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## SECTION 01095 - REFERENCE STANDARDS AND DEFINITIONS

### PART 1 - GENERAL

#### DEFINITIONS:

General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon. Certain terms used in the contract documents are defined generally in this article. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the work to extent not stated more explicitly in another provision of the contract documents.

General Requirements: The provisions or requirements of Division 1 sections. General Requirements apply to entire work of Contract and, where so indicated, to other elements of work which are included in the project.

Indicated: The term "Indicated" is a cross-reference to details, notes or schedules on the drawings, to other paragraphs or schedules in the specifications and to similar means of recording requirements in the contract documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "Indicated", it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.

Directed, Requested, etc.: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by Architect/Engineer", "requested by Architect/ Engineer", etc. However, no such implied meaning will be interpreted to extend Architect's/Engineer's responsibility into Contractor's area of construction supervision.

Alternate: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents. Coordinate related Work and modify or adjust adjacent Work as necessary to ensure that Work affected by each accepted Alternate is complete and fully integrated into the project.

Approved: Where used in conjunction with Architect's/Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect/Engineer be interpreted as release of Contractor from responsibilities to fulfill requirements of the contract documents.

Project Site: The space available to Contractor for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on the drawings, and may or may not be identical with description of the land upon which project is to be built.

Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

Installer: The entity (person or firm) engaged by the Contractor or its subcontractor or sub-subcontractor for the performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) are to be experienced in the operations they are engaged to performed.

The term "experienced," when used with the term "Installer" means having a minimum of 5 previous Projects similar in size and scope to this Project, and familiar with the precautions required, and has complied with requirements of the authority having jurisdiction.

Testing Laboratory: An independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

Regulation: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

Trades: Use of titles such as "carpentry" is not intended to 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 tradespersons of the corresponding generic name.

Assignment of Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

#### DRAWING SYMBOLS:

General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., seventh edition.

#### SPECIFICATION FORMAT AND CONTENT EXPLANATION

Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16-Division format and MASTERFORMAT numbering system.

**Specification Content:** This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

**Abbreviated Language:** Language used in Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the full context of the Contract Documents so indicates.

**Imperative and streamlined language** is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.

The words "shall be" shall be included by inference wherever a colon (;) is used within a sentence or phrase.

## **INDUSTRY STANDARDS**

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

**Publication Dates:** Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.

**Conflicting Requirements:** Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.

**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. In complying 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.

**Copies of Standards:** Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.

Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

Although copies of standards needed for enforcement of requirements may be included as part of required submittals, the Architect reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

**Abbreviations and Names:** Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Names and addresses are subject to change and are believed to be but are not assured to be accurate and up to date as of date of Contract Documents.

AAMA	American Architectural Manufacturer's Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALI	Associated Laboratories
ALSC	American Lumber Standards Committee
ANSI	American National Standards Institute
APA	American Plywood Association
A.P.A.	American Parquet Association
ARMA	Asphalt Roofing Manufacturers Association
ASA	Acoustical Society of America
ASC	Adhesive and Sealant Council
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers

ASSE	American Society of Sanitary Engineering	NAAMM	National Association of Architectural Metal Manufacturers
ASTM	American Society for Testing and Materials	NAPA	National Asphalt Pavement Association
AWI	Architectural Woodwork Institute	NAPF	National Association of Plastic Fabricators (Now DLPA)
AWPA	American Wood Preservers Association	NBHA	National Builders Hardware Association (Now DHI)
AWPB	American Wood Preservers Bureau	NCMA	National Concrete Masonry Association
AWS	American Welding Society	NEC	National Electric Code (Now NFPA)
BANC	Brick Association of North Carolina	NFPA	National Fire Protection Association
BHMA	Builders Hardware Manufacturers Association	N.F.P.A.	National Forest Products Association
BIA	Brick Institute of America	NHLA	National Hardwood Lumber Association
CDA	Copper Development Association	NKCA	National Kitchen Cabinet Association
CISCA	Ceiling and Interior Systems Construction Association	NLGA	National Lumber Grades Authority
CISPI	Cast Iron Soil Pipe Institute	NOFMA	National Oak Flooring Manufacturers Association
CRSI	Concrete Reinforcing Steel Institute	NPA	National Particleboard Association
CTI	Ceramic Tile Institute of America	NPCA	National Paint and Coatings Association
DHI	Door and Hardware Institute	NRCA	National Roofing Contractors Association
DLPA	Decorative Laminate Products Association	NSSEA	National School Supply and Equipment Association
EIMA	Exterior Insulation Manufacturers Association	NTMA	National Terrazzo and Mosaic Association
EJMA	Expansion Joint Manufacturers Association	NWMA	National Woodwork Manufacturers
FGMA	Flat Glass Marketing Association	NWWDA	National Wood Window and Door Association (Formerly NWMA)
FM	Factory Mutual Engineering and Research Organization	PCA	Portland Cement Association
FTI	Facing Tile Institute	PCI	Prestressed Concrete Institute
GA	Gypsum Association	PEI	Porcelain Enamel Institute
HMA	Hardwood Manufacturers Association	RFCI	Resilient Floor Covering Institute
HPMA	Hardwood Plywood Manufacturers Association	SDI	Steel Deck Institute
IGCC	Insulating Glass Certification Council	S.D.I.	Steel Door Institute
MBMA	Metal Building Manufacturers Association	SGCC	Safety Glazing Certification Council
MFMA	Maple Flooring Manufacturers Association		



SHLMA	Southern Hardwood Lumber Manufacturers
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SPRI	Single Ply Roof Institute
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TCA	Tile Council of America
TPI	Truss Plate Institute
UL	Underwriters Laboratories
WCMA	Wallcovering Manufacturers Association
WIC	Woodwork Institute of California
WLPDIA	Western Lath Plaster Drywall Industries Association (Formerly California Lath & Plaster Association)
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association
W.W.P.A.	Woven Wire Products Association

EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FHA	Federal Housing Administration (U.S. Department of Housing and Urban Development)
FS	Federal Specification (from GSA) Specifications Unit (WFSIS)
GSA	General Services Administration
MIL	Military Standardization Documents (U.S. Department of Defense)
NIST	National Institute of Standards and Technology (U.S. Department of Commerce)
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PS	Product Standard of NBS (U.S. Department of Commerce)
REA	Rural Electrification Administration (U.S.) Department of Agriculture)
USDA	U.S. Department of Agriculture
USPS	U.S. Postal Service

#### **GOVERNING REGULATIONS/AUTHORITIES**

The Architect has contacted authorities having jurisdiction where necessary to obtain information necessary for preparation of Contract Documents; that information may or may not be of significance to the Contractor. Contact authorities having jurisdiction directly for information and decisions having a bearing on the work. All permits required for this project will be obtained and paid for by City Utilities.

#### **SUBMITTALS**

**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, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

#### **PART 2 - PRODUCTS**

(Not Applicable).

#### **PART 3 - EXECUTION**

CE	Corps of Engineers
CFR	Code of Federal Regulations
CPSC	Consumer Product Safety Commission
CS	Commercial Standard
DOC	Department of Commerce
DOT	Department of Transportation

(Not Applicable).

**END OF SECTION 01095**

## SECTION 01205 - PROCEDURES, PERFORMANCES AND TESTS

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

The types of minimum requirements for procedural and performance work of a general nature include but are not necessarily limited to the following categories:

- Construction Procedures.
- Coordination and meetings.
- Administrative/supervisory personnel.
- Surveys and records or reports.
- Limitations for use of site.
- Special reports.
- Inspections, tests and reports.
- General installation provisions.
- Cutting and patching.
- Cleaning and protection.

#### CONSTRUCTION PROCEDURES:

City Utilities will obtain and pay for all permits for the total project.

The Architect will conduct a Pre-Bid Conference of prime contractors, principal sub-contractors, material suppliers and the Owner or his representative at least five days previous to the bid date. Suggested subjects to be discussed and clarified:

- Time of completion.
- Terms of substantial completion of the entire project or partial sections.
- Payment schedules and retentions.
- Building permit and plan inspection fee.
- Clarification of construction details and specification descriptions.
- Insurance and bond requirements.

A Pre-Construction Conference will be held by the General Contractor in the presence of the Architect and the Owner or his representative and attended by the successful prime contractors, sub-contractors and materials suppliers. Timing of conference will be set to

follow issuance of the "Proceed Order" and to be prior to the actual start of construction. Subjects for discussion will be:

- Issuance of building permit.
- Progress schedule anticipated by the Contractors.
- Delivery time of essential materials and equipment as necessary to comply with proposed project schedule and the identification of materials that might delay the work.
- Provisions for the location of on-site storage areas for materials and for the job-site offices.
- Requirements for off-site storage of materials and equipment.
- Insurance coverage for on-site and off-site stored materials.
- Certificates of Insurance and Limits of coverage.
- Builder's Risk Insurance.
- Compliance with safety codes and regulations, insurance and bonds.
- Responsibility for payment of soil testing services.

#### MINOR CHANGES IN THE WORK

Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Architect on AIA form G710, Architect's Supplemental Instructions.

#### CHANGE ORDER PROPOSAL REQUESTS

Owner-Initiated Proposal Requests: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Architect, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.

Proposal requests issued by the Architect are for information only. Do not consider them an instruction either to stop work in progress, or to execute the proposed change.

Unless otherwise indicated in the proposal request, within ten (10) days of receipt of the proposal request, submit to the Architect for the Owner's review an estimate of cost necessary to execute the proposed change.

Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.

Contractor-Initiated Change Order Proposal Requests: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.

Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.

Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

Comply with requirements in Section "Product Substitutions" if the proposed change in the Work requires the substitution of one product or system for a product or system specified.

Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests.

#### **CHANGE ORDER PROCEDURES**

Upon the Owner's approval of a Change Order Proposal Request, the Architect will issue a Change Order for signatures of the Owner and Contractor on AIA Form G701, as provided in the Conditions of the Contract.

Construction Change Directive: When time does not allow for a formal/complete Change Order proposal or the owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect may issue a Construction Change Directive on AIA Form G714, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

The Construction Change Directive will contain a complete description of the change in the Work and designate the method to be followed to determine change in the Contract Sum or Contract Time.

Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

#### **COORDINATION AND MEETINGS:**

Monthly Coordination Meeting: In addition to specific coordination meetings for each major element of work, and regular project meetings for other purposes (as indicated elsewhere in the contract documents), hold monthly general project coordination meetings at regularly scheduled times which are convenient for everyone involved. Request representation (at each meeting) by every entity currently involved in coordination of planning for the work (of

the entire project). Conduct meetings in a manner which will resolve coordination problems. Record results of meetings and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

#### **ADMINISTRATIVE/SUPERVISORY PERSONNEL:**

General: In addition to a General Superintendent and other administrative and supervisory personnel required for performance of the work, provide specific coordinating personnel as specified herein.

Project Coordinator: Provide a full-time Project Coordinator, who is experienced in administration and supervision of building construction including mechanical and electrical work, and who is hereby authorized to act as the general coordinator of interfaces between the work of separate prime contracts. For purpose of this provision, "interface" is defined to include the scheduling and sequencing of work, sharing of access to work spaces, installations, protection of each other's work, cutting and preparation of coordination drawings, inspections, tests, and temporary facilities and services.

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

Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer and water service piping.

#### **SURVEYS AND RECORDS/REPORTS:**

General: Working from lines and levels established by property survey, and as shown in relation to the work, establish and maintain bench marks and other dependable markers to set lines and levels for the work at each story of construction and elsewhere on site as needed to properly locate each element of entire project. Calculate and measure required dimensions as shown (within recognized tolerances if not otherwise indicated); do not scale drawings to determine dimensions. Advise tradesmen performing the work, of marked lines and levels provided for their use in layout of work.

#### **LIMITATIONS FOR USE OF SITE:**

General: In addition to site utilization limitations and requirements shown on drawings, and indicated by other contract documents, administer allocation of available space equitably among entities needing access and space, so as to produce best overall efficiency in performance of total work of project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.

#### **SPECIAL REPORTS:**

General: Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Architect and others affected by occurrence.

Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: visit by Mayor plus news media; extraordinary weather phenomenon), prepare and submit a special report listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information.

When such events are known or predictable in advance, advise Owner in advance at earliest possible date.

#### **INSPECTIONS, TESTS AND REPORTS:**

##### **RESPONSIBILITIES**

**Contractor Responsibilities:** The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity; these services include those specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Sum.

The Contractor shall employ and pay an independent agency, to perform specified quality control services.

The Owner will engage and pay for the services of an independent agency to perform inspections and tests only where specified as the Owner's responsibility.

**Retesting:** The Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.

Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

**Associated Services:** The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:

Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.

Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.

Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.

Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.

Security and protection of samples and test equipment at the Project site.

**Duties of the Testing Agency:** The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Architect and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.

The agency shall notify the Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.

The agency shall not perform any duties of the Contractor.

**Coordination:** The Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

##### **SUBMITTALS**

The independent testing agency shall submit a certified written report of each inspection, test or similar service, to the Architect, in duplicate, unless the contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service to the Architect through the Contractor, in duplicate.

Submit additional copies of each written report directly to the governing authority, when the authority so directs.

##### **QUALITY ASSURANCE**

**Qualification for Service Agencies:** Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

##### **REPAIR AND PROTECTION**

**General:** Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for "Cutting and Patching".

Protect construction exposed by or for quality control service activities, and protect repaired construction.

Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

##### **PART 2 - PRODUCTS**



(Not Applicable.)

### **PART 3 - EXECUTION**

#### **GENERAL INSTALLATION PROVISIONS:**

Installer's Inspection of Conditions: Require Installer of each major unit of work to inspect substrate to receive the work, and conditions under which the work will be performed, and to report (in writing to Contractor) unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in contract documents.

Inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.

Provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansions and building movements. Provide visual effect. Refer questionable visual-effect choices to Architect for final decision.

Recheck measurements and dimensions of the Work, as an integral step of starting each installation.

Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure best possible results for each unit of work, in coordination with entire work. Isolate each unit of work from non-compatible work, as required to prevent deterioration.

Coordinate enclosure (closing-in) of work with required inspections and tests, so as to avoid necessity of uncovering work for that purpose.

Mounting Heights: Except as otherwise indicated, mount individual units of work at industry-recognized standard mounting heights, for applications indicated. Refer questionable mounting height choices to Architect/Engineer for final decision.

#### **CLEANING AND PROTECTION:**

General: During handling and installation of work at project site clean and protect work in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where reasonable to ensure freedom from damage or deterioration at time of substantial completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary through remainder of construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

END OF SECTION 01205

## SECTION 01340 - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

#### DESCRIPTION OF REQUIREMENTS:

General: This section specifies procedural requirements for non-administrative submittals including shop drawings, product data, samples and miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.

Refer to other Division 1 sections and other contract documents for specifications on administrative, non-work-related submittals. Such submittals include, but are not limited to the following items:

- Payment applications.
- Performance and payment bonds.
- Insurance certificates.
- Inspection and test reports.
- Schedule of values.
- Progress reports.
- Listing of subcontractors.

Shop drawings are technical drawings and data that have been specially prepared for this project, including but are not limited to the following items:

- Fabrication and installation drawings.
- Setting diagrams.
- Shopwork manufacturing instructions.
- Templates.
- Patterns.
- Coordination drawings (for use on-site).
- Schedules.
- Design mix formulas.

Standard information prepared without specific reference to a project is not considered to be shop drawings.

Product data includes standard printed information on manufactured products that has not been specially-prepared for this project, including but not limited to the following items:

- Manufacturer's product specifications and installation instructions.
- Standard color charts.
- Catalog cuts.
- Roughing-in diagram and templates.
- Standard wiring diagrams.
- Printed performance curves.
- Operational range diagrams
- Mill reports.
- Standard product operating and maintenance manuals.

Samples both fabricated and unfabricated physical examples of materials, products and units of work; both as complete units and as smaller portions of units of work; either for limited visual inspection of (where indicated) for more detailed testing and analysis.

Mock-ups are special forms of samples, which are too large or otherwise inconvenient for handling in the manner specified for transmittal of sample submittals.

Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples.

#### SUBMITTAL PROCEDURES:

General: Refer to the General Conditions for basic procedures for submittal handling.

The Contractor shall review for compliance with the Contract Documents, STAMP INDICATING HIS APPROVAL and submit to the Architect, Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents. SUBMITTALS, WHICH ARE NOT STAMPED AND APPROVED BY THE CONTRACTOR, as required by the Contract Documents, may be returned by the Architect without action.

By APPROVING AND SUBMITTING Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that he has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.

Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the Architect/Engineer's need to review a related submittal. The Architect/Engineer reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.

Coordination of Submittal Times: Prepare and transmit each submittal to the Architect/Engineer sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Architect/Engineer's need to review submittals concurrently for coordination.

Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary.

Advise the Architect/Engineer on each submittal, as to whether processing time is critical to the progress of the work, and if the work would be expedited if processing time could be shortened.

Allow two weeks for the Architect/Engineer's initial processing of each submittal. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Architect/Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.

No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect/Engineer sufficiently in advance of the work.

Submittal Preparation: Mark each submittal with a permanent label for identification.

Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect/Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".

#### SPECIFIC SUBMITTAL REQUIREMENTS:

General: Specific submittal requirements for individual units of work are specified in the applicable specification section. Except as otherwise indicated in the individual specification sections, comply with the requirements specified herein for each type of submittal.

Submittals: Six (6) shop drawing submittals; three (3) will be retained and remainder will be returned, one of which is to be marked-up and maintained by the Contractor as "Record Document".

Shop Drawings: Information required on shop drawings includes, dimensions, identification of specific products and materials which are included in the work, compliance with specified standards and notations of coordination requirements with other work. Provide special notation of dimensions that have been established by field measurement. Highlight, encircle or otherwise indicate deviations from the contract documents on the shop drawings.

Coordination Drawings: Provide coordination drawings where required for the integration of the work, including work first shown in detail on shop drawings or product data. Show sequencing and relationship of separate units of work which must interface in a restricted manner to fit in the space provided, or function as indicated. Coordination drawings are considered shop drawings and must be definitive in nature.

Do not permit shop drawing copies without an appropriate final "Action" marking by the Architect/Engineer to be used in connection with the work.

Product Data: General information required specifically as product data includes manufacturer's standard printed recommendations for application and use, compliance with recognized standards of trade associations and testing agencies, and the application of their labels and seals (if any), special notation of dimensions which have been verified by way of

field measurement, and special coordination requirements for interfacing the material, product or system with other work.

Refer to Division 15 and Division 16 sections for additional general requirements applicable to product data for mechanical and electrical work respectively.

Preparation: Collect required product data into a single submittal for each unit of work or system. Mark each copy to show which choices and options are applicable to the project. Where product data has been printed to include information on several similar products, some of which are not required for use on the project, or are not included in this submittal, mark the copies to show clearly that such information is not applicable.

Where product data must be specially prepared for required products, materials or systems, because standard printed data is not suitable for use, submit data as "shop drawings" and not as "product data".

Submittals: Product data submittal is required for information and record and to determine that the products, materials and systems comply with the provisions of the contract documents. Therefore, the initial submittal is also the final submittal, except where the Architect/Engineer observes that there is non-compliance with the provisions of the contract documents and returns the submittal promptly to the Contractor marked with the appropriate "Action".

Provide a preliminary single-copy submittal where required, for selection of options by the Architect/Engineer.

Samples: Submit samples for the Architect/Engineer's visual review of general generic kind, color, pattern, and texture, and for a final check of the coordination of these characteristics with other related elements of the work. Samples are also submitted for quality control comparison of these characteristics between the final sample submittal and the actual work as it is delivered and installed.

Refer to individual work sections of these specifications for additional sample requirements, which may be intended for examination or testing of additional characteristics. Compliance with other required characteristics is the exclusive responsibility of the Contractor; such compliance is not considered in the Architect/Engineer's review and "Action" indication on sample submittals.

Documentation required specifically for sample submittals includes a generic description of the sample, the sample source or the product name or manufacturer, compliance with governing regulations and recognized standards. In addition, indicate limitations in terms of availability, sizes, delivery time, and similar limiting characteristics.

Refer to Division 15 and Division 16 sections for additional general requirements applicable to samples for mechanical and electrical work, respectively.

Submittal: At the Contractor's option, and depending upon the nature of the anticipated response from the Architect/Engineer, the initial submittal of samples may be either a preliminary submittal or a final submittal.

Preliminary submittal, of a single set of samples, is required where requirements indicate the Architect/Engineer's characteristics from a manufacturer's range of

standard choices is necessary. Preliminary submittals will be reviewed and returned with the Architect/Engineer's "Action" marking.

Final Submittals: Submit 6 sets of samples in the final submittal, one set will be returned.

Mock-Ups and similar samples specified in individual work sections are special types of samples. Comply with sample submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

Miscellaneous Submittals:

Inspection and Test Reports: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.

Warranties: Refer to section "Products and Substitutions" for specific general requirements on warranties, product bonds, workmanship bonds and maintenance agreements. In addition to copies desired for the Contractor's use, furnish 2 executed copies of such warranties, bonds or agreements. Provide 2 additional copies where required for maintenance manuals.

**ARCHITECT/ENGINEER'S ACTION:**

General: Except for submittals for the record and similar purposes, where action and return on submittals is required or requested, the Architect/Engineer will review each submittal, mark with appropriate "Action", and where possible return within 2 weeks of receipt. Where the submittal must be held for coordination the Architect/Engineer will so advise the Contractor without delay.

Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicated the action taken:

Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

Final-But-Restricted Release: When submittals are marked "Approved as Corrected," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

Returned for Resubmittal: When submittal is marked "Not Approved, or Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

Do not permit submittals marked "Not Approved, or Revise and Resubmit" to be used at the Project Site, or elsewhere where work is in progress.

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".

**PART 2 - PRODUCTS**

(Not Applicable).

**PART 3 - EXECUTION**

(Not Applicable).

**END OF SECTION 01340**

## SECTION 01500 - TEMPORARY FACILITIES

### PART 1 - GENERAL

#### SUMMARY

This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.

#### Temporary utilities:

Contractor may connect to owners existing water and electric as required for construction work. Coordinate with owner for all service requirements.

#### Temporary construction and support facilities required:

All construction demolition material shall be removed from site by the contractor. Provide trash container on site at location directed by owner and protect with cones and/or caution tape at all times.

#### Security and protection facilities required include but are not limited to:

Temporary fire protection.  
Barricades, warning signs, lights.  
Environmental protection.  
Temporary Partitions.

### QUALITY ASSURANCE

Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:

2018 International Building Code (IBC)  
2018 International Mechanical Code  
2018 International Plumbing Code  
2018 Fuel Gas Code  
2018 International Fire Code  
2017 National Electric Code (NEC)  
2009 ICCA117.1 Accessible and Useable Building and Facilities (ANSI)  
Health and safety regulations.  
Utility company regulations.  
Police, Fire Department and Rescue Squad rules.  
Environmental protection regulations.

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."

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).

Inspections: Owner will provide routine inspections during project for quality control.

## PROJECT CONDITIONS

### PART 2 - PRODUCTS

Water: Provide potable water approved by local health authorities.

#### EQUIPMENT

General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

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.

Sanitary Facilities: The the General Contractor will provide portable toilet facilities (at all stages of construction) for use of personnel at project site.

First Aid Supplies: Comply with governing regulations.

Fire Extinguishers: Provide types, sizes, numbers and locations as would be reasonably effective in extinguishing fires during early stages, by personnel at project site. Provide Type A extinguishers at locations of low-potential for either electrical or grease-oil-flammable liquids fires; provide Type ABC dry chemical extinguishers at other locations; comply with NFPA 10 and 241 for Classification, extinguishing agent and size required by location and class of fire exposure. Post warning and quick-instructions at each extinguisher location, and instruct all personnel at project site, at time of their first arrival, on proper use of extinguishers and other available facilities at project site. Post local fire department call number on each telephone instrument at project site.

### PART 3 - EXECUTION

#### INSTALLATION

Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

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, or are replaced by Architect's authorized use of completed permanent facilities.

#### TEMPORARY UTILITY INSTALLATION

Temporary Lighting:



Provide temporary lighting as required for adequate illumination for construction operations and traffic conditions.

#### TEMPORARY SUPPORT FACILITIES

The types of temporary support facilities required include, but not by way of limitation, storage sheds, fabrication sheds, sanitary facilities, first aid facilities, bulletin board, , project identification signs, clean-up facilities, waste disposal service and similar miscellaneous general services, all as may be reasonably required for proficient performance of the work and accommodation of personnel at the site including Owner's and Architect/Engineer's personnel. Discontinue and remove temporary support facilities, and make incidental similar use of permanent work of the project, only when and in manner authorized by Architect/Engineer; and, if not otherwise indicated, immediately before time of substantial completion. Locate temporary support facilities for convenience of users, and for minimum interference with construction activities.

Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed from other construction operations and similar activities.

