesive that has a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.3 FABRICATION

- A. Wood Moisture Content: Comply with requirements of specified inspection agencies and manufacturer's recommendations for moisture content of finish carpentry in relation to relative humidity conditions existing during time of fabrication and in installation areas. Provide finish carpentry with moisture content that is compatible with Project requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine structure and conditions under which work is to be installed. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 APPLICATION

- A. Brush apply preservative treatment material to cut ends of treated lumber. Use same material as used for original treatment.
- B. Installation of Pressure Treated Wood: No direct contact with untreated steel shall be allowed. Provide coating or sheet barriers to separate treated wood from steel. Apply only stainless steel fasteners into or through copper preservative treated wood.

3.3 ADJUSTMENTS, CLEANING, AND PROTECTION

- A. Protect installed woodwork from damage by other trades until the Date of Substantial Completion.

END OF SECTION 06 0500

SECTION 06 1000
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Wood grounds, nailers, blocking, and sleepers

1.2 REFERENCES

A. Lumber Standard: Comply with PS-20 and with applicable rules of the respective grading and inspecting agencies for species and products indicated.

1.3 DEFINITIONS

A. Rough carpentry includes carpentry work not specified as part of other Sections and generally not exposed, unless otherwise specified.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

1. For pressure treated lumber and plywood, place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Lumber Standards: Furnish lumber manufactured to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Inspection Agencies: SPIB - Southern Pine Inspection Bureau.

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

D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

1. Provide dressed lumber, S4S, unless otherwise indicated.
2. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.
3. "Standard" grade.
4. Southern Pine graded under SPIB rules.

2.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Provide lumber for support or attachment of other construction including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.
- C. Grade: "Standard" grade light-framing-size lumber of any species or board-size lumber as required. No. 2 Boards per SPIB rules.
- D. Wood grounds, nailers, and sleepers shall be pressure treated as specified.

2.3 FASTENERS

- A. Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. All fasteners used in conjunction with pressure treated (ACO or CDDC) wood shall be G185 hot dipped galvanized or stainless steel.
- B. Nails, Wire, Brads, and Staples: ASTM F1667.
- C. Power Driven Fasteners: National Evaluation Report NER-272.
- D. Wood Screws: ANSI B18.6.1.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of rough carpentry construction and that are too small to use in fabricating rough carpentry with minimum joints or optimum joint arrangement.
- B. Set rough carpentry to required levels and lines, with members plumb and true to line and cut and fitted.
- C. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Coordinate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Attach rough carpentry work to substrate by anchoring and fastening indicated.
- E. Use screws, unless otherwise indicated. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required.
- F. Use IPBC treated products at interior locations.
- G. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.
- H. All pressure treated wood installed in contact with steel decking, studs, or other framing members shall be separated by a minimum 40mil peel and stick membrane.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install wood grounds, nailers, blocking, and sleepers where shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.
- C. Install permanent grounds of dressed, preservative treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.
- D. Provide pressure treated blocking at all locations in contact with concrete. Fire treated where required.

END OF SECTION 06 1000

SECTION 07 9000
JOINT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes interior sealants.
- B. VOC limits for sealants and adhesives

1.2 SUBMITTALS

- A. Certifications:
 - 1. Certification by joint sealant manufacturer that sealants, primers, and cleaners required for sealant installation comply with local regulations controlling use of volatile organic compounds (VOC) if more stringent than limits specified.
 - a. Refer to Division 09 section, Painting for VOC limits with regards to paints and coatings
 - 2. Certification by sealant manufacturer that sealants, primers, and cleaners comply with Regulation 8, Rule 51 of the Bay Area Air Quality Management District.
 - 3. Certification by adhesive manufacturer that adhesives comply with the South Coast Air Quality Management District Rule 1168.
 - 4. Highlight VOC's for each product

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain joint sealant materials from a single manufacturer for each different product required and who will, if required, send a qualified technical representative to project site for the purpose of advising the Installer of procedures and precautions for the use of the materials.
- B. Installer Qualifications: Engage an experienced installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.
 - 1. Installer shall be a sealant and caulking subcontractor, authorized or licensed by the sealant manufacturer, with a minimum of 5 years of successful experience in the application of the types of materials required.
- C. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
- D. Product Testing:
 - 1. VOC Limits (South Coast Air Quality Management District Rule 1168) for adhesives, sealers, and primers:
 - a. Architectural Applications:
 - 1) Indoor Carpet Adhesives 50 g/L

- | | | |
|-----|--|---------|
| 2) | Carpet Pad Adhesives | 50 g/L |
| 3) | Wood Flooring Adhesives | 100 g/L |
| 4) | Ceramic Tile Adhesives | 65 g/L |
| 5) | Dry Wall and Panel Adhesives | 50 g/L |
| 6) | Subfloor Adhesives | 50 g/L |
| 7) | Rubber Floor Adhesives | 60 g/L |
| 8) | VCT and Asphalt Adhesives | 50 g/L |
| 9) | Multipurpose Construction Adhesives | 70 g/L |
| 10) | Structural Glazing Adhesives | 100 g/L |
| 11) | PVC Welding | 510 g/L |
| 12) | CPVC Welding | 490 g/L |
| 13) | ABS Welding | 325 g/L |
| 14) | Plastic Cement Welding | 250 g/L |
| 15) | Cove Base Adhesives | 50 g/L |
| 16) | Adhesive Primer for Plastic | 550 g/L |
| 17) | Contact Adhesive | 80 g/L |
| 18) | Special Purpose Contact Adhesive | 250 g/L |
| 19) | Structural Wood Member Adhesives | 140 g/L |
| 20) | Sheet Applied Rubber Lining Operations | 850 g/L |
| 21) | Top and Trim Adhesive | 250 g/L |
- b. Substrate Specific Applications:
- | | | |
|----|-------------------------------|---------|
| 1) | Metal to Metal | 30 g/L |
| 2) | Plastic Foams | 50 g/L |
| 3) | Porous Material (Except Wood) | 50 g/L |
| 4) | Wood | 30 g/L |
| 5) | Fiberglass | 80 g/L |
| 6) | Architectural | 250 g/L |
| 7) | Roadway | 250 g/L |
| 8) | Other | 420 g/L |
- c. Sealant Primers: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24)
- | | | |
|-----|--------------------------------------|----------|
| 1) | Architectural, | 250 g/L |
| 2) | Non-porous Substrates | 250 g/L |
| 3) | Porous Substrates | 775 g/L |
| 4) | Plastic Foam Adhesives: | 50 g/L. |
| 5) | Gypsum Board and Panel Adhesives: | 50 g/L. |
| 6) | Multipurpose Construction Adhesives: | 70 g/L. |
| 7) | Fiberglass Adhesives: | 80 g/L. |
| 8) | Contact Adhesive: | 80 g/L. |
| 9) | Other Adhesives: | 250 g/L. |
| 10) | Single-Ply Roof Membrane Sealants: | 450 g/L. |
| 11) | Nonmembrane Roof Sealants: | 300 g/L. |
2. VOC Limits (Green Seal Standard for Commercial Adhesives GS-36) for aerosol adhesives:
- a. Aerosol Adhesives:

- | | | |
|----|----------------------------|---------------------|
| 1) | General Purpose Mist Spray | 65% VOC's by weight |
| 2) | General Purpose Web Spray | 55% VOC's by weight |
| 3) | Special Purpose Adhesives | 70% VOC's by weight |

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration, pot life, curing time, and mixing instructions for multi-component materials.
- B. Store and handle materials in compliance with manufacturer's recommendations.

1.5 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When joint substrates are wet.
 - 2. Where joint widths are less than allowed by joint sealant manufacturer for application indicated.
 - 3. Until contaminants capable of interfering with adhesion are removed from joint substrates.
- B. Preparation of joint surfaces, backing, and the conditions under which the sealant and caulking is to be installed shall conform to manufacturer's recommendations.
 - 1. Use of bond break tape is prohibited without the expressed permission of the Architect. Each situation will be evaluated with regard to inability to properly use backer rod to prevent adhesion.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Surface Hardness: Provide types of sealant to withstand anticipated abrasive or possible indentation as recommended by manufacturer.
- C. Colors: By Architect from manufacturer's full range of standard colors.

2.2 MATERIALS

- A. General
 - 1. Where the term "Acceptable Standard" is used within this Section, it refers to the manufacturer and product listed, which is specified as the type and quality required for this Project.
 - 2. Products of other manufacturers will be considered, providing their products equal or exceed the quality specified, and they can provide products of the type and quality required.
- B. Caulking Compounds (Acrylic Latex Sealant)
 - 1. Latex rubber modified, acrylic emulsion polymer sealant compound; manufacturer's standard, one part, non-sag, mildew resistant, acrylic emulsion sealant complying with ASTM C834, recommended for exposed applications on interior locations involving joint movement of not more

- than plus or minus 5 percent.
- 2. Acceptable Standard
 - a. Sonolac; BASF
 - b. Acrylic Latex Caulk; Tremco, Inc.
 - c. Acrylic Latex Caulk with Silicone; DAP, Dayton, Ohio
- C. One-part mildew resistant silicone sealant: (Around countertops and backsplashes and other wet interior locations.)
 - 1. Acceptable Standard
 - a. Dow Corning 786; Dow Corning Corp.
 - b. Omniplus; BASF
 - c. Sanitary 1700; General Electric
 - d. Proglaze White; Tremco Mfg. Co.
- D. Miscellaneous Materials
 - 1. Primer: Type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer substrate tests and field tests.
 - 2. Cleaners for Nonporous Surfaces: Non-staining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in service performance.
 - 3. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

2.3 JOINT SEALANT BACKING

- A. Provide sealant backings of material and type that are non-staining, compatible with substrates, sealants, primers and other joint fillers, and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint Fillers: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to produce optimum sealant performance:
 - 1. Type C: Closed-cell material with a surface skin
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer. Provide self adhesive tape where applicable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints to receive joint sealants for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint

sealants complying with recommendations of sealant manufacturer and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, and surface dirt.
 2. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from cleaning operations by vacuum or blowing out joints with oil-free compressed air.
 3. Remove laitance and form release agents from concrete.
 4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with cleaners that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealant manufacturer. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
1. Interior joints which require caulking are to be caulked with the specified caulking compound, unless noted otherwise.
 2. Joints to be filled shall be dry and free from dust, dirt, oil, and grease at the time of application or caulks or sealants.
 3. Masking: Metal shall be masked with masking tape, as well as other surfaces where it's required to prevent the sealant smearing the adjacent surface. Upon completion of the caulking, remove the tape.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

- a. Do not leave gaps between ends of joint fillers.
 - b. Do not stretch, twist, puncture, or tear joint fillers.
 - c. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
 - d. Provide backer rods and tapes per manufacturer's joint details, not allowing three sided adhesion.
- D. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
- E. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- 3.4 CLEANING AND PROTECTION
- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.
 - B. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 9000

SECTION 08 1416
FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes solid core wood veneer doors

1.2 REFERENCES

- A. References: AWI (AWS) – Quality Standards of the Architectural Woodwork Institute

1.3 SUBMITTALS

- A. Samples:

- 1. 6 inch by 6 inch (approximately) section of door faces with solid wood edging, showing factory finish and representing typical range of color and grain for veneer and solid lumber required. Match finish of existing doors.

- B. Sample warranty

1.4 QUALITY ASSURANCE

- A. AWI Quality Standard: Eighth edition of the "Architectural Woodwork Quality Standards"; including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of WDMA quality standard.
- B. Manufacturer: Obtain doors from a single manufacturer.
- C. VOC levels for adhesives and finishes to meet minimum requirements specified in Division 07 Section, Joint Protection.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect each door for shipment and handling.
- B. Protect doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with requirements of referenced standards and recommendations of WDMA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors," as well as with manufacturer's instructions.
- C. Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames, and hardware, using temporary, removable or concealed markings.

1.6 PROJECT CONDITIONS

- A. Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with the following requirements applicable to project's geographical location:
 - 1. Referenced AWS quality standard including Section 100-S-3 "Moisture Content".