Temporary Lifts and Hoists: On single and two-story construction above grade, the prime contractor and the individual subcontractors shall provide their own hoisting for all their own materials. On construction three stories above grade or higher, the prime contractor shall furnish a tower hoist or other hoisting facility of suitable capacity to carry all normal items of material going into the construction of the building and to furnish these hoisting facilities to subcontractors who will conform to a schedule mutually agreeable to both parties during the normal working hours. Cost of the operator and fuel for the hoisting facilities as used by a subcontractor shall be paid for by him. Hoisting facilities shall be maintained until the bulk of all materials are stored in the building. Hoisting facilities required for any materials which exceed the capacity of normal hoisting facilities in either size or weight, or demand excessive time, shall be provided by the individual subcontractor.

Collection and Disposal of Waste: Collect waste from construction area 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 dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

Trash Removal and Cleaning: It shall be the responsibility of all prime contractors and all subcontractors to place their rubbish and debris in a central location as designated by the General Contractor. The General Contractor shall be responsible and pay for the removal of all rubbish and debris from the job site. The prime contractors and all subcontractors shall be responsible for the protection of equipment and finishes at the job site from damages from work under his control and for all cleaning required as a result of his failure to protect including removal of all protective covers.

Access Provisions: Provide ramps, stairs, ladders and similar temporary access elements as reasonably required to perform the work and facilitate hits inspection during installation. Comply with inspections. When permanent stairs are available for access during

construction, cover finished surfaces with sufficient protection to ensure freedom from damage and deterioration at time of substantial completion.

#### SECURITY AND PROTECTION FACILITIES INSTALLATION

Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer if required by the Architect.

Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."

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.

Store combustible materials in containers in fire-safe locations.

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.

Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

Enclosure Barricades: At earliest reasonable date enclose project area, or portion thereof determined by Contractor to be sufficient to contain entire construction activity.

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 of being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.

Building Enclosure and Lockup: Coordinate with owner for location of all stored materials and for all security provisions that will be required during the project.

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 become 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.

Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

Construct dustproof partitions as required for various phase of project.

Construct dustproof, floor-to-ceiling partitions when require to control transfer of dust from construction area.

**OPERATION**

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

END OF SECTION 01500

## SECTION 01631 - PRODUCT SUBSTITUTIONS

### PART 1 - GENERAL

#### SUMMARY

This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

#### DEFINITIONS

Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

**Substitutions:** Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:

Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.

Revisions to Contract Documents requested by the Owner or Architect.

Specified options of products and construction methods included in Contract Documents.

The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

#### SUBMITTALS

**Substitution Request Submittal:** Requests for substitution will be considered if received prior to bidding. Requests received after bidding may be considered or rejected at the discretion of the Architect.

Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals. Submit included substitution request form with each request.

Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

Product Data, including Drawings and descriptions of products, fabrication and installation procedures.

Samples, where applicable or requested.

A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.

Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.

A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

Cost information, including a proposal of the net change, if any in the Contract Sum.

Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

**Architect's Action:** Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified. Acceptance will be in the form of a Change Order.

### PART 2 - PRODUCTS

#### SUBSTITUTIONS

**Conditions:** The Contractor's substitution request will be received and considered by the Architect 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.

Extensive revisions to Contract Documents are not required.

Proposed changes are in keeping with the general intent of Contract Documents.

The request is timely, fully documented and properly submitted.

The request is directly related to an "or equal" clause or similar language in the Contract Documents.

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.

The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

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.

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.

The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.

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.

Where a proposed substitution involves more than one prime Contractor, each Contractor shall cooperate with the other Contractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of products.

The Contractor's submittal and 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 Applicable)

**END OF SECTION 01631**

SECTION 01631 – PRODUCT SUBSTITUTION

This form is to be used to submit product(s) for Architect or Engineers approval prior to bids submitted. Submit this document to Architect per section 01631.

To: \_\_\_\_\_

We hereby submit for your consideration the following product instead of the specified items for the above project:

Specification Section: \_\_\_\_\_

Proposed Substitution: \_\_\_\_\_

Attach complete Product description, drawings, photographs, performance and test data, and other information necessary for evaluation.

A. What difference exists between proposed substitution and specified item?

\_\_\_\_\_

B. Does manufacturer's warranty of proposed substitution differ from that specified?

YES \_\_\_\_ NO \_\_\_\_

If yes, explain \_\_\_\_\_

C. Will maintenance and service parts be locally available for substitution?

YES \_\_\_\_ NO \_\_\_\_

If yes, explain \_\_\_\_\_

COMPANY NAME

\_\_\_\_\_  
CONTACT PERSON

\_\_\_\_\_  
TELEPHONE

END OF SECTION 012600



## SECTION 01705 - PROJECT CLOSEOUT

### PART 1 - GENERAL

#### DESCRIPTION OF REQUIREMENTS

Definitions: Closeout is hereby defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of Division 2 through 16. Time of closeout is directly related to "Substantial Completion", and therefore may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section.

#### PREREQUISITES TO SUBSTANTIAL COMPLETION

General: Prior to requesting Architect's inspection for certification of substantial completion (for either entire work or portions thereof), complete the following and list known exceptions in request:

In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

Include supporting documentation for completion as indicated in these contract documents.

Submit statement showing accounting of changes to the Contract Sum.

Advise Owner of pending insurance change over requirements.

Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.

Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) occupancy permits, operating certificates, and similar releases.

Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.

Deliver tools, spare parts, extra stocks of materials and similar physical items to Owner.

Make final change over of locks and transmit keys to Owner, and advise Owner's personnel of change over in security provisions.

Complete start-up testing of systems, and instructions of Owner's operating/maintenance personnel. Discontinue (or change over) and remove from project site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.

Complete final cleaning up requirements, including touch-up of marred surfaces.

Touch-up and otherwise repair and restore marred exposed finishes.

Inspection Procedures: General Contractor to complete his own punch list of work to be completed. This list shall be submitted to the Architect in writing a minimum of one week prior to coordinating scheduling of Architect/Engineer/Owner punch list. Non-compliance with this Article is not grounds for extension of time or for delaying the commencement of Liquidated Damages. Upon receipt of Contractor's request, Architect/Engineer will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Architect/Engineer will either prepare certificates of substantial completion, or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed. Results of completed inspection will for initial "punch list" for final acceptance.

#### PREREQUISITES TO FINAL ACCEPTANCE:

General: Prior to requesting Architect's/Engineer's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:

Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

Submit updated final statement, accounting for additional (final) changes to Contract Sum.

Submit certified copy of Architect's/Engineer's final punch list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Architect/Engineer.

Submit consent of surety if required.

Submit final liquidated damages settlement statement, acceptable to Owner.

Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.

Reinspection Procedure: Upon receipt of Contractor's notice that work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, Architect/Engineer will reinspect work. Upon completion of reinspection, acceptance or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

#### RECORD DOCUMENT SUBMITTALS:

General: Specific requirements for record documents are indicated in individual sections of

these specifications. Other requirements are indicated in General Conditions. General submittal requirements are indicated in "Submittals" sections. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistant location; provide access to record documents for Architect's/Engineer's reference during normal working hours.

Record Drawings: Maintain a white print set (blue line or black line) of contract drawings and shop drawings in clean, undamaged condition, with mark up of actual installations which vary substantially from the work as originally shown. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark up, record a cross-reference at corresponding location on working drawings. Mark with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work. Mark up new information which is recognized to be of importance to Owner, but was for some reason not shown on either contract drawings or shop drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date. Not related change order number where applicable. Organize record drawings sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on cover of each set. Upon completion of the work, submit drawings with as-built notations to the Architect.

Record Specifications: Maintain one copy of specifications, including addenda, change orders and similar modifications issued in printed form during construction, and mark up variations (of substance) in actual work in comparison with text of specifications and modifications as issued. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable. Upon completion of mark up, submit to Architect/Engineer for Owner's records.

Record Product Data: Maintain one copy of each product data submittal, and mark up significant variations in actual work in comparison with submitted information. Include both variations in product as delivered to site, and variations from manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications. Upon completion of mark-up, submit complete set to Architect/Engineer for Owner's records.

Record Sample Submittal: Immediately prior to date(s) of substantial completion, Architect/Engineer (and including Owner's personnel where desired) will meet with Contractor at site, and will determine which (if any) of submitted samples maintained by Contractor during progress of the work are to be transmitted to Owner for record purposes. Comply with Architect's/Engineer's instructions for packaging, identification marking, and delivery to Owner's sample record storage space.

Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to date(s) of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to Architect/Engineer for Owner's records.

Maintenance Manuals: Organize three copies of maintenance and operation manual information into two (2) suitable sets of manageable size, and bind into individual binders

properly identified and indexed (thumb-tabbed). Include emergency instructions, spare parts listing, warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information. Bind each manual of each set in a heavy-duty 2" 3-ring vinyl-covered binder, and include pocket folders for folded sheet information. Mark identification on both front and spine of each binder.

## PART 2 - PRODUCTS

(Not Applicable)

## PART 3 - EXECUTION

### CLOSEOUT PROCEDURES:

Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

- Maintenance manuals.
- Record documents.
- Spare parts and materials.
- Identification systems.
- Hazards.
- Cleaning.
- Warranties and bonds.
- Maintenance agreements and similar continuing commitments.

As part of instruction for operating equipment, demonstrate the following procedures:

- Start-up.
- Shutdown.
- Emergency operations.
- Noise and vibration adjustments.
- Safety procedures.
- Economy and efficiency adjustments.
- Effective energy utilization.

### FINAL CLEANING:

General: Special cleaning for specific units of work is specified in sections of Divisions 2 through 16. General cleaning during progress of work is specified in "Temporary Facilities" section of this Division. Provide final cleaning of the work, at time indicated, consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first class building cleaning and maintenance program. Comply with manufacturer's instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required.

Remove labels which are not required as permanent labels.

Clean transparent materials, including mirrors and window/ door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent materials.

Clean exposed exterior and interior hard-surfaced finishes, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.

Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and electrical equipment; remove excess lubrication and other substances.

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

Clean concrete floors in non-occupied spaces vacuum clean.

Vacuum clean carpeting surfaces and similar soft surfaces.

Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.

Clean food service equipment to a condition of sanitation ready and acceptable for intended food service use.

Clean light fixtures and lamps so as to function with full efficiency.

Clean project site (yard and grounds), including landscape development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits. Rake grounds which are neither planted nor paved, to a smooth, even-textured surface.

Removal of Protection: Except as otherwise indicated or requested by Architect/Engineer, remove temporary protection devices and facilities which were installed during course of the work to protect previously completed work during remainder of construction period.

Compliances: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated work have become Owner's property, dispose of these to Owner's best advantage as directed.

**END OF SECTION 01705**

## SECTION 01740 - WARRANTIES AND BONDS

### PART 1 - GENERAL

#### SUMMARY

This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.

Specific requirements for warranties for the Work and products installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.

Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

#### DEFINITIONS

Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

#### WARRANTY REQUIREMENTS

Related Damages and Losses: When correcting warranted 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 warranted Work.

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.

Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

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.

Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

#### SUBMITTALS

Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the Work.

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 to the Owner through the Architect for approval prior to final execution.

Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.

Form of Submittal: At Final Completion, provide PDF copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

#### PART 2 - PRODUCTS

(Not Applicable).

#### PART 3 - EXECUTION

(Not Applicable).

**END OF SECTION 01740**



## SECTION 06100 - ROUGH CARPENTRY

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

Definition: Rough carpentry includes carpentry work not specified as part of other sections and which is generally not exposed, except as otherwise indicated. Types of work in this section include rough carpentry for:

Wood grounds, nailers and blocking.

Wood furring.

#### SUBMITTALS:

Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installation and finishing of treated material.

Preservative Treatment: For each type specified, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained and conformance with applicable standards.

For water-borne Treatment include statement that moisture content of treated materials was reduced to levels indicated prior to shipment to project site.

Fire-Retardant Treatment: Include certification by treating plant that treatment material complies with specified standard and other requirements.

#### PRODUCT HANDLING:

Delivery and Storage: Keep material 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 material.

For lumber and plywood pressure treated with waterborne chemicals, sticker between each course to provide air circulation.

#### PROJECT CONDITIONS:

Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

### PART 2 - PRODUCTS

#### LUMBER, GENERAL:

Lumber Standards: Manufacture lumber 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.

Grade Stamps: Factory-mark each piece of lumber 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.

For exposed lumber, apply grade stamps to ends or back of each piece, or omit grade stamps entirely and issue certificate of grade compliance from inspection agency in lieu of grade stamp.

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.

Provide dressed lumber, S4S, unless otherwise indicated.

Provide lumber with 15% maximum moisture content at time of dressing and shipment for sizes 2" or less in nominal thickness, unless otherwise indicated.

#### DIMENSION LUMBER:

For light framing, provide "Stud" or "Standard" grade lumber for stud framing (2" to 4" thick, 2" to 2" wide, 10' and shorter) and "Standard" grade for other light framing (2" to 4" thick, 2" to 4" wide), any species.

#### BOARDS:

Exposed Boards: Where boards will be exposed in the finished work, provide the following:

Moisture Content: 15% maximum, "MC-15".

Concealed Boards: Where boards will be concealed by other work, provide lumber of 19% maximum moisture content (S-DRY).

#### MISCELLANEOUS LUMBER:

Provide wood for support or attachment of other work including cant strips, bucks, nailers, blocking, furring, grounds, stripping and similar members. Provide lumber of sizes indicated, worked into shapes shown, and as follows:

Moisture Content: 19% maximum for lumber items not specified to receive wood preservative treatment.

Grade: Standard Grade light framing size lumber of any species or board size lumber as required. No. 3 Common or Standard grade boards per WCLIB or WWPA rules or No. 3 boards per SPIB rules.

#### CONSTRUCTION PANELS:

Construction Panel Standards: Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood panels and, for products not manufactured under PS 1 provisions, with American Plywood Association (APA) "Performance Standard and Policies for Structural-Use Panels", Form No. E445.

Trademark: Factory-mark each construction panel with APA trademark evidencing compliance with grade requirements.



Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant treated plywood panels with grade designation, APA C-D PLUGGED INT with exterior glue, in thickness indicated, or, if not otherwise indicated, not less than 1/2".

#### **MISCELLANEOUS MATERIALS:**

Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

#### **WOOD TREATMENT BY PRESSURE PROCESS:**

Fire-Retardant Treatment: Where fire-retardant treated wood ("FRTW") is indicated, pressure impregnate lumber and plywood with fire-retardant chemicals to comply with AWPA C20 and C27, respectively, for treatment type indicated below; identify "FRTW" lumber with appropriate classification marking of Underwriters Laboratories, Inc., U. S. Testing, Timber Products Inspection or other testing and inspecting agency acceptable to authorities having jurisdiction.

Interior Type A: Use where "FRTW" wood is indicated for interior applications.

Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.

### **PART 3 - EXECUTION**

#### **INSTALLATION, GENERAL:**

Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.

Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. 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; predrill as required.

#### **WOOD GROUNDS, NAILERS AND BLOCKING:**

Provide wherever 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. Coordinate location with other work involved.

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.

Provide permanent grounds of dressed, preservative treated, key-bevelled lumber not less than 1 1/2" wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.

**END OF SECTION 06100**

## SECTION 06400 – ARCHITECTURAL WOODWORK

### PART 1 - GENERAL

#### SUMMARY:

This Section includes the following:

Plastic-laminate casework.

Solid surface counter tops

Related Sections include the following:

Division 6 Section "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing woodwork and concealed within other construction before woodwork installation.

Division 9 Section "Painting" for field finishing of interior architectural woodwork.

#### DEFINITIONS

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

#### SUBMITTALS

Product Data: For each type of product indicated, including cabinet hardware and accessories, and finishing materials and processes.

Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, attachment devices and other components. Submit shop drawings for the following:

Casework.

Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of material indicated.

Plastic laminates.

Solid surface

Samples for Verification: For the following:

Plastic-laminate-clad panel products and solid surface, 8 by 10 inches for each type, color, pattern, and surface finish.

Exposed cabinet hardware and accessories, one unit for each type and finish.

Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.

#### QUALITY ASSURANCE

Installer Qualifications: An experienced installer who has completed architectural woodwork similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

Fabricator Qualifications: A firm experienced in producing architectural woodwork similar to that indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork, construction, finishes, and other requirements.

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

Mockups: Before fabricating and installing interior architectural woodwork, build mockups for each form of construction and finish required to verify selections made under sample submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed work.

Build mockups in the location and of the size indicated or, if not indicated, as directed by Architect.

Notify Architect seven days in advance of dates and times when mockups will be fabricated and installed.

Demonstrate the proposed range of aesthetic effects and workmanship.

Obtain Architect's approval of mockups before starting interior architectural woodwork fabrication.

Maintain mockups during construction in an undisturbed condition as a standard for judging the completed work.

Approved mockups may become part of the completed work if undisturbed at time of Substantial Completion.

## DELIVERY, STORAGE, AND HANDLING

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

## PROJECT CONDITIONS

Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed and indicate measurements on Shop Drawing.

Established Dimensions: Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

## COORDINATION

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

## PART 2 – PRODUCTS

### BASIC MATERIALS AND FABRICATION METHODS:

General: Except as otherwise indicated, comply with following requirements for architectural woodwork not specifically indicated as prefabricated or prefinished standard products.

Wood Moisture Content: Provide kiln-dried (KD) lumber with an average content range of 9% to 13% for exterior work and 6% to 11% for interior work. Maintain temperature and relative humidity during fabrication, storage and finishing operations so that moisture content values for woodwork at time of installation do not exceed the following:

Interior Wood Finish: 4% - 9% for dry regions (as defined by AWI).

Interior Wood Finish: 5% - 10% for mild regions (as defined by AWI).

Interior Wood Finish: 8% - 13% for damp regions (as defined by AWI).

## INTERIOR ARCHITECTURAL WOODWORK:

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

Available Manufacturers: Subject to compliance with requirements, manufacturers offering high-pressure decorative laminates that may be incorporated into the work include, but are not limited to, the following:

Formica Corporation.

Laminart.

Pionite

Nevamar Corp.

Wilsonart International; Div. of Premark International, Inc.

SOLID SURFACING MATERIAL: Shall be a homogeneous non-porous material with the color and/or pattern all the way through the material. All material shall have Class I flammability rating. Colors as selected by architect from complete line of all colors and/or patterns. Up to four colors shall be used on this project.

Available Manufacturers: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

Corian

Avonite

Wilsonart

Formica

## FIRE-RETARDANT-TREATED MATERIALS

General: Where indicated, use materials impregnated with fire-retardant chemical formulations indicated by a pressure process or other means acceptable to authorities having jurisdiction to produce products with fire-test-response characteristics specified.

Do not use treated material that does not comply with requirements of referenced woodworking standard or that is warped, discolored, or otherwise defective.

Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated material from untreated material.

Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with AWPA C20 (lumber) and AWPA C27 (plywood), for woodwork items indicated as fire-retardant treated. Use the following treatment type:

Interior Type A: Low-hygroscopic formulation.

Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread rating of 25 or less and smoke-developed rating of 25 or less per ASTM E 84.

For panels ¾ inch thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: density, 45-lb/cu. Ft; modulus of

rupture, 1600 psi; modulus of elasticity, 300,000 psi; internal bond, 80 psi; and screw-holding capacity on face and edge, 250 lbf and 225 lbf, respectively.

For panels  $1\frac{3}{16}$  to  $1\frac{1}{4}$  inches thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: density, 44-lb/cu. ft; modulus of rupture, 1300 psi; modulus of elasticity, 250,000 psi; linear expansion, 0.50 percent; and screw-holding capacity on face and edge, 250 lbf and 175 lbf, respectively.

Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread rating of 25 or less and smoke-developed rating of 200 or less per ASTM E 84.

Product: Subject to compliance with requirements, provide "Medite FR" by Sierra Pine Ltd.; Medita Div.

### PLASTIC LAMINATE CABINETS

Quality Standard: Comply with AWI Section 400 requirements for laminate cabinets.

Grade: Custom.

AWI Type of Cabinet Construction: As indicated.

Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:

Horizontal Surfaces Other Than Tops: HGS  
Postformed Surfaces: HGP  
Vertical Surfaces: VGS  
Edges: VGS

Materials for Semi-exposed Surfaces: Provide surface materials indicated below:

Surfaces Other Than Drawer Bodies: Thermally fused melamine.  
Drawer Sides and Backs: Thermally fused melamine.  
Drawer Bottoms: Thermally fused melamine.

Color to be white, almond or gray per architects selection.

Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

Colors as selected by architect from standard colors, including patterns and "matrix" colors. Up to 10 colors to be used on this project.

Provide dust panels of  $\frac{1}{4}$  inch plywood or tempered hardboard above compartments and drawers, unless located directly under tops.

Fabrication:

Cabinet backs:  $\frac{1}{2}$ " particleboard.  
Cabinet edges: Color matched 1 mm pvc. machine applied.

Closed units: Interior finished with thermally fused melamine.

Exposed ends: Faced with plastic laminate and balanced on the interior with cabinet liner.

### CABINET HARDWARE AND ACCESSORIES

General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 8 Section "Door Hardware."

Hardware Standard: Comply with BHMAA156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.

Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

### PART 3 – EXECUTION

#### PREPARATION

Condition woodwork to average prevailing humidity conditions in installation areas before installation.

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

#### INSTALLATION

Quality Standard: Install woodwork to comply with AWI Section 1700 for the same grade specified in Part 2 of this Section for type of woodwork involved.

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

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

Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with recommendations of chemical treatment manufacturer, including those for adhesives used to install woodwork.

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

Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

Install cabinets with no more than  $\frac{1}{8}$  inch in 96-inch sag, bow, or other variation from a straight line.

Maintain veneer sequence matching of cabinets with transparent finish.

Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c.

Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.

Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.

Secure backsplashes to walls with adhesives.

Caulk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

#### **ADJUSTING AND CLEANING**

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

Clean, lubricate, and adjust hardware.

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

**END OF SECTION 06400**

## SECTION 08110 - STEEL DOORS AND FRAMES

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

Extent of standard steel doors and frames is indicated and scheduled on drawings.

Finish hardware is specified elsewhere in Division-8.

#### QUALITY ASSURANCE:

Provide doors and frames complying with Steel Door Institute Recommended Specifications: Standard Steel Doors and Frames (SDI-100) and as herein specified.

Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed, and labeled in accordance with ASTM E 152 "Standard Methods of Fire Tests of Door Assemblies" by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

Oversize Fire-Rated Door Assemblies: For door assemblies required to be fire-rated and exceeding sizes of tested assemblies, provide certificate or label from an approved independent testing and inspection agency, indicating that door and frame assembly conforms to the requirements of design, materials and construction as established by individual listings for tested assemblies.

#### SUBMITTALS:

Product Data: Submit manufacturer's technical product data substantiating that products comply with requirements.

Shop Drawings: Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

Indicate coordinate of glazing frames and stops with glass and glazing requirements.

Label Construction Certification: For door assemblies required to be fire-rated and exceeding sizes of tested assemblies, submit manufacturer's certification form that each door and frame assembly has been constructed to conform to design, materials and construction equivalent to requirements for labeled construction.

#### DELIVERY, STORAGE AND HANDLING:

Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory-finished doors.

Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.

Store doors and frames at building site under cover. Place units on minimum 4" high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked doors to promote air circulation.

### PART 2 - PRODUCTS

#### ACCEPTABLE MANUFACTURERS:

Manufacturer: Subject to compliance with requirements, provide steel doors and frames by one of the following:

##### Steel doors and Frames, (General):

Basis of Design: Curries: Curriestain  
Ceco Corp.  
Curries Mfg., Inc.  
Steelcraft/Div. American Standard Co.

#### MATERIALS:

Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.

Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, with ASTM A 525, G60 zinc coating, mill phosphatized.

Supports and Anchors: Fabricate of not less than 18-gage galvanized sheet steel.

Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.

Shop Applied Paint:

Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

#### FABRICATION, GENERAL:

Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site. Comply with SDI-100 requirements as follows:

Interior Doors: SDI-100, Grade II, heavy-duty, Model 1, minimum 18-gage faces.



Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, from only cold-rolled steel.

Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).

Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.

Finish Hardware Preparation: Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for door and frame preparation for hardware.

Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.

Locate finish hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware", published by Door and Hardware Institute.

#### Shop Painting:

Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.

Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.

Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

#### **STANDARD STEEL DOORS:**

Provide metal doors of types and styles indicated on drawings or schedules.

#### **STANDARD STEEL FRAMES:**

Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 16-gage cold-rolled furniture steel.

Fabricate frames with mitered corners, welded construction for exterior applications and knocked-down for field assembly at interior applications.

Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

Plaster Guards: Provide 26-gage steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

#### **PART 3 - EXECUTION**

#### **INSPECTION:**

Installer must examine substrate and conditions under which steel doors and frames are to be installed and must notify Contractor in writing of any conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

#### **INSTALLATION:**

General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

Placing frames: Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames", unless otherwise indicated.

Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.

At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.

Install fire-rated frames in accordance with NFPA Std. No. 80.

In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.

#### Door Installation:

Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.

Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

#### **ADJUST AND CLEAN:**

Prime Coat Touch-Up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from prefinished doors.

Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating conditions.