1.7 WARRANTY

- A. Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.
- B. The manufacturer shall warrant each separate door installation against manufacturing defects for the "lifetime of original installation", including cost of refinishing and rehanging if doors do not comply with specified tolerances. Include coverage for delamination, warping beyond specified installation tolerances, defective materials and telegraphing core construction.
- C. Contractor's Responsibilities: Replace all doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty or where doors have been damaged due to construction activities.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products of the following manufacturers are acceptable:
 - 1. Algoma Hardwoods, Inc., a Division of Masonite Architectural Door Systems
 - 2. Lambton Doors
 - 3. Marshfield DoorSystems, Inc., a Division of Masonite Architectural Door Systems
 - 4. Mohawk Flush Doors, Inc., a Division of Masonite Architectural Door Systems
 - 5. Oshkosh Architectural Wood Door Company
 - 6. VT Industries, Inc.
 - 7. Eggers Industries

2.2 MATERIALS AND COMPONENTS

- A. Provide interior flush wood doors conforming to the following requirements:
 - 1. Faces: Rotary Cut, White (sapwood) Birch veneer, minimum 5 inch flitch, Grade A. Variations allowed per Section 1300-G-17, AWI Quality Standards, latest edition.
 - a. The idea here is to match the existing wood doors in the facility. White Birch is specified, but another species may be required to match existing.
 - 2. Core Construction: Structural composite lumber (SCL-5)
 - 3. Edges: Provide manufacturers standard, laminated edge construction with improved screw-holding capability and split resistance. Edges shall match face veneer, sand and finish to match door faces.
 - 4. Face Panels: Manufacturer's standard 2 ply hot pressed panels with Type I glue.
 - 5. Matching: Pairs of doors shall be book matched grain as pairs on both sides. Provide end matched transoms.
 - 6. Thickness: 1-3/4 inches, unless noted otherwise.

2.3 PREFITTING AND PREPARATION FOR HARDWARE

- A. Pre-fit and pre-machine doors at factory, including beveling both edges 1/8 inch in 2 inches.
- B. Comply with tolerance requirements of AWI for pre-fitting. Machine doors for hardware requiring cutting doors. Comply with final hardware schedules and door frame shop drawings and with hardware templates and other essential information required to ensure proper fit of doors and hardware.
- C. Coordinate with the metal frame supplier the locations of hardware mortises in metal frames to verify dimensions and alignment before proceeding with machining in factory.

2.4 FABRICATION

- A. Fabricate flush wood doors to produce doors complying with following requirements:
 - 1. Factory-prefit and pre-machine doors to fit frame opening sizes indicated with the following uniform clearances and bevels:
 - a. Comply with tolerance requirements of AWI for pre-fitting. Comply with final hardware schedules and door frame shop drawings and with hardware templates.
 - b. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory pre-machining.

2.5 FACTORY FINISHING

- A. Comply with referenced AWI quality standard including Section 1500 "Factory Finishing".
- B. Prefinish wood doors at factory.
- C. Transparent Finish: Comply with requirements indicated for grade, finish system, staining effect and sheen.
 - 1. AWI Grade: Custom
 - 2. Finish: AWI Catalyzed Polyurethane.
 - 3. Staining: Match existing.
 - 4. Effect: Open grain finish.
- D. Factory finished doors damaged after installation shall be replaced with factory finished doors at no additional cost to the Owner.
 - 1. Field repair of doors will not be allowed.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine installed door frames prior to hanging door:
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb, parallel jambs and level heads. Correct frames prior to hanging doors.
 - 2. Reject doors with defects.

- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 DOOR INSTALLATION

- A. Pre-fit Doors: Fit to frames for uniform clearance at each edge and machine for hardware to whatever extent not previously worked at factory as required for proper fit and uniform clearance at each edge.
 - 1. Install non-rated doors in accordance with manufacturer's instructions and as shown.
- B. Clearance: For non-rated doors provide clearances of 1/8-inch at jambs and heads; 1/8-inch at meeting stiles for pairs of doors; and 1/2-inch from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4-inch clearance from bottom of door to top of threshold.
- C. Doors having any of the following defective conditions will not be accepted:
 - 1. Not operating properly, such as swinging, sliding or latching
 - 2. Damaged face or edge.
 - 3. Unsealed edges, tops and bottoms.
 - 4. Irregularities in surface finish, such as roughness, "skips", "runs" or other blemishes in color or gloss.
- D. If operation defects cannot be corrected by repairing or rehang, replace door with new unit.
- E. Doors damaged prior to or during installation shall be replaced at no cost to the Owner.
- F. Factory Finished Doors: Restore finish before installation, if fitting or machining is required at the job site and permitted by warranty.

3.3 ADJUSTING AND PROTECTION

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Protect doors as recommended by door manufacturer to ensure that doors will be without damage or deterioration at time of Substantial Completion.

END OF SECTION 08 1416

SECTION 09 2216
NON STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Non-load-bearing steel framing

1.2 SUBMITTALS

- A. Shop Drawings: Show locations where existing must be replaced.

1.3 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain steel framing members for gypsum board assemblies from a single manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials inside under cover, dry, and protected against damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
 - 1. Steel Framing and Furring: Member of the CSSA or SFIA supplying certified products meeting the following specification requirements

2.2 STEEL FRAMING FOR WALLS AND PARTITIONS

- A. Provide steel framing members complying with the following requirements:
 - 1. Component Sizes and Spacings: Comply with ASTM C754 under the following maximum deflection and lateral loading conditions:
 - a. Maximum Deflection at 5 pound-foot per square foot:
 - 2. Protective Coating: G-40 hot-dip galvanized coating per ASTM A653.
- B. Steel Studs and Runners: ASTM C645
- C. Steel Rigid Furring (Hat) Channels: ASTM C645, hat-shaped, 7/8-inch deep, 20 gage.
- D. Fasteners for Metal Framing: Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated.
- E. Unless indicated otherwise, metal stud framing shall be formed from 20 gage steel.

2.3 MISCELLANEOUS MATERIALS

- A. Isolation Gaskets: Minimum 1/4 inch thick closed-cell neoprene foam. Width to match track bottom.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLING STEEL FRAMING, GENERAL

- A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C754 and with ASTM C840 requirements that apply to framing installation.
- B. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with recommendations of gypsum board manufacturer.
- C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement. Use vertical sliding clip application or use of deflection track and plate track two-piece system, or slip-joint with U-channel.
 - 1. Where building structure abuts ceiling perimeter or penetrates ceiling.
 - 2. Where partition framing and wall furring abut structure, including steel beams, steel joists, at bottom of roof decks and floor decks, except at floor.
 - a. Provide slip-type joints to attain lateral support and avoid axial loading.
- D. Install sealer gasket where detailed or scheduled.

3.3 INSTALLING STEEL FRAMING FOR WALLS AND PARTITIONS

- A. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch from the plane formed by the faces of adjacent framing.
- B. Install steel studs and furring in sizes and at spacing indicated but not less than that required by the referenced steel framing installation standard to comply with maximum deflection and minimum loading requirements specified.
 - 1. Install metal studs at 16 inches o.c. at partitions scheduled to receive tile finishes.
- C. Install steel studs so that flanges point in the same direction and so that leading edges or ends of each gypsum board can be attached to open (unsupported) edges of stud flanges first.

END OF SECTION 09 2216

SECTION 09 2900
GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Gypsum board
 - 2. Fiberglass mat, water-resistant gypsum tile backer
 - 3. Tile backer (Cement board)

1.2 DEFINITIONS

- A. Gypsum Board Construction Terminology: Refer to ASTM C11 and GA-505 for definitions of terms related to gypsum board assemblies not defined in other referenced standards.

1.3 QUALITY ASSURANCE

- A. Refer to "Recommended Specification on Levels of Gypsum Board Finish" published by the Gypsum Association for finish levels specified.
- B. Fire-Test-Response Characteristics: Where indicated, provide assemblies tested for fire resistance per ASTM E119.
 - 1. Fire Resistance Ratings:
 - a. GA File Numbers in GA-600 "Fire Resistance Design Manual"
 - b. UL "Fire Resistance Directory"
 - c. Other nationally recognized testing agency
- C. Replace all board that has become wet at any point prior to the Date of Substantial Completion, including board that has been installed and finished.
 - 1. Exception: Installed sheathing designed for exposure to the elements, within time limits established by ASTM C1280. Longer times must be approved by the building officials.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials inside under cover, dry, and protected against damage. Stack panels flat to prevent sagging.
- B. Handle panels to prevent damage to edges, ends, and surfaces.
- C. Do not bend or otherwise damage metal trim accessories.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 or with gypsum board manufacturer's recommendations, whichever is more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Ventilate building spaces as required for drying joint treatment. Avoid drafts during hot dry weather to prevent finishing materials from flash drying.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD PRODUCTS

- A. No Chinese gypsum board products permitted.
- B. Provide gypsum board of types indicated in maximum lengths available, minimizing joints.
 - 1. Thickness: Provide gypsum board 5/8-inch thick to comply with ASTM C840 for application system and support spacing indicated.
- C. Gypsum Wallboard: ASTM C1396 and as follows:
 - 1. Type X. Mold resistant where indicated
 - 2. Edges: Tapered
- D. Fiberglass Mat, Water-Resistant Gypsum Tile Backer: ASTM C1178
 - 1. DensShield Tile Backer by Georgia Pacific
 - 2. GlasRoc by CertainTeed Corporation
 - 3. e²XP Tile Backer by National Gypsum Company
- E. Tile Backer: ANSI A118.9 (ASTM C1325 for floors)
 - 1. Durock by United States Gypsum Company
 - 2. PermaBase by National Gypsum Company
 - 3. Wonderboard by Custom Building Products

2.2 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047
 - 1. Material: Sheet steel zinc-coated by hot-dip process
 - 2. Shapes as required for renovation location

2.3 JOINT TREATMENT MATERIALS

- A. General: Complying with ASTM C475
- B. Joint Tape for Panels:
 - 1. Fiberglass-Mat Faced Gypsum Sheathing: Glass mesh, 10 by 10
 - 2. Cement Board: Alkali resistant glass fiber reinforcement mesh
 - 3. All other Locations: Paper
- C. Setting-Type Joint Compounds for Gypsum Board: Factory-packaged, job-mixed, chemical-hardening powder products formulated for uses indicated.
 - 1. Where setting-type joint compounds are indicated as a taping compound only or for taping and filling only, use formulation that is compatible with other joint compounds applied over it.
 - 2. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.
- D. Joint Compound for Tile Backer Panels:
 - 1. Glass-Mat Water Resistant Tile Backer: As recommended by board manufacturer
 - 2. Cement Board: As recommended by board manufacturer

2.4 MISCELLANEOUS MATERIALS

- A. Provide miscellaneous materials for gypsum board construction that comply with referenced standards and manufacturer's recommendations.
- B. Steel drill screws complying with ASTM C1002 for the following applications:
 - 1. Fastening gypsum board to steel members less than 0.03 inch thick.
 - 2. Fastening gypsum board to gypsum board.
- C. Steel drill screws complying with ASTM C954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.
- D. Cementitious Backer Units: Corrosion-resistant-coated steel drill screws of size and type recommended by board manufacturer.

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

- A. Comply with ASTM C840.
 - 1. Do not install imperfect, damaged, or damp panels.
- B. Install wall/partition panels to minimize the number of abutting end joints or avoid them entirely. Stagger abutting end joints not less than one framing member in alternate courses of board.
- C. Tile Backer Board Installation:
 - 1. Install on metal studs that are spaced at 16 inches o.c., maximum.
 - 2. Attach with minimum 1 1/4 inch screws at 8 inches o.c. for walls and 6 inches o.c. for ceilings.
 - 3. Hold bottom 1/4 inch from shower pan or floor substrate
 - 4. Finish joints by pre filling with latex-fortified mortar, embed glass fiber tape, and smooth joint.
 - 5. Fit around penetrations with 1/4 inch maximum space
- D. Install one layer of asphalt felt, ASTM D226, Type I behind all cement tile backer board to form a water barrier between the board and the stud cavity. Exception: No moisture barrier required when Dens Shield Tile Backer is used.
- E. Install gypsum panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- F. Locate edge or end joints over supports. Do not place tapered edges against cut edges or ends. Avoid joints at corners of framed openings where possible.
- G. Attach gypsum panels to framing provided at openings and cutouts.
- H. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.2 GYPSUM BOARD APPLICATION METHODS

- A. Single-Layer Application:
 - 1. Partitions/walls: Apply gypsum panels vertically or horizontally. Use maximum length panels to minimize end joints.