**END OF SECTION 08110**

## SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

### PART 1 - GENERAL

#### SUMMARY:

Extent of aluminum entrances and storefronts is indicated on drawings and schedules.

Aluminum entrance and storefront types required for the project include:

- Exterior entrance doors.
- Vestibule doors matching entrance doors.
- Interior Doors.
- Frames for exterior entrances.
- Frames for interior doors.
- Storefront type framing system.

Glazing: Refer to "Glass and Glazing" section of Division 8 for glazing requirements for aluminum entrances and storefronts, including doors specified to be factory-paned.

#### SYSTEM DESCRIPTION:

Performance Requirements: Provide aluminum entrance and storefront assemblies that comply with specified performance characteristics. Each system shall be tested by a recognized testing laboratory or agency in accordance with specified test methods. Provide certified test results.

Thermal Movement: Provide systems capable of withstanding thermal movements resulting from an ambient temperature range of 120 deg. F (76 deg. C), that could cause a metal surface temperature range of 180 deg. F. (100 deg. C) within the framing system.

Wind Loading: Provide assemblies capable of withstanding a uniform test pressure of 35 psf inward and 30 psf outward when tested in accordance with ASTM E 330.

Fixed Framing Transmission Characteristics: Provide aluminum entrance and storefront framing system that complies with requirements indicated for transmission characteristics.

Air Infiltration: Provide framing system with an air infiltration rate of not more than 0.06 CFM per sq. ft. of fixed area (excluding operable door edges) when tested in accordance with ASTM E 283 at an inward test pressure differential of 6.24 psf.

Water Penetration: Provide framing systems with no water penetration (excluding operable door edges) as defined in the test method when tested in accordance with ASTM E 331 at an inward test pressure differential of 6.24 lbf. per sq. ft.

Condensation Resistance: Where framing systems are "thermal-break" construction, provide units tested for thermal performance in accordance with AAMA 1502 showing condensation resistance factor (CRF) of not less than 45.

Aluminum Entrance Transmission Characteristics: Provide entrance doors with jamb and head frames that comply with requirements indicated for transmission characteristics.

Air Infiltration: Provide doors with an air infiltration rate of not more than 0.50 CFM for single doors and 1.0 for pairs of doors when tested in accordance with ASTM E 283 at an inward test pressure differential of 1.567 psf.

#### SUBMITTAL:

Product Data: Submit manufacturer's product specifications, technical product data, standard details, and installation recommendations for each type of entrance and storefront product required. Include the following information:

- Fabrication methods.
- Finishing.
- Hardware.
- Accessories.

Shop Drawings: Submit shop drawings for fabrication and installation of entrances and storefronts, including the following:

- Elevations.
- Detail sections of typical composite members.
- Hardware, mounting heights.
- Anchorage and reinforcements.
- Expansion provisions.
- Glazing details.

#### QUALITY ASSURANCE:

Manufacturer's Qualifications: Provide entrances and storefront produced by a single manufacturer with not less than 5 years successful experience in the fabrication of assemblies of the type and quality required.

Installer's Qualifications: Entrances and storefront shall be installed by a firm that has not less than 5-years successful experience in the installation of systems similar to those required.

Design Criteria: Drawings are based on one manufacturer's entrance and storefront system. Another manufacturer's system of a similar and equivalent nature will be acceptable when, in the Architect's sole judgment, differences do not materially detract from the design concept or intended performance.

#### PROJECT CONDITIONS:

Field Measurements: Check openings by field measurement before fabrication to ensure proper fitting of work; show measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay in the work. Where necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit.

### PART 2 - PRODUCTS

#### MANUFACTURERS:

Manufacturer: Subject to compliance with requirements, provide products of one of the following:

**(Any additional manufacturers wanting to be approved as equals must be approved before bidding. No equals will be approved after bidding.)**

EFCO Corporation  
Kawneer

#### **MATERIALS:**

Aluminum Members: Provide alloy and temper recommended by the manufacturer for strength, corrosion resistance, and application of required finish; comply with ASTM B 221 for extrusions and ASTM B 209 for sheet or plate.

Fasteners: Provide fasteners of aluminum, nonmagnetic stainless steel, or other materials warranted by the manufacturer to be noncorrosive and compatible with aluminum components, hardware, anchors and other components.

Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125" thick, reinforce the interior with aluminum or nonmagnetic stainless steel to receive screw threads, or provide standard noncorrosive pressed-in splined grommet nuts.

Exposed Fasteners: Except where unavoidable for application of hardware, do not use exposed fasteners. For the application of hardware, use fasteners that match the finish of member or hardware being fastened.

Provide Phillips flat-head machine screws for exposed fasteners.

Concealed Flashing: Provide 26 gage minimum dead-soft stainless steel, or 0.026" minimum extruded aluminum of alloy and type selected by manufacturer for compatibility with other components.

Brackets and Reinforcements: Where feasible, provide high-strength aluminum brackets and reinforcements; otherwise provide nonmagnetic stainless steel or hot-dip galvanized steel complying with ASTM A 386.

Concrete/Masonry Inserts: Provide concrete and masonry inserts fabricated from cast-iron, malleable iron, or hot-dip galvanized steel complying with ASTM A 386.

Compression Weatherstripping: Provide the manufacturer's standard replaceable compressible weatherstripping gaskets of molded neoprene complying with ASTM D 2000 or molded PVC complying with ASTM D 2287.

Sliding Weatherstripping: Provide the manufacturer's standard replaceable weatherstripping of wool, polypropylene, or nylon woven pile, with nylon fabric or aluminum strip backing, complying with ASMA 701.2.

Glass and Glazing Materials: Glass and glazing materials shall comply with requirements of "Glass and Glazing" section of these specifications.

#### **COMPONENTS:**

Storefront Framing System: Provide inside-outside matched resilient flush-glazed storefront framing system with provisions for glass replacement. Shop-fabricate and preassemble frame components where possible.

Aluminum Door Frames: Frames tubular and channel frame assemblies, as indicated, with welded or mechanical joints in accordance with manufacturer's standards; reinforce as necessary to support required loads. Basis of design Kawneer 350 medium style.

#### **Stile-and-Rail Type Aluminum Doors:**

Frame: Provide tubular frame members, fabricated with mechanical joints using heavy inserted reinforcing plates and concealed tie-rods or j-bolts.

Design: Provide 1 3/4" thick doors of design indicated. Medium style (vertical style and top rail to be 3 1/2" min with 10" bottom rail)

Glazing: Fabricate doors to facilitate replacement of glass or panels, without disassembly of stiles and rails. Provide snap-on extruded aluminum glazing stops, with exterior stops anchored for non-removal.

#### **HARDWARE:**

General: Refer to hardware section in Division-8 for requirements for hardware items other than those indicated to be provided by the aluminum entrance manufacturer.

Provide manufacturer's heavy-duty hardware units as indicated, scheduled, or required for operation of each door, including the following items of sizes, number, and type recommended by manufacturer for service required; finish to match door.

Continuous Geared Hinge: Provide manufacturers standard continuous geared hinge. Fabricate to full height of door and frame. Color to match door.

Keyed Cylinders: Provide under Section 08700.

Pull Handles: Provide architects classic round offset pull set equal to Kawneer CO-12 pulls with 12" center to center.

Finish: US32D. Handle to be thru-bolted.

Thresholds: Provide extruded aluminum threshold of size and design indicated in mill finish, complete with anchors and clips and not more than 1/2" high with beveled edges providing a floor level change with a slope of not more than 1:12, coordinated with pivots and floor-concealed closers.

#### **FABRICATION:**

General: Sizes of door and frame units, and profile requirements, are indicated on drawings. Variable dimensions are indicated, with maximum and minimum dimensions required to achieve design requirements and coordination with other work.

Prefabrication: Before shipment to the project site, complete fabrication, assembly, finishing, hardware application, and other work to the greatest extent possible. Disassemble components only as necessary for shipment and installation.

Preglaze door and frame units to greatest extent possible.

Do not drill and tap for surface-mounted hardware items until time of installation at project site.

Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of metal work to prevent damage to exposed finish surfaces. For hardware, perform these operations prior to application of finishes.

Welding: Comply with AWS recommendations; grind exposed welds smooth and restore mechanical finish.

Reinforcing: Install reinforcing as required for hardware and necessary for performance requirements, sag resistance and rigidity.

Dissimilar Metals: Separate dissimilar metals with zinc chromate primer, bituminous paint, or other separator that will prevent corrosion.

Continuity: Maintain accurate relation of planes and angles, with hairline fit of contacting members.

Fasteners: Conceal fasteners wherever possible.

Weatherstripping: For exterior doors, provide compression weatherstripping against fixed stops; at other edges, provide sliding weatherstripping retained in adjustable strip mortised into door edge.

Provide EPDM or vinyl blade gasket weatherstripping in bottom door rail, adjustable for contact with threshold.

At interior doors and other locations without weather-stripping, provide neoprene silencers on stops to prevent metal-to-metal contact.

#### **FINISHES:**

Natural Anodized Finish: Provide NAAMM AA-M12C22A41, Class I (non-specular as fabricated mechanical finish; chemical etch, medium matte; minimum thickness 0.7 mil)

### **PART 3 - EXECUTION**

#### **INSTALLATION:**

Comply with manufacturer's instructions and recommendations for installation.

Set units plumb, level, and true to line, without warp or rack of framing members, doors, or panels. Provide proper support and anchor securely in place.

Separate aluminum and other corrodible metal surfaces from sources of corrosion of electrolytic action at points of contact with other materials. Comply with

requirements specified under paragraph "Dissimilar Materials" in the Appendix to AAMA 101.85.

Drill and tap frames and doors and apply surface-mounted hardware items. Comply with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.

Set sill members and other members in bed of sealant as indicated, or with joint fillers or gaskets as indicated to provide weathertight construction. Comply with requirements of Division 7 for sealants, fillers, and gaskets.

Refer to "Glass and Glazing" section of Division 8 for installation of glass and other panels indicated to be glazed into doors and framing, and not preglazed by manufacturer.

#### **ADJUSTING:**

Adjust operating hardware to function properly, for smooth operation without binding, and for weathertight closure.

#### **CLEANING:**

Clean the completed system, inside and out, promptly after installation, exercising care to avoid damage to coatings.

Clean glass surfaces after installation, complying with requirements contained in the "Glass and Glazing" section for cleaning and maintenance. Remove excess glazing and sealant compounds, dirt and other substances from aluminum surfaces.

#### **PROTECTION:**

Institute protective measures required throughout the remainder of the construction period of ensure that aluminum entrances and storefronts will be without damage or deterioration, other than normal weathering, at time of acceptance.

#### **END OF SECTION 08410**

## SECTION 08700 - BUILDERS HARDWARE

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

Definition: "Builders Hardware" includes items known commercially as builders hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame. Types of items in this section include, but are not necessarily limited to:

- Hinges
- Pivots
- Spring Hinges
- Lock Cylinders and Keys
- Locks and Latch Sets
- Bolts
- Exit Devices
- Push/Pull Units
- Bi-fold Door Hardware
- Closers
- Overhead Holders
- Miscellaneous Door Control Devices
- Door Trim Units
- Protection Plates

#### QUALITY ASSURANCE:

Manufacturer: Obtain each kind of hardware (latch and locksets, hinges, closers, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.

Supplier: A recognized hardware supplier who has been furnishing hardware in the project's vicinity for a period of not less than two years, and who is, or has in employment, an experienced hardware consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architects and Contractor.

Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80. Provide only hardware which has been tested and listed by UL for types and sizes of doors required and complies with requirements of door and door frame labels.

Where emergency exit devices are required on fire-rated doors, (with supplementary marking on door's UL labels indicated "Fire Door to be Equipped with Fire Exit Hardware") provide UL label on exit devices indicating "Fire Exit Hardware."

#### SUBMITTALS:

Product Data: Submit manufacturer's technical information for each item of hardware. **Contractor shall submit with the submittals an actual technical cut sheet with photo of item being supplied for review.** Include whatever information may be necessary to show

compliance with requirements and include instructions for installation and for maintenance of operating parts and finish. Transmit copy of applicable data to installer.

Hardware schedule: Submit final hardware schedule in the manner and format specified, complying with the actual construction progress schedule requirements. Hardware schedules are intended for coordination of work. Hardware Schedule shall conform to and following item numbers as per outlined in following architects schedule.

Final Hardware Schedule: Based on Builders Hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

Type, style, function, size and finish of each hardware item.

Name and manufacturer of each item.

Fastenings and other pertinent information.

Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.

Explanation of all abbreviations, symbols, codes, etc. contained in schedule.

Mounting locations for hardware.

Door and frame sizes and materials.

Keying information.

Submittal Sequence: Submit initial draft of schedule along with essential product data in order to facilitate the fabrication of other work (e.g., hollow metal frame) which is critical in the project construction schedule. Submit final draft of schedule after samples, product data, coordination with shop drawings of other work, delivery schedules, and similar information has been completed and accepted.

Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.

#### PRODUCT HANDLING:

Packaging of hardware, on a set by set basis, is the responsibility of the supplier. As material is received by the hardware supplier from the various manufacturers, sort and repackage in containers marked with the hardware set number. Two or more identical sets may be packed in the same container.

Inventory hardware jointly with representatives of the hardware supplier and the hardware installer until each is satisfied that the count is correct.

Provide secure lock-up for hardware delivered to the project, but not yet installed. Control and handling and installation of hardware items which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation.



## JOB CONDITIONS:

Coordination: Coordinate hardware with other work. Tag each item or package separately, with identification related to the final hardware schedule, and include basic installation instructions in the package. Furnish hardware items of proper design for use on doors and frames of the thicknesses, profile, swing, security, and similar requirements indicated, as necessary for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check the shop drawings of such other work, to confirm that adequate provisions are made for the proper installation of hardware.

## PART 2 - PRODUCTS

Refer to Section 08410 for hardware that will be supplied by aluminum storefronts supplier. Items listed there not to be duplicated by hardware supplier.

### SCHEDULED HARDWARE:

Requirements for design, grade, function, finish, size and other distinctive qualities of each type of builders hardware is indicated in the Builders Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the manufacturers. Any manufacturer's other than those specified in the hardware schedule must be approved prior to bidding.

### MATERIALS AND FABRICATION:

General: The location of hardware on doors and frames shall be as follows:

#### HINGES, BUTTS AND PIVOTS:

Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template produced units.

Screws: Furnish phillips flat-head all-purpose or machine screws for installation of units, except furnish phillips flat-head all-purpose or wood screws for installation of units into wood. Furnish screw heads to match surface of hinges or pivots.

Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

Steel Hinges: Steel Pins

Non-Ferrous Hinges: Stainless Steel Pins

Exterior Doors: Non-removable Pins

Out-swing Corridor Doors: Non-removable Pins

Interior Doors: Non-rising Pins

Tips: Flat Button and Matching Plug, finished to match leaves

Number of Hinges: Provide number of hinges indicated but not less than three hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.

Key Control and Keying:

All locksets shall be keyed as determined by key conference with the Owner within thirty (30) days after award of general contract.

Each key shall have the day change number and a key identification symbol, identification symbol shall include not more than six of both numbers and letters, and shall consist of the individual key number, keying code number which shall indicate change key set, master key set, and grandmaster key set.

Furnish two (2) day keys per lockset, six (6) master keys per master keyed set, six (6) grandmaster keys for the project.

### LOCK CYLINDERS AND KEYING:

New System: Master key the locks to the Owner's requirements with a new master key for the project.

Existing System: Grandmaster key the locks to the Owner's existing system, with a new master key for the project.

Review the keying system with the Owner and provide the type required (master, grandmaster, or great-grandmaster), either new or integrated with Owner's existing system.

Equip locks with 6-pin tumbler cylinders.

Metals: Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.

Comply with the Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.

Key Material: Provide keys of nickel silver only.

<u>HINGES:</u>	Top	5" from head of frame to top of hinge.
	Bottom	10" from finish floor to bottom of hinge.
	Intermediate	Centered between top and bottom hinge.
	On Dutch Doors	5" from head of frame to top of hinge. 10" from split line to top and bottom respectively of lower and upper intermediate hinges.

Dimensions below are from finished floor:

Unit and Integral Locks	38" to centerline of knob
Deadlocks	50" to centerline of cylinder
Door Pulls	42" to center of grip
Push Pull Latches	42" to centerline of latch
Arm Pulls	47" to centerline
Push Plates	48" to centerline of plate



Roller Latches

45" to centerline

Hand of Doors: The drawings show the directions of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.

Base Metals: Product hardware units of the basic metal and forming metal indicated, using the manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the applicable hardware units by FS FF-H-106, FS FF-G-111, FS FF-H-116 and FS FF-H-121. Do not furnish "optional" materials or forming methods for those indicated except as otherwise specified.

Fasteners: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.

Furnish screws for installation, with each hardware item. Provide phillips flat head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or, if exposed in surfaces of other work, to match the finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.

Provide concealed fasteners for hardware units which are exposed when the door is closed, except to the extent no standard units of the type specified are available with concealed fasteners. Do not use through bolts for installation where the bolt head or the nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work.

Tools for Maintenance: Furnish a complete set of specialized tools as needed for Owner's continued adjustment, maintenance, and removal and replacement of builders hardware.

KEY QUALITY: Furnish two (2) change keys for each lock; six (6) master keys for each master system; and six (6) grandmaster keys for each grandmaster system.

#### LOCKS, LATCHES AND BOLTS:

Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set.

Provide standard (open) strike plates for interior doors of residential units where wood door frames are used.

Lock Throw: Provide 5/8" minimum throw of latch and deadbolt used on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

Provide 1/2" minimum throw on other latch and deadlock bolts.

Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze or stainless steel, with minimum 12" long rod.

Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position.

#### PUSH/PULL UNITS:

Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation; through-bolted for matched pairs, but not for single units.

#### CLOSER AND DOOR CONTROL DEVICES:

Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of doors, exposure to weather and anticipated frequency of use. Interior closers shall be adjustable power and capable of meeting handicapped opening requirements.

Where parallel arms are indicated for closers, provide closer unit one size larger than recommended for use with standard arms.

Combination Door Closers and Holders: Provide units designed to hold door in open position under normal usage and to release and automatically close door under fire conditions. Incorporate an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.

Provide integral smoke detector device in combination door closer and holders complying with UL 228.

Flush Floor Plates: Provide finished metal flush floor plates for floor closers except where thresholds are indicated and cover plate is specified to be an integral part of threshold. Finish floor plate to match hardware sets, unless otherwise indicated.

Recessed Floor Plates: Provide recessed floor plates where no thresholds are indicated and floor closers are located in an area of resilient flooring, stone flooring or terrazzo. Recess plates to receive an insert of the floor finish material, of the normal thickness as indicated. Provide extended spindle on closer as may be necessary to accommodate thick floor finish inserts.

#### DOOR TRIM UNITS:

Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kickplate, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screws.

Fabricate protection plates (armor, kickplates or mop) not more than 2" on stop side smaller than the door width x the height indicated.

Metal Plates: Stainless steel, 18 gage.

#### HARDWARE FINISHES:

Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door opening. In general, match items to the manufacturer's standard finish for the latch and lockset (or push/pull units if no latch/lock sets) for color and texture.

Provide finishes which match those established by BHMA or, of none established, match the Architect's sample.

Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.

**PART 3 - EXECUTION**

**INSTALLATION:**

Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations and except as may be otherwise indicated by Architect.

Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Custom Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.

Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way. Coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 9 Section. Do not install surface-mounted items until finishes have been completed on the substrate.

Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

**ADJUST AND CLEAN:**

Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.

Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and odors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

Instruct Owner's personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the installer, accompanied by the representative of the latch and

lock manufacturer, shall return to the project and readjust every item of hardware to restore proper function of doors and hardware.

Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

**SET #1**

1	Cylinder	Compatible with City Utilities Best Core 7 pin format	
2	Floor Stops	FS441 x 626	IVES
1	Exit Device	SecuriTron TSB	Reuse Existing
1	Automatic Operator		Reuse Existing
Balance of Hardware by Aluminum Door Manufacturer			

**SET #2**

1	Automatic Operator		Reuse Existing
Balance of Hardware by Aluminum Door Manufacturer			
Coordinate access controls and door operation with Owner's vender			

**SET #3**

3	Hinges	TA2714 4 1/2 x 4 1/2 x 626	McKinney
1	Push/ Pull	11073C/73CLX626	Rockwood
1	Cylinder	Compatible with City Utilities Best Core 7 pin format	
1	Closer	4040XP	LCN
1	Wall Stop	409	Rockwood
3	Silencers		Glynn Johnson
Coordinate with Owner's access control vendor			

**SET #4**

3	Hinges	TA2714 4 1/2 x 4 1/2 x 626	McKinney
1	Push/ Pull	11073C/73CLX626	Rockwood
1	Wall stop (Door 5 only)	409	Rockwood
1	Closer	4040XP	LCN
1	Door Sign	6" x 8" - Mount 48" A.F.F. (ADA Universal Symbol, including Braille door door sign. Color to be 626 with black lettering)	

**SET #5**

3	Hinges	TA2714 4 1/2 x 4 1/2 x 626	McKinney
1	Storeroom Lock	PB5405LNA4	Yale
1	Cylinder	Compatible with Best Core 7 pin format	
1	Closer	4040XP	LCN
3	Silencers		Glynn Johnson

**SET #6**

3	Hinges (add Hinge on Door #8)	TA2714 4 ½ x 4 ½ x 626	McKinney
1	Passage	PB5401LN	Yale
1	Cylinder	Compatible with Best Core 7 pin format	
1	Closer	4040XP	LCN
1	Wall Stop	409	Rockwood

Coordinate with Owner's access control vendor

**SET #7**

1	Cylinder	Compatible with Best Core 7 pin format	
2	Floor Stops	FS441 x 626	IVES
2	Exit Device	SecuriTron TSB	Reuse Existing
1	Closer	4040XP	LCN
1	Automatic Operator	409	Reuse Existing

Balance of Hardware by Aluminum Door Manufacturer  
Coordinate with Owner's access control vendor

**SET #8**

6	Hinges	TA2714 4 ½ x 4 ½ x 626	McKinney
2	Panic Devices	9847-L-F-626	Von Duprin
1	Cylinder	Compatible with Best Core 7 pin format	
2	Closers	4040XP	LCN
1	Smoke Seals	S88	Pemko
1	Split Astragal	310	Pemko

**SET #9**

3	Hinges	TA2714 4 ½ x 4 ½ x 626	McKinney
1	Office Lockset	PB5407LN AU	Yale
1	Cylinder	Compatible with Best Core 7 pin format	
1	Closer	4040XP	LCN
1	Wall Stop	409	Rockwood
3	Silencers		Glynn Johnson

END OF SECTION 08700

## SECTION 08800 - GLASS AND GLAZING

### PART 1 - GENERAL

#### DESCRIPTION OF WORK

Definitions: "Glass" includes prime glass, processed glass, and fabricated glass products. "Glazing" includes glass installation and materials used to install glass. Types of work in this section include glass and glazing for:

Window units, not indicated as "preglazed."

Window wall/store front construction

Entrance and other doors, not indicated as "preglazed."

Interior partitions.

"Glass products" is hereby defined to include glazing plastics.

Packaged mirror units are specified as "specialties" in another section.

#### QUALITY ASSURANCE

Prime Glass Manufacturer: One of the following for each type/color/pattern of glass:

Vitro Architectural Glass

Prime Glass Standard: FS DD-G-451.

Heat-Treated Glass Standard: FS DD-G-1403.

Safety Glass Standard: CPSC 16 CFR 1201.

#### SUBMITTALS

Samples: 2 samples, 12" square, of each glass product, except for clear single-pane units.

#### JOB CONDITIONS:

Pre-Installation: Meet with Glazier and other trades affected by glass installation, prior to beginning of installation. Do not perform work under adverse weather or job conditions. Install liquid sealants when temperatures are within lower or middle third of temperature range recommended by manufacturer.

#### SPECIFIED PRODUCT WARRANTY

Warranty on Hermetic Seals: Provide insulating glass manufacturer's written warranty, agreeing to, within specified warranty period, furnish FOB project site, replacement units for insulating glass units which have defective hermetic seals (excluding that due to glass breakage); defined to include intrusion of moisture or dirt, internal condensation at temperatures above -20 degrees F (-31 degrees C), deterioration of internal glass coatings, and other visual evidence of seal failure or performance failure; provided manufacturer's

instructions for handling, installation, protection and maintenance have been adhered to during warranty period.

Warranty period is 10 years after seal date permanently imprinted on unit, but not less than 9 years after date of Substantial Completion.

### PART 2 - PRODUCTS

#### GLASS PRODUCTS

Float/Plate Glass: Type 1, Quality q3, clear unless otherwise indicated on drawings.