2. Fastening Method: Steel drill screws
 3. Cut openings/renovation repairs large enough to span a minimum of one complete stud space so all edges have secure edge blocking.
- B. Wall Tile Substrates: For substrates indicated to receive thin-set ceramic tile and similar rigid applied wall finishes, comply with manufacturer's installation directions.

3.3 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges, fasten to framing with the same fasteners used for panels. Otherwise, fasten trim accessories according to accessory manufacturer's directions for type, length, and spacing of fasteners.
- B. Install corner beads (bullnose beads) at outside corners.
- C. Install edge trim where edge of gypsum panels would otherwise be exposed or semi-exposed. Provide edge trim type with face flange formed to receive joint compound except where other types are indicated.
1. Install LC-bead where gypsum panels are tightly abutted to other construction and back flange can be attached to framing or supporting substrate.
 2. Install L-bead where edge trims can only be installed after gypsum panels are installed.
 3. Install U-bead where indicated.
- D. All trim, accessories and corner beads shall be installed using screws. "Crimping" tool and staple attachment is not allowed.

3.4 FINISHING GYPSUM BOARD ASSEMBLIES

- A. Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration and levels of gypsum board finish indicated.
- B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.
- C. Apply joint tape over gypsum board joints and to trim accessories with concealed face flanges as recommended by trim accessory manufacturer and as required to prevent cracks from developing in joint compound at flange edges.
- D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.
1. Level 0: For temporary construction only.
 2. Level 4: For light textured finishes, wall coverings, and painted finishes.

3.5 CLEANING AND PROTECTION

- A. Remove any residual joint compound from adjacent surfaces.
- B. Provide final protection and maintain conditions to ensure gypsum board assemblies remain without damage or deterioration at the Date of Substantial Completion.

- C. Remove and replace panels that are wet, moisture damaged, or mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 2900

SECTION 09 3000
TILING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Porcelain tile
 - 2. Marble Thresholds
 - 3. Waterproof membrane

1.2 REFERENCES

- A. 2016 TCNA Handbook for Ceramic Stone, and Glass Tile Installation by the Tile Council of North America, Inc. (TCNA).

1.3 PERFORMANCE REQUIREMENTS

- A. Dynamic Coefficient of Friction on Walkway Surfaces: 0.42 minimum threshold per ANSI A137.1 AcuTest test protocol when used with slightly soapy water solution, in level interior spaces expected to be walked on when wet. 0.44 on sloped surfaces.
- B. Static Coefficient of Friction on Walkway Surfaces: Provide the following values as determined by ASTM C1028 for tile that doesn't meet the DCOF AcuTest test protocol:
 - 1. Flat Dry Walking Surfaces: Minimum 0.6
 - 2. Flat Surfaces Intended for Wet Tile: Minimum 0.42

1.4 SUBMITTALS

- A. Product Data:
 - 1. One current TCNA Handbook on Site for reference
- B. Shop Drawings: Waterproofing details
- C. Samples:
 - 1. Color samples showing the full range of colors, textures, and patterns in all price groupings. For the glazed ceramic tile use Color Groups 1 and 2 for the field and all color groups for accent and trim colors. Include samples of accent and trim involving color selection.
 - 2. Color samples consisting of actual sections of grout (cured).
- D. Certification or other proof of installers attending training session.
- E. Moisture test results

1.5 QUALITY ASSURANCE

- A. 2016 TCNA Handbook or later, to be available on site at the request of the Architect or Owner
- B. Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this Project.

1. Installers are required to attend a training session reviewing industry standards applicable to installations for this Project.
 2. At a minimum, installers (one installer in each area) shall be Journeymen Tile Layers, as recognized by the Department of Labor, tested as part of the Certified Tile Installer Program offered thru the Ceramic Tile Education Foundation, or equivalent programs offered by the National Tile Contractors Association (Five star Contractor Program), the Tile Contractor's Association of America (Trowel of Excellence), or Tile-installer Thin-set Standards verification thru the University of Ceramic Tile and Stone.
 - C. Obtain each color, grade, finish, type, composition, and variety of tile from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
 - D. Test sealants to show compliance with ASTM C920. Show sealants have been tested for performance per ASTM C719, C794, and C1248.
 - E. Do not use mortars for leveling or truing substrates unless product is specifically designed for that purpose.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use.
 - B. Prevent damage or contamination to materials by water, foreign matter, and other causes.
- 1.7 PROJECT CONDITIONS
- A. Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained per manufacturer's written instructions.
 - B. Shade work areas from direct sunlight to prevent rapid evaporation caused by excessive heat.
- 1.8 EXTRA STOCK
- A. Deliver tile, consisting of not less than 2 percent of the total quantity of each type, size, pattern, and color installed, to the Owner. Furnish tile in original boxes, properly marked.
 - B. Supply two pieces of each shape of trim tile used, by type, shape and color, in clean cartons for Owner's use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Refer to Finish Schedules for manufacturer, style, and color of tile(s) required.
- B. Tile-Setting and Grouting Materials:
 1. American Olean Tile Co., Inc.
 2. Ardex Engineered Cements

3. TEC a division of H. B. Fuller Co.
 4. H. B. Fuller Co.
 5. Laticrete International, Inc.
 6. Mapei Corporation
 7. Summitville Tiles, Inc.
 8. Upco Co. Div., Emhart Corp.
- C. Tile Accessories: Schluter-Systems or Architect's approved equal.
- D. Substitutions: Where a basis of design has been specified, an equal or superior product may be accepted only upon review and written acceptance by the Architect.
1. Submit substitutions in accordance with Contract Documents
 2. Include actual samples of proposed tile (3 total of each tile type being requested)
 3. All substitutions for tile shall have samples submitted within 10 days of the date of the Notice to Proceed.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
- B. Colors, Textures, and Patterns:
1. Architect shall select appearance characteristics from manufacturer's standard products, regardless of differing price groupings.
 2. Architect reserves the right to use a maximum of 3 colors in each room/space at no additional cost.
 3. Grout color as selected by Architect from all available price groups.
- C. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

2.3 TILE PRODUCTS

- A. Porcelain Tile:
1. Composition: Porcelain, ISO 13006 Groups Ala and Bla for water absorption and dimensional tolerances
 2. Module Size: As indicated on Finish Schedule (Large Format is any tile 15 inches or more on any side. Heavy Format is defined as tile weighing over 5 lbs. per square foot. Thin tile has a thickness of 6mm or less.)
 3. Edges rectified

2.4 SETTING MATERIALS

- A. Improved Latex-Portland Cement Mortar: ANSI A118.15
1. Mixture of Dry-Mortar Mix and Latex Additive: Mixture of prepackaged dry-mortar mix and liquid acrylic latex additive.
 2. For wall applications, provide non-sagging, latex-portland cement mortar

complying with ANSI A118.15.

3. Use specifically formulated setting mortars for LHT and TPT.
4. Porcelain Tile: Minimum 400 psi mix

B. Epoxy Mortar: ANSI 118.3, ISO Category R.

C. Water: Clean and drinkable

2.5 GROUTING MATERIALS

A. Standard Sanded Cement Grout: ANSI A118.6, for joints 1/8 inch or wider.

B. Standard Unsanded Cement Grout: ANSI A118.6, for joints less than 1/8 inch

C. Latex-Portland Cement Grout: ANSI A118.6 for materials described in Section H-2.4, composed as follows:

1. Sanded Dry-Grout Mix and Latex Additive: Factory-prepared, dry-grout mix and liquid acrylic latex additive.

D. One hundred percent solids epoxy grout, complying with ANSI A118.3.

E. Color: Selected by Architect.

2.6 MISCELLANEOUS MATERIAL

A. Latex Underlayment: Quick set type, as recommended by membrane manufacturer, as required to provide positive drainage to floor drains.

B. Waterproofing Membranes:

1. Thin-Set Locations: Noble Seal TS, 30 mil thick, non-plasticized chlorinated polyethylene (CPE) thermoplastic sheet membrane by the Noble Company
2. LHT: Chloraloy 240, 40 mil thick, non-plasticized chlorinated polyethylene (CPE) thermoplastic sheet membrane by the Noble Company or Kerdi-Drain by Schluter Systems
3. Membrane shall comply with ASTM D 4068.
4. Install waterproof membrane on sloped mortar to provide minimum slope to drains as required by the manufacturer's written installation instructions.

C. Sills at Restroom Floors

1. Marble Thresholds: White, honed marble complying with MIA Group "A" requirements for soundness; ASTM C 503 abrasion resistance where exposed to foot traffic, a minimum hardness of 10 per ASTM C 241.
2. Mortar: ASTM C270, Type S.
3. Adhesive: Latex-modified thin set mortar. Laticrete 211/4237 by Laticrete International Company or equal.

D. Sealant requirements per ASTM C920. Refer to Division 07 Section, Joint Protection for other requirements. Provide manufacturer's recommended primers and backers for specific joints.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Prior to installing tile, inspect surfaces to receive tile. Do not proceed with installation until such defects or conditions have been corrected.
 - 1. Verify walls have no efflorescence
 - 2. Examine drains, and clamping devices to verify that they are in a condition ready to receive waterproofing membrane with no deficiency that could result in a potentially defective installation
 - 3. Verify wall substrate surfaces are a maximum of 1/8 inch in 10 feet, any direction.
 - 4. Verify tolerances meet manufacturer's recommendations for LHT which may be more stringent than for thin set applications.
- B. All flattening must be completed prior to any cleavage membranes or waterproofing membranes are installed.
- C. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.2 PREPARATION

- A. Consult Architect to establish floor levels and required pitch to drains and floor recesses before setting any work. Maximum surface variation shall not exceed 1/4 inch in 10 feet, non-accumulative.
 - 1. Verify variations with manufacturer for LHT applications
- B. Clean rough concrete slab surface of drippings and other debris. Roughen surface if necessary. Wash thoroughly with clean water permitting concrete to become saturated. Slush with neat cement grout to insure good bond.
 - 1. Neutralize any trace of strong acid or alkali (PH level 7 to 9).
- C. When necessary because of unevenness or roughness of base, or to bring tile to proper flatness, install leveling coat and permit to set and harden, wet cure.
- D. Provide tape reinforcement at joints including inside corners and outside corners.

3.3 LAYOUT

- A. Determine locations of movement joints before starting tilework.
- B. Lay out tile work so as to minimize cuts less than one-half tile in size.
- C. Locate cuts in both walls and floors so as to be least conspicuous.
- D. Lay out tile wainscots to next full tile beyond dimensions shown.
- E. Align wall joints to give straight, uniform grout lines, plumb and level.
- F. Align floor joints to give straight uniform grout lines parallel with walls.
- G. Make joints between tile sheets same width as joints within sheets so extent of each sheet is not apparent in finished Work.
- H. Porcelain tile can have large variances in sizing. Do not mix sizes and types of tiles in pattern areas. Joints that do not line up or joint widths that vary will be unacceptable.
 - 1. Joint Width: 1/4 inch wide, unless otherwise recommended.

3.4 MIXING MORTARS AND GROUT

- A. Proportion mixes in accordance with latest ANSI standard specifications.
- B. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions using mixing equipment designed for optimum performance characteristics for installations indicated.
- C. Add materials, water, and additives in accurate proportions according to manufacturer's written instructions.
 - 1. Liquid latex additive shall be added undiluted.

3.5 SETTING METHODS

- A. Comply with parts of ANSI A108 series of tile installation standards in "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
- B. Install floor tile, thresholds and base in accordance with Tile Council of North America recommendations.
- C. All areas must have a crack isolation membrane installed under 100 percent of tiled floor area. Areas receiving a shower pan or waterproofing membrane are excluded.
- D. Concrete Subfloors
 - 1. Slabs on Grade (Thin-Set Method): TCNA F113 dry-set mortar with Tile Installation Specification ANSI A108.5.
 - 2. LHT Mortar Bed Method: Latex-portland cement mortar bond coat using the mortar bed to assist in filling the irregular space between the tile and the underlayment, ANSI 118.15.
- E. Walls
 - 1. Cement Board (Thin-Set Method): TCNA W244C Cementitious backer; with Tile Installation Specification ANSI A108.11.
 - 2. Fiber Cement Board (Thin-Set Method): TCNA W244F Cementitious bond coat, vapor retarder membrane; with Tile Installation Specification ANSI A108.4.
 - 3. Fiber Cement Board (Thin-Set Method): TCNA W244F Cementitious bond coat, vapor retarder membrane except formulated specifically for LHT installations; with Tile Installation Specification ANSI A108.4.
- F. Sound each tile after set. Replace all tiles sounding hollow.

3.6 INSTALLATION, GENERAL

- A. Perform cutting and drilling of tile without marring visible surfaces. Grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
 - 1. Smooth exposed cut edges.
- B. Extend tile work into recesses and under or behind equipment and fixtures. Terminate work at obstructions, edges, and corners without disrupting pattern or

joint alignments.

- C. Ensure tile joints are uniform in width, subject to normal variance in tolerance allowed in tile size. Ensure joints are watertight, without voids, cracks, excess mortar or grout.
- D. Locate expansion, control, contraction, and isolation joints, during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
 - 2. Prepare joints and apply sealants to comply with requirements of Division 07 Section, Joint Protection.
 - 3. Isolate repaired structural cracks and shrinkage cracks per TCNA Detail F125
- E. Allow tile to set for a minimum of 48 hours prior to grouting. Follow manufacturer's directions if longer waiting period is required.
- F. Curing:
 - 1. Flattening Beds: Moist cure for 20 hours at minimum 70° F for dry-set mortar installations. Allow to dry before setting tile. Environmental conditions and manufacturer may require longer cure times.

3.7 GROUTING

- A. Install grouting in accordance with ANSI A108.10 (A108.6 for epoxy) and manufacturer's written instructions during application and cleaning.
 - 1. Floor application shall receive epoxy type grout and wall applications shall receive latex type grout.
- B. Rinse tile work with clean water before and after using chemical cleaners.

3.8 WATERPROOFING MEMBRANES

- A. Install in accordance with manufacturer's written installation instructions.
- B. Install waterproof membrane on sloped mortar to provide minimum slope to drains as required by the manufacturer's written installation instructions.
- C. Upon completion of work, test for leaks by plugging the drain or damming areas and filling with water a minimum of 4 inches at curbs for a period of 24 hours. Inspect for leakage. Make necessary adjustments to stop all leakage and re-test until watertight, before mortar bed is installed.

3.9 THRESHOLDS

- A. Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile. Use latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish
- B. Spot-apply adhesive generously enough to achieve full contact when stool is pressed into flat and true position.
- C. Bed seal perimeter joints at walls with mildew-resistant silicone sealant.
- D. At the completion of setting, marble work shall be thoroughly washed down using

a stiff bristle brush or synthetic 3M finishing pads, nonfat detergent, and water.
Do not use acid solution.

3.10 CLEANING AND PROTECTING

- A. Clean tile and grout as recommended by manufacturer. Remove all traces of grout.
- B. Cover exposed hardware with a heavy coating of Vaseline to protect the metal from the possible effects of the acid or its fumes, when acid solutions are recommended by manufacturer to clean the face of finished tile work of surplus grouting or pointing mortar. Do not use acid solution for cleaning glazed tile.
- C. Protect the tile against damage after installation. Damaged tile that appears in the finish work prior to the date of Substantial Completion is to be repaired or replaced. Protect adjoining areas and surfaces.

END OF SECTION 09 3000

SECTION 09 5100
ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes acoustical ceilings and related items.

1.2 SUBMITTALS

- A. Samples:
1. Manufacturer's standard sample size for each panel type specified. Submit sample matching existing for Architect and Owner's approval.
 2. Manufacturer's standard sample for grid showing all components in grid system.
- B. Sample warranty

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design, and extent to that indicated for Project.
- B. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- C. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- D. Fire Performance Characteristics:
1. Surface Burning Characteristics: Tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
 - a. Flame Spread: 25 or less.
 - b. Smoke Developed: 50 or less.
 2. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
- E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components, and partition system.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

- B. Before installing acoustical ceiling units, permit them to reach room temperature and stabilized moisture content.
- C. Handle acoustical ceiling units to avoid chipping edges or damaging units.

1.5 PROJECT CONDITIONS

- A. Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.6 EXTRA MATERIALS

- A. Furnish 02 percent extra materials of the quantity installed for ceiling panels, suspension system, and hold down clips.

1.7 WARRANTY

- A. Acoustical Panel: Submit a written warranty executed by the manufacturer agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include sagging and warping, and rusting of the suspension system and components.
- B. Warranty Periods:
 - 1. Acoustical Panels: Ten (10) years from the Date of Substantial Completion.
 - 2. Grid: Ten (10) years from the Date of Substantial Completion.
 - 3. Acoustical panels and grid system provided by the same manufacturer shall be warranted for fifteen (15) years from the Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acoustical ceiling panels:
 - 1. Armstrong World Industries
 - 2. Certainteed Ceilings
 - 3. USG Interiors Inc.
- B. Acoustical ceiling grid systems:
 - 1. Armstrong World Industries
 - 2. Certainteed Ceilings
 - 3. Donn "DX" by USG Interiors Inc.

2.2 MATERIALS

- A. Acoustical Ceiling Tile: Shall meet ASTM E 1264 classifications as designated. Tile shall carry the humidity resistant performance characteristics. Finish shall be factory applied, washable, white latex paint, unless noted otherwise.
- B. Refer to Finish Schedule on Drawings for style. The idea is to match existing to the fullest extent possible.

2.3 CEILING SUSPENSION SYSTEMS

- A. Suspension systems shall meet or exceed the requirements of ASTM C 635 for dimensional tolerances, coatings and finishes, and load carrying capabilities. Individual component deflection shall not exceed 1/360 of the span.
- B. Finishes and Colors: Provide hot-dipped galvanized finish (G-30 minimum) on all ceiling suspension components. Exposed surfaces of suspension system components shall receive white baked-on enamel paint.
 - 1. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
 - 2. Provide suspension system suitable for severe environmental conditions, according to ASTM C635.
- C. Grid Face: 15/16 inch, UNO
- D. Wall Channel: Hemmed edge type.
- E. Rough Suspension Materials
 - 1. Metal Channel Runners: 1-1/2", 475 pounds per thousand lineal feet and 3/4", 300 pounds, per thousand lineal feet, cold rolled painted channels.
 - 2. Hanger and Tie Wire: Not less than 12 gauge galvanized soft annealed steel.
- F. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated.
 - 1. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attachment of hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing laboratory.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and structural framing to which ceiling system attaches. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
- B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Border to be 12 inches or greater, and comply with reflected ceiling plans.
- C. Laid out grid, coordinate for lighting fixtures and existing mechanical systems

3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 according

to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

- B. Install suspension wires 4 foot on center, maximum, in each direction. Secure suspension hangers to building structure above. For lighting fixtures, install hanger wires to runners at all 4 corners of fixtures. Do not attach hanger wire to metal deck, electrical equipment, mechanical equipment or related support systems.
 - 1. Maximum splay of hanger wire is 10 degrees and must be offset per ASTM C 636.
- C. Install metal channel by saddle tying hanger wire or with leveling clips to a leveling tolerance of 1/8" in 12 feet each way.
- D. Install grid suspension system in strict accordance with the manufacturer's recommendations.
- E. Install wall angle at intersection of suspended ceiling and vertical surfaces. Where plenum space occurs above ceiling, apply continuous ribbon of acoustical adhesive or caulking compound on top of vertical wall angle after installation.
- F. Install acoustical units in a true and even plane, in straight line courses following lay out pattern shown in reflective ceiling plan. Fit border units neatly against vertical surfaces.
- G. Seal joints in acoustical units around pipes, ducts, and electrical outlets with caulking compound.
- H. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.
 - 1. Screw-attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.

3.4 CLEANING

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.
- B. Just prior to the Date of Substantial Completion, remove and replace broken, skinned, damaged, or dirty tile with new.

END OF SECTION 09 5100

SECTION 09 6519
RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Vinyl composition tile (VCT)
 - 2. Vinyl coved base

1.2 SUBMITTALS

- A. Product Data: Manufacturer's published data including maintenance data.
- B. Samples: Manufacturer's color charts consisting of actual tiles or sections of tiles showing full range of colors and patterns available for each type of resilient floor tile and base indicated.
- C. Results from Calcium Chloride Test and Bond and Moisture Test.
- D. Installer Statement of Compliance: Certify flooring is installed in accordance with manufacturer's installation instructions, including moisture test values, to validate manufacturer's warranty.
- E. Sample warranty

1.3 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain each type, color, and pattern from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- B. Contractor Qualifications:
 - 1. Employ contractors skilled in the successful installation of the specified materials and accessories on similar projects for a minimum of five years.
 - 2. Installing company shall employ a minimum of three qualified installers each with a minimum of two years experience installing VCT flooring.
- C. Fire Performance Characteristics: Determined by testing products per ASTM test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Critical Radiant Flux: 0.45 watts per sq. cm or more per ASTM E 648.
 - 2. Smoke Density: Less than 450 per ASTM E 662.
 - 3. Flame Spread: Less than 75 per ASTM E 84.
- D. Calcium Chloride Test: Measure moisture vapor emissions from the concrete slab on grade, prior to the installation of the resilient flooring. Maximum moisture emissions levels shall be as recommended by the resilient flooring manufacturer.
- E. Bond and Moisture Tests: Conduct bond and moisture tests prior to installation. Bond and moisture tests shall be in accordance with manufacturer's recommendations. Provide frequency of tests as recommended by manufacturer.

1. Test concrete slabs in accordance with ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride to ensure emission of no more than 3 lbs of water/1000 sf of slab in 24-hour period.
2. When test cannot be conducted under temperature and humidity conditions that will prevail under normal conditions, provide and maintain the 75 Deg F (+/- 5 Deg F) temperature and 50 percent (+/- 10 percent) humidity for 48 hours prior to and during the test.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Site in original unopened containers each bearing names of product and manufacturer, project identification, and shipping and handling instructions.
- B. Store materials in dry spaces protected from the weather. Maintain ambient temperatures between 50 and 90 degrees F.
- C. Store tiles on flat surfaces. Condition materials in spaces where they will be installed a minimum of 48 hours prior to installation.

1.5 PROJECT CONDITIONS

- A. Maintain a minimum temperature of 70 degrees F in spaces to receive tiles for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. After this period, maintain a temperature of not less than 55 degrees F.
- B. Do not install tiles until they have been conditioned to the space where they are to be installed.
- C. Close spaces to traffic during tile installation.

1.6 SEQUENCING AND SCHEDULING

- A. Do not deliver or install products until building is enclosed, wet work completed, and HVAC system is operating and maintaining temperature and humidity at occupancy level during remainder of construction period.
- B. Install tiles and accessories after other finishing operations, including painting, have been completed.
- C. Do not begin installation until concrete slabs have cured, dry, and able to bond with adhesive as determined by manufacturer.

1.7 EXTRA MATERIALS

- A. Furnish, not less than one box for each 50 boxes or fraction thereof, of each class, wearing surface, color, pattern and size of resilient floor tile installed.

1.8 WARRANTY

- A. Manufacturer's Warranty: Standard warranty covering manufacturing defects and installation integrity: Installation integrity is defined as products installed in accordance with the manufacturer's installation manual.
 1. Flooring: Five years minimum
 2. Base: One year minimum

- B. Installer's Warranty: Guarantee flooring and base installation against defects in installation, workmanship and loss of adhesion for one year.
- C. Warranty period begins on the Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TILE AND ACCESSORIES

- A. Vinyl Composition Tile: ASTM F 1066 (nonasbestos formulated), Class 2 (through-pattern tile); tiles 12 by 12, 0.125 inch thick.
 - 1. Patterns and colors selected by the Architect.
- B. The following manufacturers will be acceptable
 - 1. Tarkett
 - 2. Armstrong
 - 3. Mannington
 - 4. Vinylasa Commercial

2.2 RESILIENT BASE

- A. Manufacturers:
 - 1. Johnsonite
 - 2. Burke Industries
 - 3. Roppe Rubber Corporation
 - 4. Flexco Co.
 - 5. Armstrong
 - 6. Mannington
- B. Vinyl Cove Base: 4 inches in height by roll stock and 1/8-inch thick, ribbed back, rounded top, and set on type. (4 foot length base material is not acceptable.)
 - 1. Provide molded corners 4 inches in height by 4 inches in length each way for internal and external corners.