Type: Insulating Glass

SolarBan 60 by Vitro Architectural Glass

Outdoor Lite: Solar Blue 6mm. 1/2" Air Space by Vitro Architectural Glass

Indoor Lite: Clear tempered 6mm. with SolarBan 60 on third surface by Vitro Architectural Glass

Location: Third Surface (3)

#### FABRICATED GLASS UNITS

Safety Glass: Tempered

Insulating Glass: Provide 2 sheets of glass as follows, and 1/2" dry air or gas-filled space with -20 degrees F (-29 degrees C) dew point, with Class A sealant-type edge construction to maintain a hermetic seal; fabricated to provide the following overall performance characteristics:

Glass: Clear float glass, Quality q3, 1/4" thick.

Edge Construction: Twin primary seals of polyisobutylene; tubular aluminum or galvanized steel spacer-bar frame with welded or soldered sealed corners, and filled with desiccant; and secondary seal outside of bar, bonded to both sheets of glass and bar of polysulfide, silicone or hot-melt butyl elastomeric sealant (fabricator's option).

Warranty: Provide manufacturer's standard 10-year product warranty on maintained hermetic seal.

#### GLAZING SEALANTS AND COMPONENTS

General: Provide color of exposed sealant/compound indicated or if not otherwise indicated, as selected by Architect from manufacturer's standard colors, or black if no color is so selected. Comply with manufacturer's recommendations for selection of hardness, depending upon the location of each application, conditions at time of installation, and performance requirements as indicated. Select materials, and variations or modifications, carefully for compatibility with surfaces contacted in the installation.

One-Part Silicone Rubber Glazing Sealant: Elastomeric silicone sealant complying with FS TT-S-001543, Class A, non-sag. Provide acid type recommended by manufacturer where

only nonporous bond surfaces are contacted; provide nonacid type recommended by manufacturer where one or more porous bond surfaces are contacted.

Oleo-Resinous Glazing Compound: Oil-based blazing compound; non-staining and non-bleeding; provide proper type as required for either channel or face glazing; comply with FS TT-G-410 for face glazing compound.

#### MISCELLANEOUS GLAZING MATERIALS

Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

Setting Blocks: Neoprene or EPDM, 70-90 durometer hardness, with proven compatibility with sealants used.

Spacers: Neoprene or EPDM, 40-50 durometer hardness with proven compatibility with sealants used.

Compressible Filler (Rod): Closed-cell or waterproof-jacketed rod stock of synthetic rubber or plastic foam, proven to be compatible with sealants used, flexible and resilient, with 5-10 psi compression strength for 25% deflection.

### PART 3 - EXECUTION

#### STANDARDS AND PERFORMANCE

Watertight and airtight installation of each glass product is required, except as otherwise shown. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors), without failure including loss of breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the work.

Protect glass from edge damage during handling and installation, and subsequent operation of glazed components of the work. During installation, discard units with significant edge damage or other imperfections.

Glazing channel dimensions as shown are intended to provide for necessary bit on glass, minimum edge clearance, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by job conditions at time of installation.

Comply with combined recommendations and technical reports by manufacturers of glass and glazing products as used in each glazing channel, and with recommendations of Flat Glass Marketing Association "Glazing Manual," except where more stringent requirements are indicated.

Install insulating glass units to comply with recommendations by Sealed Insulating Glass Manufacturers Associations, except as otherwise specifically indicated or recommended by glass and sealant manufacturers.

#### PREPARATION FOR GLAZING

Clean glazing channel and other framing members to receive glass, immediately before glazing. Remove coatings which are not firmly bonded to substrate. Remove lacquer from metal surfaces where elastomeric sealants are used.

Apply primer or sealant to joint surfaces where recommended by sealant manufacturer.

#### GLAZING

Install setting blocks of proper size in sill rabbet, located 1/4th of glass width from each corner. Set blocks in thin course of heel-bead compound, if any.

Provide spacers inside and out, of proper size and spacing, for glass sizes larger than 50 united inches, except where gaskets or preshimmed tapes are used for glazing. Provide 1/8" minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compressed thickness of tape.

Set units of glass in each series with uniformity of pattern, draw, bow and similar characteristics.

VOIDS and Filler Rods: Prevent exudation of sealant or compound by forming voids or installing filler rods in channel at heel of jambs and head (do not leave voids in sill channels), except as otherwise indicated and depending on light size, thickness and type of glass, and complying with manufacturer's recommendations.

Force sealants into channel to eliminate voids and to ensure complete "wetting" or bond of sealant to glass and channel surfaces.

Tool exposed surfaces of glazing liquids and compounds to provide a substantial "wash" away from glass. Install pressurized tapes and gaskets to protrude slightly out of channel, so as to eliminate dirt and moisture pockets.

Clean and trim excess glazing materials from glass and stops or frames promptly after installation, and eliminate stains and discolorations.

Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage to ensure that gasket will not "walk" out when installation is subjected to movement. Anchor gasket to stop with matching ribs, or by proven adhesives, including embedment of gasket tail in cured heel bead.

#### CURE, PROTECTION AND CLEANING

Protect exterior glass from breakage immediately upon installation, by use of crossed streamers attached to framing and held away from glass. Do not apply markers to surfaces of glass. Remove nonpermanent labels and clean surfaces. Cure sealants for high early strength and durability

Remove and replace glass which is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents and vandalism.

Wash and polish glass on both faces not more than 4 days prior to date scheduled for inspections intended to establish date of Substantial Completion in each area of project. Comply with glass product manufacturer's recommendations for final cleaning.

**END OF SECTION 08800**



## SECTION 09250 - GYPSUM DRYWALL AND METAL STUDS

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

Types of work include:

Gypsum drywall including screw-type support system.

Gypsum drywall directly applied to solid (continuous) substrates.

Gypsum backing boards for application of other finishes.

Drywall finishing (joint tape-and-compound treatment).

Wood framing and furring are specified in Division 6.

#### QUALITY ASSURANCE:

Gypsum Board Standard: GA-216 by Gypsum Association.

Metal Support Standard: ASTM C 754.

Fire-Resistance Rating: Where gypsum drywall system with fire resistance ratings are indicated or are required to comply with governing regulations, provide materials and installations identical with applicable assemblies which have been tested and listed by recognized authorities, including UL and AIA.

Allowable Tolerances: 1/8" offsets between planes of board faces, and 1/4" in 8'-0" for plumb, level, warp, and bow.

#### PRODUCT HANDLING:

Deliver, identify, store and protect gypsum drywall materials to comply with referenced standards.

### PART 2 - PRODUCTS

Ceiling Support Materials and Systems:

General: Size ceiling support components to comply with ASTM C 754 unless indicated otherwise.

Main Runners: Steel channels with rust inhibitive paint finish, hot or cold-rolled.

Hanger Wire: ASTM A 641, soft, Class I galvanized.

Hanger Rods and Flats: Mild steel with zinc or equally rust inhibitive coating for rods and zinc or rust-inhibitive paint finish for flats.

Hanger Anchorage Devices: Screws, clips, bolts, cast-in-place concrete inserts or other devices applicable to the indicated method of structural anchorage for ceiling hangers and whose suitability for use intended has been proven through standard construction practices or by certified test data. Size devices for 3 x calculated load supported except size direct pull-out concrete inserts for 5 x calculated loads.

Wall/Partition Support Materials:

Studs: ASTM C 645; 20 gage at interior walls unless otherwise indicated.

18 gage at all exterior walls, fascias and soffits unless otherwise indicated, see Section 05400.

Depth of Section: 3-5/8", except as otherwise indicated.

Runners: Match studs; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work.

Stud Systems Accessories: Provide stud manufacturer's standard clips, shoes, ties, reinforcements, fasteners and other accessories as needed for a complete stud system.

Furring Members: ASTM C 645; 25 gage, hat-shaped.

Fasteners for Furring Members: Type and size recommended by furring manufacturer for the substrate and application indicated.

#### GYPSUM BOARD PRODUCTS:

Exposed Gypsum Board: (Also known as gypsum wallboard.) Regular type with tapered long edges.

Thicknesses: As indicated and, where not otherwise indicated, comply with thickness requirements of GA-216 for each application and support spacing. Comply with requirements for indicated fire-resistance ratings indicated.

#### INTERIOR GYPSUM BOARD

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

American Gypsum  
CertainTeed Corporation  
Georgia-Pacific Gypsum, LLC  
National Gypsum Company  
USG Corporation

Gypsum Wallboard: ASTM C 1396/C 1396M.

Thickness: 5/8" except where otherwise indicated. See drawings for thickness.

Long Edges: Tapered.



Gypsum Board, Type X: ASTM C 1396/C 1396M.

Thickness: 5/8"

Long Edges: Tapered.

Moisture and Mold-Resistant Gypsum Board: ASTM C 1396/C 1658M. With moisture-and mold-resistant core and paper surfaces.

Core: 5/8" except where otherwise indicated. See drawings for thickness.

Long Edges: Tapered.

Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

Glass-Mat, Water-Resistant Backing Board, specifically designed for tile backing panels, ASTM C 1178/C 1178M, with manufacturer's standard edges.

Products: Subject to compliance with requirements, provide one of the following:  
CertainTeed Corporation; GlasRoc Tile Backer  
Georgia-Pacific Gypsum LLC; DensShield Tile Backer.

Core: 5/8" except where otherwise indicated. See drawings for thickness.

Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

#### **TRIM ACCESSORIES:**

General: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim beads, U-type edge trim beads, special L-kerf-type trim-beads, and one-piece control joint beads.

Semi-Finishing Type: Manufacturer's standard trim units which are not to be finished with joint compound (non-beaded).

#### **JOINT TREATMENT MATERIALS:**

General: ASTM C 475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.

Joint Tape: Perforated type.

Joint Compound: On interior work provided chemical-hardening-type for bedding and filling, ready-mixed vinyl-type or vinyl-type powder type for topping.

#### **MISCELLANEOUS MATERIALS:**

General: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the gypsum board.

Laminating Adhesive: Special adhesive or joint compound specifically recommended for laminating gypsum boards.

Fastening Adhesive (for Wood): ASTM C 557.

Gypsum Board Fasteners: Comply with GA-216.

Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirements specified in Division 7 - Section "Joint Sealers."

Sound Attenuation Blankets: Unfaced mineral fiber blanket insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:

Mineral Fiber Type: Fibers manufactured from glass or slag.

### **PART 3 - EXECUTION**

#### **INSTALLATION OF METAL SUPPORT SYSTEMS:**

Do not bridge building expansion joints with support system, frame both sides of joints with furring and other support as indicated.

Nail or screw furring members to wood framing as indicated.

Ceiling Support Suspension Systems:

Secure hangers to structural support by connecting directly to structure when possible, otherwise connect to inserts, clips or other anchorage devices or fasteners as indicated.

Space furring members 16" o.c., except as otherwise indicated.

Install auxiliary framing at termination of drywall work, and at openings for light fixtures and similar work, as required for support of both the drywall construction and other work indicated for support thereon.

Wall/Partition Support Systems:

Install supplementary framing, blocking and bracing to support fixtures, equipment, services, heavy trim, furnishings and similar work which cannot be adequately supported on gypsum board alone.

Extend partition stud system through acoustical ceilings and elsewhere as indicated to the structural support of substrate above the ceiling.

Space studs 16" o.c., except as otherwise indicated.

#### **GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS:**

Install wall/partition boards vertically to avoid end-butt joints wherever possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs.

Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.

Locate either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that both tapered edge joints abut, and mill-cut or field-cut end joints abut. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

Attach gypsum board to framing and blocking as required for additional support at openings and cutouts.

Form control joints and expansion joints with space between edges of boards, prepare to receive trim accessories.

Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4" to 1/2" space and trim edge with J-type semi-finishing edge trim. Seal joints with acoustical sealant. Do not fasten drywall directly to stud system runner tracks.

Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

Gypsum Board Finishing: Per "recommended levels of gypsum board finish" GA-214-70, achieve "Level 5" on all interior exposed to view surfaces.

#### **METHODS OF GYPSUM DRYWALL APPLICATION:**

Single-Layer Application: Install exposed gypsum board.

On partitions/walls apply gypsum board vertically (parallel), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

Wall Tile Base: Where drywall is base for thin-set ceramic tile and similar rigid applied wall finishes, install gypsum backing board.

At showers, tubs and similar "wet" areas, install Glass-Mat Water-Resistant backing board. Apply with un-cut long edge at bottom of work, and space 1/4" above fixture lips. Seal ends, cut-edges and penetrations of each piece with water-resistant sealant before installation.

Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:

Fasten with screws.

Double-Layer Fastening Methods: Apply base layer of gypsum board and face layer to base layer as follows:

Fasten both layers and face layers separately to supports with screws.

Direct-Bonding to Substrate: Where gypsum board is indicated to be directly adhered to a substrate (other than studs, joists, furring members of base layer of gypsum board), comply with gypsum board manufacturer's recommendations, and temporarily brace or fasten gypsum board until fastening adhesive has set.