2.3 MISCELLANEOUS MATERIALS

- A. Adhesive: Recommended by manufacturer
- B. Subfloor Filler: Portland cement-based latex underlayment; type recommended by flooring manufacturer.
- C. Cleaner: "Spal Concentrate" by Huntington Laboratories or approved equal, required for vinyl composition tile.
- D. Floor Polish: Equinox by Pioneer/Eclipse.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas where installation of tiles will occur. Do not proceed until unsatisfactory conditions have been corrected.
- B. Concrete Subfloors: Verify concrete slabs comply with ASTM F 710 and the following:

1. Dry and free of curing compounds, sealers, hardeners, and other materials whose presence would interfere with bonding of adhesive. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by tile manufacturer.
2. Finishes of subfloors comply with tolerances and other requirements specified in Division 03 Section, Cast-In-Place Concrete for slabs receiving resilient flooring.
3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits of any kind.
4. Provide a 100 percent solids epoxy membrane over concrete substrates that do not meet the required moisture vapor transmission rate, as recommended by flooring manufacturer to maintain warranty conditions.

3.2 PREPARATION

- A. Comply with manufacturer's installation specifications to prepare substrates to receive tile.
- B. Use trowelable leveling and patching compounds per tile manufacturer's directions to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, by using a terrazzo or concrete grinder, a drum sander, or a polishing machine equipped with a heavy-duty wire brush.
- D. Broom and vacuum substrates immediately before tile installation. Following cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust.
- E. Apply concrete slab primer, if recommended by flooring manufacturer, prior to applying adhesive. Apply according to manufacturer's directions.

3.3 INSTALLATION

- A. Comply with tile manufacturer's installation directions and other requirements indicated applicable to each type of tile installation scheduled.
- B. Lay out tile from center marks established with principal walls so tiles at opposite edges of room are of equal width. Adjust to avoid using widths less than half of a tile. Install tiles square with room axis, unless otherwise indicated.
 1. Install vinyl composition tiles in a parquet pattern.
- C. Match tiles for color and pattern by selecting tiles from cartons in same sequence as manufactured and packaged, if so numbered. Cut tiles neatly around all fixtures. Discard broken, cracked, chipped, or deformed tiles.
 1. Lay tiles in pattern with respect to location of colors, patterns, and sizes as indicated on Drawings.
- D. Scribe, cut, and fit tiles to butt tightly to vertical surfaces, permanent fixtures, built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings.
- E. Extend tiles into toe spaces, door reveals, closets, and similar openings.

- F. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other nonpermanent marking device.
- G. Install tiles on covers for telephone and electrical ducts, and similar items occurring within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on these covers.
- H. Set tile to substrates without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed tile installation.
- I. Use full spread of adhesive applied to substrate in compliance with tile manufacturer's directions for trowel notching, adhesive mixing, and adhesive open and working times. Spray applied adhesives are not allowed.
- J. Hand roll tiles where required by tile manufacturer.

3.4 RESILIENT WALL BASE INSTALLATION

- A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
- C. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- D. Do not stretch wall base during installation.
- E. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.
- F. Premolded Corners: Install premolded corners before installing straight pieces.
- G. Job-Formed Corners: Not allowed

3.5 CLEANING AND PROTECTION FOR VCT

- A. Perform the following operations immediately after completing tile installation:
 - 1. Allow adhesive to dry for 48 hours after installation.
 - 2. Remove visible adhesive and other surface blemishes using cleaner recommended by tile manufacturers.
 - 3. Sweep or vacuum floor thoroughly.
 - 4. Do not wash floor until after time period recommended by resilient floor tile manufacturer.
 - 5. Damp-mop tile to remove black marks and soil.
 - 6. Tiles with debris trapped underneath, shall be removed and replaced, prior to cleaning.
- B. Protect flooring against mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods indicated or recommended by tile manufacturer.

1. Apply protective floor wax (three coats) to tile surfaces that are free from soil, visible adhesive, and surface blemishes.
 - a. Use commercially available, metal, cross-linked acrylic product acceptable to tile manufacturer.
 - b. Coordinate selection of floor polish with Owner's maintenance service.
 2. Cover tiles with undyed, untreated building paper until inspection for Substantial Completion.
 3. Do not move heavy and sharp objects directly over tiles. Place plywood or hardboard panels over tiles and under objects while they are being moved. Slide or roll objects over panels without moving panels.
- C. Clean tiles not more than 4 days prior to dates scheduled for inspections intended to establish date of Substantial Completion in each area of Project. Clean tiles using method recommended by manufacturer.
1. Strip protective floor polish that was applied after completing installation prior to cleaning.
 2. Reapply floor polish after cleaning.

END OF SECTION 09 6519

SECTION 09 9000
PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes painting and finishing work including restoration coating of existing surfaces.

1.2 DEFINITIONS

- A. The terms "paint", "protective coating", etc. include paints, special coatings, stains, sealers, fillers, and other types of coatings and coating materials whether used as primers, barrier, intermediate, or finish coats individually or as a system.
- B. Exposed Surfaces: Surfaces exposed to view when permanent or built-in fixtures, covers, grilles, mechanical and electrical equipment housings, ducts and conduits, are in place; surfaces in back of movable equipment and furniture; and interior surfaces of ducts visible through grilles, interior surfaces visible through equipment covers, and blank-off panels.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Materials List: An inclusive list of required coating materials. Indicate each material and cross reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 - 1. Prepare coating systems schedule proposed on the basis of the surfaces, types of materials, and their dry film thickness. List the name and product number for the products proposed for each use.
 - 2. This shall in no way be construed as permitting substitution of materials for those specified or approved for this Work by the Architect.
 - 3. Provide a list of coating systems for all existing surfaces to be re-coated.
- C. Color Chip Catalog: Provide Architect with a complete current color chip catalog from which colors may be selected. Manufacturers may fulfill this requirement by updating catalog that Architect may presently have in his possession.
- D. Draw Downs: Two 9 x 9 inch samples of each selected color and texture.
- E. Manufacturer's Recommendations: In each case where material proposed is not the material specified or specifically described as an acceptable manufacturer in this Section of these Specifications, submit for the Architect's review the current recommended method of application published by the manufacturer of the proposed material.
 - 1. Manufacturer Inspection report showing the substrate has been reviewed; is properly prepared, and compatible for the scheduled coating system.
- F. Attic Stock

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.
 - 1. Applicator shall have minimum two years experience painting with existing coating systems experience, similar to the scope of this Project
- B. Single Source Responsibility: Provide primers and undercoat materials produced by the same manufacturer as the finish coats.
 - 1. Do not mix products from differing manufacturers unless specifically permitted and accepted in writing by the involved manufacturers. Such acceptance shall not affect printed recommendations or warranties. Provide such acceptances prior to commencing work.
- C. Material Quality: Provide the manufacturer's best quality materials of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be accepted.
- D. Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
- E. Codes and Standards: In addition to complying with pertinent codes and regulations, comply with the Painting and Decorating Contractors of America (PDCA) in their "PDCA Industry Standards" unless more stringent requirements are specified in the Contract Documents.
- F. Environmental Requirements:
 - 1. VOC emissions from architectural paints and coatings shall not exceed the VOC and chemical component limits of Green Seal Standard GS-11 requirements.
 - a. Non-flat 150 g/l
 - b. Flat 50 g/l
 - c. Exceptions: Specialty coatings where durability is the dominant priority.
 - 1) Restrooms with epoxy paint system
 - 2. Paints shall be manufactured without the use of any formaldehyde precursors.

1.5 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Do not apply materials when the surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer
- C. Do not apply exterior coating during rain, or when relative humidity is outside the humidity ranges required by the paint product manufacturer
- D. Provide adequate lighting during the application of any coating system, minimum

level shall be that level that will be required for the intended use of the space.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver paint materials to the job site in their original unopened containers with labels intact and legible at time of use.
- B. Store materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area.
 - 1. Provide a 10B:C fire extinguisher in the immediate vicinity of the storage area.
 - 2. Store only the approved materials at the job site and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.
 - 3. Use means necessary to ensure the safe storage and use of paint materials and the safe disposal of waste.

1.7 EXTRA STOCK

- A. Deliver to the Owner 1 gallon of extra stock of each type, color, and gloss of material used. Deliver sufficient unmixed proportions of multi component materials to make minimum 1 gallon of each.
- B. Furnish extra paint materials from the same production run as the materials applied in the Work. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents including location of application.
 - 1. Furnish multi component materials in correct proportions for mixing and label parts respectively.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products specified are those known suitable for this type of work and are based on products shown on the schedules at the end of this section and require no further approval as to manufacturer or catalog number.
 - 1. Substitution requests shall include manufacturer's literature for each proposed product giving the name, generic type, descriptive characteristics, and independent testing laboratory certification for meeting or exceeding characteristics as listed on data sheets from the design basis products. Systems subject to Architect's approval.
 - 2. Substitute products shall be the highest quality grade of the various types of materials regularly manufactured by the manufacturer for indicated substrates. Substitute products may have to be a different generic type to provide performance comparable to that specified. Materials not displaying the manufacturer's identification as the highest-grade product, or not recommended by the manufacturer's lab as the best and most suitable product will not be accepted.
 - 3. Substitutions which propose decrease the film thickness or fail to meet any of the performance or other characteristics of the design basis materials will not be considered.

- B. Other Acceptable Manufacturers:
 - 1. Benjamin Moore & Company
 - 2. Glidden Professional
 - 3. PPG Paints
 - 4. Sherwin Williams

2.2 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare pigments:
 - 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating
 - 2. For good flow and brushing properties
 - 3. Capable of drying or curing free of streaks or sags
 - 4. Interior materials furnished shall produce a surface having a Class A rating for flame, fuel, and smoke.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- C. Material Compatibility: Provide primers, finish coat materials, equipment, and related materials that are compatible with one another and the substrates and existing coatings indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.
 - 1. Coordinate primed or pre-finished products recommended by manufacturer, assuring compatibility of the total systems.
 - 2. Provide barrier material over suspected noncompatible substrates as recommended by coatings manufacturer. If performance of specified finish system will be compromised due to incompatibility, remove the noncompatible finishes and re-prime. Barrier coat, removal and re-priming to be at no additional cost to Owner.
 - 3. Thinners shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.
- D. Materials not specifically indicated but required for preparation, application, or clean-up shall be of high grade commercial quality.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions under which painting work is to be applied, including coating compatibility at existing surfaces. Do not proceed with work until unsatisfactory conditions have been corrected.
 - 1. Examine and test each existing surface to be recoated and provide a recommended coating system based on field testing findings.
- B. Starting of painting work will be constructed as Applicator's acceptance of surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint surface.

- D. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- E. Test shop applied primers for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the maximums as recommended, for the types of coatings to be used, by the manufacturer.
- G. Measure pH level in concrete and stucco surfaces for compliance with manufacturer's compatible recommendations.
- H. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

3.2 SURFACE PREPARATION

- A. General
 - 1. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions, and as specified, for each substrate condition.
 - 2. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place prior to surface preparation and painting operations. Following completion of painting of each space or area, reinstall removed items.
 - a. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 - 3. Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning. Program cleaning and painting so that contaminates from cleaning process will not fall onto wet, newly painted surfaces.
 - a. Remove mildew by scrubbing with solution of tri-sodium phosphate, water and bleach unless more stringent requirements are required by the manufacturer.
 - b. Paint the entire existing wall from intersection to intersection, floor to ceiling, where any renovation work has occurred (example: removal or installation of doors or windows within an existing wall).
- B. Provide barrier coats over incompatible primers or remove and re-prime.
 - 1. Shellac and spot prime with industry accepted "stain killers" at all marks or stains which may bleed through final finishes.
- C. Before applying succeeding coats, primers and undercoats shall be integral and shall function as intended. Touch up all scratches, abrasions and other disfigurements and remove any foreign mater before proceeding with the following coat. All spot-priming or spot-coating shall be feathered into adjacent surfaces for a smooth final surface.
 - 1. Do not apply topcoats over inadequately cured primers

- D. Do not apply final coats until other work with operations that would be detrimental to finish coats has been completed in that area.
- E. When the manufacturing of paint supplied does not require or recommend a primer, and a single coat will provide required coverage, approval from the Architect must be obtained to delete second coat; and a credit shall be due the Owner.
- F. Unprimed Steel and Iron Surfaces: Use more stringent cleaning methods from material manufacturer or SSPC for substrate and finish system.
 - 1. Remove dirt, grease, oil, foreign matter, and contaminants by means of chemical or solvent cleaning (SSPC SP-1). Remove residue prior to coating. Surfaces must be clean and dry at the time of hand, power tool, or abrasive blast cleaning.
 - 2. Hand Tool Cleaning, SSPC SP-2: Use hand methods such as wire brushing, chipping, sanding, scraping, and similar abrasive or impact types of tools.
 - 3. Power Tool Cleaning, SSPC SP-3: Use power-operated brushes, chipping hammers, scalers, sanders, grinders, and similar abrasive or impact types of equipment.
 - 4. Abrasive blast cleaning, SSPC SP-6: Use a closed captured abrasive blast cleaning system to remove rust, rust scale, milscale, previous coatings, etc. The preparation shall impart a profile of between 1.5 and 2.5 mils.
 - 5. Brush-off Blast Cleaning, SSPC SP-7: Remove all visible oil, grease, dirt, loose rust and loose paint by compressed air nozzle blasting, centrifugal wheels or other specific method. The preparation shall impart a profile of about 1.0 mill on galvanized or non-ferrous metals.
 - 6. Prime cleaned areas prior to flash rusting, but no later than the same day. If the cleaned surfaces become contaminated prior to priming by hand prints, oil, grease, or other foreign matter, they shall be solvent cleaned and re-cleaned as appropriate.
- G. Shop Primed Steel and Iron Surfaces: Areas that have had shop prime coat damaged are to be re-prepared by receiving a power tool cleaning (SSPC SP-3), or abrasive blast cleaning (SSPC SP-6) for the respective surface and coating involved. Feather edges to make touch-up patches inconspicuous.
- H. Gypsum Board Surfaces:
 - 1. Fill minor defects with filler compound and spot prime defects after repair.
 - 2. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Finish smooth and flush with adjacent surfaces.
 - 3. Do not begin paint application until finishing compound is dry and sanded smooth.
- I. Non-Compatible Finishes: Materials or equipment with non-compatible factory finishes shall receive an application of an intermediate or barrier material as required by the manufacturer of finish product. If performance of specified finish system will be compromised due to incompatibility, Architect reserves the right to require removal of factory primer or finish, and application of a new compatible

primer. Additional work and materials required by non-compatible finishes shall be provided at no additional cost to Owner.

3.3 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's written instructions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.4 APPLICATION

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
 - 1. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color, and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 - 2. Apply material only to clean, dry surfaces and during periods of favorable weather unless otherwise allowed by the manufacturer.
 - 3. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
 - 4. Paint front and back sides of access panels and removable or hinged covers to match exposed surfaces.
 - 5. Seal top and bottom edges of wood doors with two coats of shellac or other effective sealer immediately upon delivery of doors to Site and after trimming to size.
 - 6. Sand lightly between each succeeding enamel or varnish coat.
 - 7. Do not apply caulks and sealants until primers or sealers have been applied.
 - 8. If undercoats, stains or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color and appearance.
 - 9. Ensure edges, corners, crevices welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- B. Take dry bulb and wet bulb temperature readings when preparing and coating metal surfaces. Do not proceed if conditions are not within the recommended or specified tolerances.
- C. Use a tack rag to tack off all gypsum walls prior to priming.
- D. Brush or roll out and work materials onto surfaces in an even film, free of marks.
- E. Spray Application: Utilize spray application on metal surfaces where hand brush

work would be inferior.

1. Each application shall provide the equivalent hiding of brush-applications. Do not double back with spray equipment for the purpose of building up film thickness in one pass.
 2. Backroll all applications on stucco surfaces.
- F. Make each application to provide a uniform finish, distinctively darker than the proceeding. Make edges adjoining other materials or colors sharp and clean, without overlapping. Sand between applications with fine sandpaper or rub surfaces with pumice stone in accordance with manufacturer's directions, where required to produce a smooth even finish.
- G. Scheduling Painting: Apply first coat material to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
 2. Slightly vary the color of succeeding coats.
- H. Paint Film Thickness: Make as many applications of material as necessary to obtain the minimum dry film thickness recommended by the manufacturer. Rate of application shall not exceed manufacturer's recommendations for each coat.
- I. Prime Coats: Apply prime coat of material which is required to be painted or finished and which has not been prime coated by others.
1. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn through or other defects due to insufficient sealing.
 2. Coordinate manufacturer's prime coats with finish coats as specified herein. If compatibility is not ascertained during the bidding period, and verification submitted with the shop drawings, then prime coat paint system as specified herein shall be applied to the item prior to finish painting as specified herein.
- J. Pigmented Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- K. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.
- 3.5 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT
- A. Paint shop primed equipment. Paint shop finished items when shop finish is damaged. Galvanized items are not considered pre-finished and are to be

painted when visible (outside mechanical/electrical closets).

- B. Prime and paint insulated and non-insulated pipes, conduit, boxes, insulated and non-insulated ducts, hangers, brackets, collars and supports exposed to view.
- C. Prime and paint exposed to view mechanical and electrical equipment occurring in finished areas, in addition to manufacturers paint finish if any.
 - 1. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
 - 2. Refer to Mechanical and Electrical Sections for schedule(s) of stencil identification and banding for equipment, ductwork, piping, and conduit in accordance with ANSI requirements. Consult Architect for resolution of color or identification conflicts.
- D. Paint both sides and edges of plywood backboards for electrical and telephone equipment with fire-retardant finish before installing backboards or equipment.

3.6 CLEAN-UP AND PROTECTION

- A. Remove from Site discarded paint materials, rubbish, cans, and rags at end of each work day.
- B. Upon completion of painting work clean window glass and other paint- spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition. Provide "Wet Paint" signs as required to protect newly painted finishes.
- D. At the completion of Work of other trades, touch-up and restore damaged or defaced painted surfaces.

3.7 PAINT TYPES AND NUMBER OF COATS

- A. The following schedules are intended to identify the type of finishes which are required for the various surfaces, and to identify the surfaces to which each finish is to be applied.
 - 1. Where the substrate has a compatible and satisfactory prime coat already on it, the prime coat specified for the numbered finish may be omitted. Test prime coat for compatibility before applying additional coats.
 - 2. When the manufacturing of paint supplied does not require or recommend a primer, and a single coat will provide required coverage, approval from the Architect must be obtained to delete second coat; with a credit.
- B. To define requirements for quality, function, and textures, the following list of materials designates the manufacturer's brand, types, and other requirements to conform to the requirements of this Project.
- C. Sheens specified are for consistency in pricing. Coordinate exact sheens required with Architect prior to submitting drawdowns.

3.8 INTERIOR PAINTING SCHEDULE

- A. All surfaces: touch-up at construction points. Determine existing coating system and submit recommendations for approval.
- B. Gypsum Board:
 - 1. Acrylic Epoxy Finish:
 - a. Primer: Vinyl acrylic sealer.
 - 1) Tnemec: PVA Sealer 51-792
 - 2) Sherwin-Williams: Prep-Rite 200 Primer B28W200 Series
 - 3) Glidden Professional: Gripper Interior/Exterior Primer Sealer (3210)
 - 4) Benjamin Moore Ultra Spec 500 Primer N534
 - 5) PPG Paints 6-2 SPEEDHIDE® Interior Latex Sealer Quick-Drying
 - b. First and Second Coats: Satin finish, high - performance, acrylic epoxy, water based coating.
 - 1) Tnemec: H.B. Tneme-Tufcoat Series 113
 - 2) Sherwin-Williams: Epo-Plex Multi-Mil B71 Series
 - 3) Glidden Professional: TRU-GLAZE-WB Acrylic Epoxy Coating (4418)
 - 4) Benjamin Moore Corotech V450 Acrylic Epoxy
 - 5) PPG Paints 16-551/16-599 Series Pitt-Glaze WB Water Borne Acrylic Epoxy
 - c. Surfaces: Gypsum board walls and ceilings.
- C. Electrical Equipment Backer Boards:
 - 1. Fire Retardant Coating: Flame Control No. 20-20 flat Intumescent Fire Retardant Paint
 - a. Sherwin-Williams: Flame Control No. 20-20 flat Intumescent Fire Retardant Paint
 - b. Glidden Professional: Flame Control No. 20-20 flat Intumescent Fire Retardant Paint
- D. Ferrous Metal:
 - 1. Acrylic Enamel:
 - a. Primer: Metal primer applied at spreading rate recommended by the manufacturer.
 - 1) Sherwin-Williams: Kem Kromik Universal Metal Primer B50Z Series.
 - 2) Glidden Professional: DEVGUARD 4360 Universal low VOC Primer (4360-XXXX)
 - 3) Benjamin Moore Alkyd Metal Primer P06
 - b. Second Coat: Semigloss, applied at spreading rate

recommended by the manufacturer.

- 1) Sherwin-Williams: Proclassic Interior Alkyd Semi Gloss, B34 Series
 - 2) Glidden Professional: Alkyd Semi-Gloss Enamel (1507-XXXX)
 - 3) Glidden Professional: DEVFLEX 4216HP Waterborne Acrylic Semi-Gloss Enamel (4216-XXX)
 - 4) Benjamin Moore Alkyd DTM Semi-Gloss P24
- c. Surfaces: Hollow metal frames and miscellaneous steel where scheduled, noted to be painted, or exposed to view.

END OF SECTION 09 9000

SECTION 10 2114
STAINLESS STEEL TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes toilet partitions, urinal screens and accessories.

1.2 SUBMITTALS

- A. Product Data: Maintenance instruction.
- B. Shop Drawings: Fabrication drawings. Include appurtenances, cutouts, and all accessories. Provide template layouts for anchorage devices built into other work.
- C. Samples: 6-inch-square of each finish on same substrate to be used in Work.
- D. Sample warranty

1.3 QUALITY ASSURANCE

- A. Field Measurements: Take measurements prior to preparation of Shop Drawings, to ensure proper fitting of Work. Allow for adjustments where taking field measurements before fabrication might delay Work.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication and indicate measurements on Shop Drawings.
 - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating toilet compartments without field measurements. Coordinate wall, floor, ceilings, and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

1.5 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION

- A. Partition system shall conform with the Accessibility Requirements Manual from the Florida Department of Community Affairs, Florida Board of Building Codes and Standards.

1.6 WARRANTY

- A. Manufacturer's standard 15 years against warping and manufacturing defects from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
 - 1. Accurate Partitions Corp.
 - 2. Flush Metal Partition Corp.
 - 3. Metpar Corp.

4. Sanymetal Products Co. div. of Crane Plumbing
5. Weis/Robart Partitions, Inc.
6. AMPCO Products, Inc.

2.2 DESCRIPTION

- A. Type: Floor supported with overhead top rail bracing partitions.
 1. Provide floor/ceiling braced pilaster at accessible stall at connection to other compartments for termination of overhead bracing.

2.3 MATERIALS

- A. Provide materials which have been selected for surface flatness and smoothness. Exposed surfaces which exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptable.
- B. Stainless Steel Sheets: ASTM A 167, Type 304 stainless steel with No. 4 finish.
 1. Pilasters (overhead-braced): 0.0396 inch (20 gage).
 2. Panels and Screens: 0.0396 inch (20 gage).
 3. Doors: 0.0336 inch (22 gage).
- C. Concealed Anchorage Reinforcement: Minimum 0.108 inch (12 gage), galvanized steel sheet.
- D. Concealed Tapping Reinforcement: Minimum 0.0785 inch (14 gage), galvanized steel sheet.
- E. Core Material for Metal Partitions: Manufacturer's standard sound-deadening honeycomb of impregnated Kraft paper in thickness to provide finished dimension of 1 inch minimum for doors, panels, and screens and 1-1/4 inches minimum for pilasters.
- F. Pilaster Shoes and Caps: ASTM A 167, Type 302/304 stainless steel, not less than 3 inches high, 0.0396 inch thick (20 gage), finished to match hardware.
- G. Stirrup Brackets: Manufacturer's standard design for attaching panels to walls and pilasters, solid stainless steel with No. 4 finish.
- H. Hardware and Accessories: Manufacturer's standard design, heavy duty operating hardware and accessories of solid stainless steel.
- I. Overhead Bracing: Continuous extruded aluminum, antigrip profile, with clear anodized finish.
- J. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, chromium-plated steel, or brass, finished to match hardware, with theft-resistant-type heads and nuts. For concealed anchors, use hot-dip galvanized, cadmium-plated, or other rust-resistant protective-coated steel.

2.4 FABRICATION

- A. Furnish standard doors, panels, screens, and pilasters fabricated for compartment system. Furnish units with cutouts, drilled holes, and internal reinforcement to receive partition-mounted hardware, accessories, and grab bars, as indicated.

- B. Door Dimensions: Unless otherwise indicated, furnish 24-inch-wide in-swinging doors for ordinary toilet stalls and 32-inch-wide (clear opening) out-swinging doors for stalls equipped for use by handicapped.
- C. Metal Toilet Compartments and Screens: Pressure laminate seamless face sheets to core material and seal edges with continuous interlocking strip or with lapped and formed edges. Weld edges and corners with exposed welds ground smooth.
- D. Overhead-Braced Compartments: Furnish galvanized steel supports and leveling bolts at pilasters as recommended by Manufacturer to suit floor conditions. Make provisions for setting and securing continuous, extruded, aluminum, antigrip, overhead bracing at top of each pilaster. Provide shoe at each pilaster to conceal supports and leveling mechanism.
- E. Wall-Hung Screens: Furnish panel units in sizes indicated, of same construction and finish as partition system panels.
- F. Hardware: Furnish hardware for each compartment to comply with ANSI A117.1 for handicapped accessibility and as follows:
 - 1. Hinges: Cutout inset type, adjustable to hold door open at any angle up to 90 degrees. Provide gravity type, spring-action cam type, or concealed torsion rod type to suit Manufacturer's standards.
 - 2. Latch and Keeper: Recessed latch unit, designed for emergency access, with combination rubber-faced door strike and keeper.
 - 3. Latch and Keeper - Handicapped: Manufacturer's standard surface-mounted latch unit, designed for handicapped accessibility, with combination rubber-faced door strike and keeper.
 - 4. Coat Hook: Manufacturer's standard unit, combination hook and rubber-tipped bumper, sized to prevent door hitting mounted accessories.
 - 5. Door Pull: Manufacturer's standard unit for out-swinging doors. Provide pulls on both faces of handicapped compartment doors.

2.5 FINISH

- A. Satin finish stainless steel with No. 4 finish.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's recommended procedures and installation sequence. Install compartment units rigid, straight, plumb, and level. Provide clearances of not more than 1/2 inch between pilasters and panels, and not more than 1 inch between panels and walls. Secure panels to walls with not less than two stirrup brackets attached near top and bottom of panel. Locate wall brackets so that holes for wall anchorages occur in masonry or tile joints. Secure panels to pilasters with not less than two stirrup brackets located to align with stirrup brackets at wall. Secure panels in position with manufacturer's recommended anchoring devices.
- B. Overhead-Braced Compartments: Secure pilasters to floor and level, plumb, and tighten installation with devices furnished. Secure overhead brace to each

pilaster with not less than two fasteners. Hang doors and adjust so that tops of doors are parallel with overhead brace when doors are in closed position.

- C. Screens: Attach with anchoring devices as recommended by manufacturer to suit supporting structure. Set units to provide support and to resist lateral impact.

3.2 ADJUST AND CLEAN

- A. Hardware Adjustment: Adjust and lubricate hardware for proper operation. Set hinges on in-swinging doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors (and entrance swing doors) to return to fully closed position.
- B. Clean exposed surfaces of partition systems using materials and methods recommended by manufacturer, and provide protection as necessary to prevent damage during remainder of construction period.

END OF SECTION 10 2114

SECTION 10 2813
TOILET ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes toilet accessory items. Refer to the Toilet Accessory Schedule on the Drawings.

1.2 SUBMITTALS

- A. Product data for each toilet accessory item specified, including construction and mounting details, dimensions, gages, profiles, specified options, and finishes.
- B. Schedule indicating types, quantities, sizes, and installation locations (by room) for each toilet accessory item to be provided for Project.
- C. Setting Drawings where cutouts are required in other Work, including templates, substrate preparation instructions, and directions for preparing cutouts and installing anchorage devices.
- D. Maintenance instructions including replaceable parts and service recommendations.
- E. Sample warranties.

1.3 QUALITY ASSURANCE

- A. Inserts and Anchorages: Furnish accessory Manufacturers' standard inserts and anchoring devices that must be set in concrete or built into masonry. Coordinate delivery with other Work to avoid delay.
- B. Single-Source Responsibility: Provide products of same Manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise acceptable to Architect.
- C. Performance Requirements:
 - 1. Grab Bar Structural Requirements: FBC 1607.7

1.4 PROJECT CONDITIONS

- A. Coordinate accessory locations, installation, and sequencing with other Work to avoid interference with and ensure proper installation, operation, adjustment, cleaning, and servicing of toilet accessory items.

1.5 WARRANTY

- A. Toilet Accessory Warranty: Provide manufacturers one year warranty from the Date of Substantial Completion, against defects in material and workmanship.
- B. Mirror Warranty: Written warranty executed by mirror manufacturer, agreeing to replace mirrors that develop visible silver spoilage defects within 15 years from the Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TOILET ACCESSORY MANUFACTURERS

- A. Manufacturers:
 - 1. Basis of Design: Bobrick Washroom Equipment, Inc.
 - 2. Bradley Corporation
 - 3. American Specialties, Inc.
 - 4. A&J Washroom Accessories
- B. Products on the Toilet Accessory Schedule are based on Bobrick.

2.2 MATERIALS, GENERAL

- A. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 0.034-inch (22-gage) minimum thickness.
- B. Brass: Leaded and unleaded, flat products, ASTM B 19; rods, shapes, forgings, and flat products with finished edges, ASTM B 16; Castings, ASTM B 30.
- C. Sheet Steel: Cold-rolled, commercial quality ASTM A 366, 0.04-inch (20-gage) minimum. Surface preparation and metal pretreatment as required for applied finish.
- D. Galvanized Steel Sheet: ASTM A 527, G60.
- E. Chromium Plating: Nickel and chromium electro-deposited on base metal, ASTM B 456, Type SC 2.
- F. Mirror Glass: Nominal 6.0-mm (0.23-inch) thick, conforming to ASTM C 1036, Type I, Class 1, Quality q2, and with silvering, electro-plated copper coating, and protective organic coating.
- G. Stainless Steel Mirror Surfaces: Not less than 0.04-inch (20-gage) AISI Type 302/304 stainless steel sheet, stretcher-leveled with No. 8 polished mirror finish. Bond to 1/4-inch minimum hardboard backing.
- H. Galvanized Steel Mounting Devices: ASTM A 153, hot-dip galvanized after fabrication.
- I. Fasteners: Screws, bolts, and other devices of same material as accessory unit, or of galvanized steel where concealed.

2.3 FABRICATION

- A. No names or labels are permitted on exposed faces of toilet and bath accessory units. On either interior surface not exposed to view or on back surface, provide identification of each accessory item either by a printed, waterproof label or a stamped nameplate indicating Manufacturer's name and product model number.
- B. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.
- C. Recessed Toilet Accessories, General: Except where otherwise indicated, fabricate units of all-welded construction, without mitered corners. Hang doors or access panels with full-length, stainless steel piano hinge. Provide anchorage that is fully concealed when unit is closed.
- D. Framed Mirror Units, General: Fabricate frames for glass mirror units to

accommodate wood, felt, plastic, or other glass edge protection material. Provide mirror backing and support system that will permit rigid, tamperproof glass installation and prevent moisture accumulation, as follows:

1. Provide galvanized-steel backing sheet, not less than 0.034 inch (22 gage) and full mirror size, with nonabsorptive filler material. Corrugated cardboard is not an acceptable filler material.
- E. Mirror Unit Hangers: Provide system for mounting mirror units that will permit rigid, tamperproof, and theft proof installation, as follows:
1. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
 2. Heavy-duty wall brackets of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.
- F. Keys: Provide universal keys for access to toilet accessory units requiring internal access for servicing and re-supply. Provide six keys to Owner's representative.
- G. Baby Changing Stations: Meeting ASTM F2285 requirements.

2.4 MISCELLANIOUS ITEMS

- A. Under Lavatory Guard
1. Basis-of-Design Product: Provide "Lav-Guard 2, EZ Series" undersink protective pipe cover kits as manufactured by Truebro by IPS Corporation.
 2. Description: Insulating pipe covering for supply and drain piping assemblies that prevent direct contact with and burns from piping; allow service access without removing coverings.
 3. Material and Finish: Antimicrobial, molded plastic, white.
- B. Mop Holders with Shelf and Rag Hooks: Surface mounted utility shelf with spring loaded rubber cam holders to accommodate mop or broom handles. Bobrick No. B-224 X 30"

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install toilet accessory units according to manufacturers' instructions, using fasteners appropriate to substrate as recommended by unit manufacturer. Install units plumb and level, firmly anchored in locations and at heights indicated.
- B. Secure mirrors to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, according to Manufacturer's instructions for type of substrate involved.
- C. Install grab bars to withstand a downward load of at least 250 lbf, complying with ASTM F 446, and in accordance with Performance Requirements.
- D. Install changing stations to within static loads of 400 lbf. and per manufacturer's recommended instructions.

3.2 ADJUSTING AND CLEANING

- A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.
- B. Clean and polish all exposed surfaces strictly according to manufacturer's recommendations after removing temporary labels and protective coatings.

3.3 TOILET ACCESSORIES SCHEDULE

- A. Model numbers are based on Bobrick Washroom Equipment, Inc.
- B. Soap Dispensers:
 - 1. Surface Mounted B4112
- C. Seat Cover Dispenser:
 - 1. Surface Mounted Seat Cover Dispenser B-221
- D. Waste Receptacle:
 - 1. Surface Mounted Waste Receptacle w/Linermat B-277
- E. Toilet Tissue Dispenser:
 - 1. Surface Mounted Multi-Roll Tissue Dispenser B-2888
- F. Soap Dish:
 - 1. Surface Mounted Soap Dish B-6807
- G. Sanitary Napkin Disposal:
 - 1. Surface Mounted Sanitary Napkin Disposal B-270
- H. Grab Bars:
 - 1. 1-1/4 inch Dia. SS Grab Bar with Snap Flange B-5806 Series
- I. Robe Hooks:
 - 1. Surface Mounted Double Robe Hook B-7672
- J. Electric Hand dryer:
 - 1. QuietDry Surface Mounted ADA Dryer B-7128

END OF SECTION 10 2813

SECTION 12 3216
MANUFACTURED PLASTIC-LAMINATE-CLAD CASEWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes plastic laminated faced modular casework constructed to AWI 1600.

1.2 DEFINITIONS

- A. Exposed Surfaces:
 - 1. Surfaces visible when doors and drawers are closed.
 - 2. Bottoms of cases more than 4 feet above floor.
 - 3. Visible members in open cases or behind glass doors
- B. Semi-Exposed Surfaces:
 - 1. Members behind opaque doors, such as shelves, divisions, interior faces of ends, case back, drawer sides, backs and bottoms, and back face of doors.
 - 2. Tops of cases 6'-6 or more above floor.
- C. Concealed Surfaces: Surfaces not visible after installation.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Details and sizes including methods of attachment
 - 2. Show locations for support in metal stud walls.
 - 3. Type and locations for support within walls
 - 4. Field verified dimensions
 - 5. Indicate utility locations to be coordinated with other trades
- B. Samples
 - 1. Full range of colors, textures, and patterns available for plastic laminate and edging.
 - 2. Full Size Cabinet: Base cabinet with door, drawer, shelf, and hardware. Unit may be incorporated into Work. Submit within 20 days of Notice to Proceed, a sample base cabinet and countertop constructed in accordance with these specifications.
- C. Quality Standard: Comply with the Architectural Woodwork Standard, Latest Edition for grades of interior architectural woodwork, construction, finishes and other requirements.
- D. Sample Guarantee

1.4 JOB CONDITIONS

- A. Deliver casework only after wet work is complete and relative humidity is maintained within manufacturer's recommended range for one week. Store in ventilated spaces. Protect against damage during installation through the Date of Substantial Completion.

- B. Take field measurements for casework items. Show measurements on Shop Drawings.

1.5 QUALITY ASSURANCE

- A. Defective workmanship or damaged components shall be corrected, repaired, or replaced as requested by the Architect, without further cost to the Owner.
- B. Manufacturer Qualifications: Minimum 7 years experience in the manufacturer and installation of the type of cabinets specified.
- C. Installer Qualifications: Minimum 5 years experience in the installation of the type of cabinets specified.
- D. Coordinate delivery of templates and other similar items from other trades necessary for the construction of required casework units.
- E. Casework shall be manufactured and install to meet the requirements of the FBC and the Florida Fire Prevention Code.
- F. Quality Standard: Comply with requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI).
- G. Comply with Section 1600 "Modular Cabinets" and Section 1700 "Installation of Woodwork" of the Architectural Woodwork Institute's Architectural Woodwork Quality Standards.

1.6 WARRANTY

- A. 5 years from the Date of Substantial Completion against defects in material and workmanship. Cover repair or replacement, without cost to the Owner, of items that become defective within the 5-year period. Exception: Damage caused by improper operation or misuse.

1.7 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION

- A. Casework shall conform with the Accessibility Requirements Manual from the Florida Department of Community Affairs, Florida Board of Building Codes and Standards.

PART 2 - PRODUCTS

2.1 GENERAL WORKMANSHIP

- A. Machine parts for accurate fit and assemble with appropriate fasteners and adhesives to result in true, square, level, and plumb units.
- B. Coordinate with other trades for required dimensions of items to be built into casework.
- C. Provide removable or false backs for access or concealment of heating or plumbing items.
- D. Scribe tops and backsplashes to walls and other adjoining vertical surfaces.
- E. Cabinets at end walls shall have minimum scribe unless shown otherwise.

2.2 MATERIALS

- A. Plastic Laminate
 - 1. Acceptable Manufacturers: Wilsonart, Pionite, Formica, and Nevamar or Architect's approved equal
 - 2. Decorative Laminates
 - a. High-pressure decorative laminate VGS (.028), NEMA LD 3
 - b. High-pressure decorative laminate HGS (.048), NEMA LD 3
 - c. High-pressure cabinet liner CLS (.020), NEMA LD 3
 - d. High-pressure backer BKH (.028) NEMA LD 3
 - 3. Exposed horizontal surfaces: HGS
 - 4. Exposed, interior and exterior vertical surfaces: VGS
 - 5. Backing sheet for concealed surfaces: BKH or CLS for balanced panel.
 - 6. Backing sheet for semi-exposed surfaces: BKH
 - 7. Color (all surfaces): Selected by Architect.
- B. Edging Material
 - 1. High impact PVC or ABS extrusion, with satin finish
 - 2. Door and Drawer Fronts: 3mm, machine profile to 1/8 inch radius
 - 3. Horizontal and Vertical Front Cabinet Members: 1mm thick
 - 4. Colors: Selected by Architect
- C. Core Materials:
 - 1. Particleboard: Composite panel, ½ inch to 1 inch thickness, 100% annually-renewable agricultural fibers, with no added urea formaldehyde, ANSI A208.1-1999 M-3.
 - 2. Softwood Plywood: PS 1
 - 3. Hardboard: ANSI A135.4, Class 1 tempered per ASTM D 1037, smooth 2 sides (S2S).
 - 4. Hardwood: Solid lumber concealed members to be kiln dried, select Poplar, Fir, or mill option lumber.
 - 5. Hardwood Plywood: Baltic Birch 7-ply, with no added urea formaldehyde cabinet grade.

2.3 HARDWARE AND MISCELLANEOUS

- A. Hinges: Grass International Concealed hinge arm, full overlay, nickel, #F150000014223. Or, Architect's approved equal.
- B. Pulls: EPCO DP1710) Plastic Grey, Mortised Mounted Recess.
- C. Drawer Glides:
 - 1. Manufacturer's standard, epoxy coated metal, nylon rollers, 100 pounds dynamic load or European style, bottom mounted, captive profile, epoxy finished, nylon rollers, and 100 pounds dynamic loading with positive in-stop and out-stop.
 - 2. Provide outstop and outkeeper to maintain drawer in 80 percent open position.
 - 3. File drawers and paper storage drawers: Same as above except full extension and load rating static position to be no less than 125 pounds.
- D. Locks

1. Cylinder type cast with 5-disc tumbler mechanism. Each lock shall be provided with milled brass key and keying as specified in keyed different and master keyed or keyed alike. Provide locks where scheduled on Drawings.
 2. Each area or room shall be keyed alike. Coordinate with Owner for preferred Keying.
 3. Provide automatic door bolt on double doors at leaf opposite lock core.
- E. Adjustable Shelf Supports: Molded nylon or nickel, 2 pin, anti-lift, minimum 200 pounds capacity support clip. Support to accept either 3/4 inch or 1-inch thick shelf.
- F. Catches: Magnetic type, adjusted for maximum 5-pound pull. Attach with screws and slotted for adjustment.
- G. Cubicle cabinet dividers shall be 3/4 inch particleboard with laminate on both sides.

2.4 CABINET CONSTRUCTION

- A. Cabinet Base: 4-inch high, 3/4 inch CDX plywood. Provide additional center support for cabinets over 24 inches wide.
- B. Base, Wall, and Tall Cabinet Boxes
1. Sides, bottom, and top: Constructed of glued and spline doweled 3/4 inch particleboard providing balanced construction, surfaced with cabinet liner CLS for semi-exposed and vertical grade laminate for exposed locations.
 2. Wall cabinet bottoms and tops: Constructed of glued and spline doweled one inch thick particleboard, providing balanced construction surfaced with vertical grade laminate for exposed locations and cabinet liner CLS for semi-exposed locations.
 3. Intermediate support rail: Minimum 3/4 inch particleboard, surfaced with vertical grade laminate of balanced construction, glued and doweled into cabinet sides.
 4. Hanger Rails: Two located at top and bottom of cabinet back, 3 on tall cabinets, locate at top, bottom, and center.
- C. Fixed and Adjustable Shelves and Dividers
1. One inch (particleboard) shelves
 2. Exposed Locations: Vertical grade plastic laminate both sides. Color to match cabinet exterior plastic laminate or as selected by Architect.
 3. Semi-exposed locations: VGS or CLS
 4. Front and back leading edges shall be edged with flat 1mm thick high impact PVC edging to match shelf color.
 5. Number of adjustable shelves provided, unless indicated otherwise on the Drawings or on the Schedule
 - a. Low and tall cabinets
 - 1) 1 up to 24 inches: 4 up to 72 inches
 - 2) 2 up to 36 inches: 5 up to 84 inches
 - 3) 3 up to 60 inches: 6 up to 96 inches

- b. Wall hung cabinets
 - 1) 0 up to 24 inches: 2 up to 36 inches
 - 2) 1 up to 30 inches: 3 up to 40 inches
- 6. Adjustable dividers: 1/4 inch minimum thickness, prefinished tempered hardboard or plywood, smooth both faces, retained by molded plastic support clip.
- 7. Fixed dividers: Constructed of 3/4 inch particleboard, surfaced with vertical grade laminate, providing balanced construction; glued and spline doweled. PVC edged to match laminate or adjacent PVC edging.
- D. Cabinet Doors
 - 1. 3/4 inch particleboard
 - 2. High pressure plastic vertical grade laminate exterior and interior.
 - 3. Doors 48 inches and less in length shall have 2 hinges per door; doors over 48 inches in length shall have 3 hinges per door.
 - 4. Corners: Square with radiused edges, 3mm PVC edging.
- E. Drawers
 - 1. Manufacturers standard construction of minimum components listed below; or high density fiber board; glued and doweled or dovetail jointed; surfaced with vertical grade laminate of balanced construction. Bottoms constructed of minimum 1/4-inch tempered hardboard, surfaced to match drawer sides, inset and glued to four sides.
 - 2. Drawer Face
 - a. Constructed of minimum 3/4-inch particleboard, surfaced with VGS, screw attached to the drawer box.
 - 1) Corners: To match doors.
 - 2) Edging: 1mm PVC.
 - 3) Plastic Laminate: To match doors.
 - 3. File Drawers: File drawers shall be constructed in accordance with standard drawers specified above with the following: Include front-to-back and side-to-side hanger file capability with hanger channel for letter size files integral with file drawer sides and 3/16-inch by 1/2-inch removable steel channel to span side-to-side for legal size hanging files.
- F. Solid Surfacing Countertops: Homogeneous filled solid polymer; not coated, laminated, or of a composite construction; meeting IAPMO Z124.3 and IAPMO Z124.6 Requirements.
 - 1. Fire Hazard Ratings classified in accordance local codes and ordinances, ASTM E84 and the following:
 - a. Class A
 - b. Flame Spread: 0 – 25
 - c. Smoke Developed: 0-450
 - 2. Colors: Architect may choose any color(s) from Color Group A, Color Group B, and Color Group C.

- G. Sealants: Fully bed and seal splashes to tops and to other splashes with Dow Corning 786 Mildew Resistant Silicone Sealant, clear; or Architect approved equal.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine conditions under which casework will be installed. Do not proceed with installation until all unsatisfactory conditions have been corrected.
- B. Condition casework to conditioned space prior to installation.

3.2 INSTALLATION

- A. Install woodwork to comply with AWI Section 1700 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Set and Secure cabinetwork and finish carpentry items in place rigid, plumb, and square.
 - 1. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.
 - 2. When necessary to scribe on site, make material with ample allowance for cutting.
 - 3. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
 - 4. Use purpose designed fixture attachments for mounted components.
 - 5. Counter-sink semi-concealed anchorage devices used to wall mount components and conceal with solid plugs of species to match surrounding wood. Place flush with surrounding surfaces.
 - 6. All wood mounting devices or wood frame work in contact with concrete or masonry shall be pressure treated.
- C. Permanently fix cabinet bases to floor using appropriate components.
- D. Cabinets: Install without distortion so doors and drawers fit openings and are aligned. Adjust hardware to center doors and drawers in openings.
 - 1. Install cabinets to a tolerance of 1/8 inch in 12'-0 for plumb and level and with no variations in flushness of adjoining surfaces.
- E. Countertops: Anchor by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 - 1. Install countertops with no more than 1/8 inch in 12'-0 for plumb and level and with no variations in flushness of adjoining surfaces.
 - 2. Secure backsplashes to walls with adhesive.
 - 3. Calk space between backsplash and wall with sealant specified in Division 07 Section, Joint Protection.

- F. Trim: Install with minimum number of joints possible, using full length pieces (from maximum length lumber available) to the greatest extent possible. Do not use pieces less than 36 inches long, except where necessary.
- G. Install fixtures and accessories supplied under other sections for installation. Install items in accordance with manufacturer's instructions.

3.3 ADJUSTMENT AND CLEANING

- A. Adjust casework and hardware so that doors and drawers operate smoothly and within accessibility requirements.
- B. Install a chain on doors where door will hit an obstruction before it is fully opened.
- C. End cabinets placed against corners or where they tee into other cabinets or obstacles shall be provided with chain or bracket stops on the inside of the doors to prevent the door or door handles from hitting the obstruction.
- D. Clean exposed surfaces, edges, and interiors, and remove construction and installation marks prior to the Date of Substantial Completion.

END OF SECTION 12 3216