#### **INSTALLATION OF DRYWALL ACCESSORIES:**

General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.

Install metal corner beads at external corners of drywall work.

Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

Install metal control joint (beaded-type) where indicated.

#### **INSTALLATION OF DRYWALL FINISHING:**

General: Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fasteners heads, surface defects and elsewhere as required to prepare work for decoration. Prefill open joints and rounded or beveled edges, using type of compound recommended by manufacturer.

Apply joint tape at joints between gypsum boards, except where a trim accessory is indicated.

Apply compound in 3 coats (not including prefill of openings in base), and sand between last 2 coats and after last coat.

Glass-Mat Water-Resistant Gypsum Backing Board base for Ceramic Tile: Tape joints only where thinset ceramic finish over water-resistant gypsum board is indicated. (Equal to Dens Shield)

Partial Finishing: Omit third coat (if specified) and sanding on concealed drywall work which is indicated for drywall finishing or which requires finishing to achieve fire resistance rating, sound rating or to act as air or smoke barrier.

Refer to sections on painting, coatings and wall-coverings in Division 9 for decorative finishes to be applied to drywall work.

#### **PROTECTION OF WORK:**

Installer shall advise Contractor of required procedures for protecting gypsum drywall work from damage and deterioration during remainder of construction period.

**END OF SECTION 09250**

## SECTION 09300 - TILE

### PART 1 - GENERAL

#### DESCRIPTION OF WORK

Definitions: Tile includes ceramic surfacing units made from clay or other ceramic materials. The types of work of this section include:

Porcelain Tile

#### QUALITY ASSURANCE:

Manufacturers offering products to comply with requirements include the following:

Manufacturer: Provide products by one of the following or as shown on drawings for each type of tile:

Porcelain Tile:

American Olean Tile Co.  
Dallas Ceramic Tile Co.  
Florida Tile Division of Sikes Corp.  
United States Ceramic Tile Co.

Tile Manufacturing Standard: TCA 137.1. Furnish tile complying with Standard Grade requirements unless indicated otherwise.

Proprietary Materials: Handle, store, mix and apply proprietary setting and grouting materials in compliance with manufacturer's instructions. Provide materials obtained from one source for each type and color of tile, grout, and setting materials.

Exterior Tile: Frost-proof tile: The tile manufacturer shall furnish the Architect with a letter stating that the tile specified and furnished is a frostproof type, that it has been used as an exterior material under similar exposure to the weather without crazing or spalling.

#### SUBMITTALS

Samples:

For initial selection of colors submit manufacturer's color charts consisting of actual tiles or sections of tiles showing full range of colors available, for each type of tile specified. Include samples of grout and accessories requiring color selection.

#### PRODUCT HANDLING:

Deliver packaged materials and store in original containers with seals unbroken and labels intact until time of use, in accordance with manufacturer's instructions.

#### JOB CONDITIONS:

Maintain environmental conditions and protect work during and after installation in accordance with referenced standards and manufacturer's printed recommendations.

### PART 2 - PRODUCTS

#### TILE PRODUCTS:

Porcelain Tile: Size, color and pattern as shown; cushion edge units.

Finish: As shown.

Trim and Special Shapes: Rounded external corners, and trim shapes at head, jamb and sills of openings, of same material and finish as field tile, and as follows:

Base: Sanitary cove units.

Wainscot Cap: Surfaced-bullnose of bullnose cap, except provide regular flat tile where tile surface is flush with plaster wall above.

External Corners: Bullnose shapes, with a radius of not less than 3/4", unless otherwise shown.

Internal Corners: Field-buttet square, except use square corner, combination angle and stretcher type cap.

#### MORTAR AND GROUT:

Bathrooms or Exterior Use:

Epoxy Mortar: ANSI A118.3; TCA Formula AAR-II, product of TCA licensee.

Epoxy Grout: ANSI A118.3; TCA Formula AAR-II, product of TCA licensee.

Metal Edge Strips: Zinc alloy or stainless steel, 1/8" wide at top edge with integral provision for anchorage to mortar bed or substrate, unless otherwise indicated.

### PART 3 - EXECUTION

#### TILE INSTALLATION STANDARDS:

ANSI Standards: Comply with applicable requirements of the following, except as otherwise indicated.

ANSI A108.1: Tile installed with portland cement mortar.

ANSI A108.4: Tile installed with organic adhesive.

ANSI A108.5: Tile installed with dry-set portland cement mortar or latex-portland cement mortar.

ANSI A108.6: Tile installed with epoxy mortar and grout.

Comply with manufacturer's instructions for mixing and installation of proprietary materials.

#### **INSTALLATION:**

Extend tile work into recesses and under or behind equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments.

Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures and other penetrations so that plates, collars, or covers overlap tile.

#### Thin-set installations:

Dry-set portland cement mortar or latex-portland cement mortar with 50% acrylic solution in water.

Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls and both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise shown.

#### Grout:

Use commercial cement grout for grouting tile wall joints, unless otherwise shown.

Use a sand-portland cement grout of one part portland cement to 2 parts fine graded sand, and up to 1/5 part lime, for grouting quarry tile floors with joints 1/8" to 1/2" wide, unless otherwise shown.

Use latex-portland cement grout.

Use not less than 50% acrylic with water in all grout mixes.

Metal Edge Strips: Provide where shown, and where exposed edge of ceramic tile flooring is to meet carpet, wood or other resilient floor covering.

#### **CLEANING AND PROTECTION:**

Cleaning: Upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's printed instructions, but not sooner than 14 days after installation. Protect

metal surfaces, cast iron and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.

Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective tile work.

Protection: When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with Kraft paper or other heavy covering during construction period to prevent damage and wear.

Prohibit foot and wheel traffic from using tiled floors for at least 3 days after grouting is completed.

Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

**END OF SECTION 09300**

## SECTION 09511 - ACOUSTICAL CEILINGS (SUSPENDED)

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

Extent of each type of acoustical ceiling is shown and scheduled on drawings.

Types of acoustical ceilings specified in this section include the following:

Acoustical panel ceilings, exposed suspension.

Acoustical tile ceilings, adhered to substrate.

#### QUALITY ASSURANCE:

UL-Rated Assemblies: Where acoustical ceiling are components of floor, roof or beam assemblies indicated for fire-resistance rating, including those required for compliance with governing regulations, provide acoustical materials and application or suspension bearing UL Classification Marking for applicable UL design number listed in UL "Fire Resistance Index". Where required by applicable UL design, provide protection materials for fixtures and ducts.

#### SUBMITTALS:

Product Data: Manufacturer's product specifications and installation instructions for each acoustical ceiling material required, and for each suspension system, including certified laboratory test reports and other data as required to show compliance with these specifications.

Samples: Set of 12" square samples for each acoustical unit required, showing full range of exposed color and texture to be expected in completed work.

Maintenance Stock: At time of completing installation, deliver stock of maintenance materials to Owner. Furnish full size units matching units installed, packaged with protective covering for storage, and identified with appropriate labels.

Furnish amount equal to 2.0% of acoustical units and exposed suspension installed.

#### JOB CONDITIONS:

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

### PART 2 - PRODUCTS

CityUtilities\_LobbyRemodel.0323

#### CEILING UNITS:

##### Acoustical Panels:

General: Provide manufacturer's standard lay-in panels of type recommended by manufacturer for application indicated. Provide sizes shown by reflected ceiling plans or, if not otherwise indicated, 24" x 24" grid-size panels, with white washable finish.

Acoustical Panels - Type I: Panels to be lay-in type 24" x 24". Type I to come with edges of panel cut back for recessing supports. Material to be equal to Rockfon Artic.

Products offered by manufacturers to comply with requirements include the following: (Any additional manufacturers wanting to be approved as equals must be approved before bidding. No equals will be approved after bidding.)

CertainTeed Corporation  
Chicago Metallic Corporation  
U. S. Gypsum Co.

##### CEILING SUSPENSION MATERIALS:

General: Comply with ASTM C 635, as applicable to type of suspension system required for type of ceiling units indicated.

Coordinate with other work supported by or penetrating through ceilings, including light fixtures, HVAC equipment, and partition system (if any).

Structural Class: Intermediate-duty system.

High-Humidity Finishes: Where suspension system supports exterior ceiling or soffit, and also where interior space is indicated as "High-Humidity" area of project, comply with ASTM C 635 requirements for "Severe Environment Performance" for "High-Humidity Test."

Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table I, Direct Hung.

Hanger Wires: Galvanized carbon steel, ASTM A 641, soft temper, prestretched, yield-stress load of at least 3 times design load, but not less than 12 gage (0.106").

Type of System: Either direct-hung or indirect-hung suspension system, at Contractor's option.

System Manufacturer: Same as acoustical unit manufacturer or one of the following:

Chicago Metallic Corp.  
Donn Corp.  
W. J. Haertel Div.; Leslie-Locke  
Roper Eastern Bldg. Systems



Edge Moldings: Manufacturer's standard channel molding for edges and penetrations of ceiling, with single flange of molding exposed, white baked enamel finish unless otherwise indicated.

#### **MISCELLANEOUS MATERIALS:**

Tile Adhesive: Comply with ASTM D 1779 or FS MMM-1-00150, type recommended by tile manufacturer, bearing UL label for Class 0-25 flame spread.

Edge Trim Molding: Metal or extruded PVC plastic, of types and profiles indicated, white finish unless otherwise indicated.

Hold-Down Clips: Where required for wind uplift resistance or fire-resistance rating, provide standard spring steel clips, except provide accessible type at locations indicated on drawings.

### **PART 3 - EXECUTION**

#### **INSPECTION:**

Installer must examine conditions under which acoustical ceiling work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

#### **PREPARATION:**

Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

Testing Substrates: Before installing adhesively applied tile on wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.

Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

#### **INSTALLATION:**

General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements as indicated, and industry standards applicable to work.

Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.

Install tile with pattern running in one direction.

Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers near each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.

Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

Install acoustical tile by cementing to substrate, using amount of adhesive and procedure recommended by tile manufacturer. Install splines in joints between tiles and level to 1/8" in 12'-0" tolerance. Maintain tight butt joints, aligned both directions, and coordinated with ceiling fixtures. Scribe and cut tile to fit accurately at ceiling edges and penetrations.

Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members.

Scribe and cut panels to fit accurately at borders and at penetrations.

Install hold-down clips in areas indicated, and in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

#### **ADJUST AND CLEAN:**

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 which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

#### **END OF SECTION 09511**

## SECTION 09680 - CARPETING

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

The specific requirements for each type of carpeting are indicated by "Carpet Data Sheets", included as the last pages of this section. Carpeting is defined to include (but is not necessarily limited to) carpet, cushion, seaming, edge treatment and anchorages (if any).

The extent of each type of carpet is shown on the drawings and in schedules, sometimes by the abbreviation C.

The following basic kinds of carpeting are required:

Tufted level loop type carpet.

#### QUALITY ASSURANCE:

Installer: Engage a carpet installation firm, which has at least ten (10) years successful experience in carpet installation similar in size and type to the carpeting requirements in this project.

Flame Spread Rating: Provide only carpet which has been tested and passes the Tunnel Test ASTM E84.

#### SUBMITTALS:

Manufacturer's Data, Carpeting:

For information only, submit manufacturer's data on carpet and carpeting materials, showing that materials comply with requirements of data sheets and specification; also including installation instructions and maintenance recommendations. Indicate by transmittal that copy of instructions has been distributed to the Installer.

Include certified laboratory test report for flammability. Tunnel Test E84.

Shop Drawings, Carpeting:

Submit layout drawings showing seam locations and pattern direction. Indicate location of consecutive dye lots and roll numbers for adjacent areas or side match.

Overrun Stock, Carpeting:

Deliver overrun stock and scraps of unused carpet to Owner's "attic stock", as directed by the Architect, in accordance with specified requirements.

#### JOB CONDITIONS:

Substrate: Installer must examine the substrate, and the conditions under which the carpeting is to be installed, and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. The Installer shall examine and note location

of any cracks over 1/16" and any protrusions to be removed. Check for excess moisture, alkaline moisture or porosity. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

### PART 2 - PRODUCTS

#### CARPET CONSTRUCTION:

General: Fabricate carpet by the construction method indicated on data sheet by manufacturer's standard process which is recognized as such method in the carpet industry. Refer to Finish Schedule for carpet type.

#### CARPET ACCESSORY MATERIALS:

Adhesive for Carpet: Provide adhesive as recommended by the carpet manufacturer. Provide adhesive which complies with flame spread rating required for the carpet installation.

#### EXTRA OR SURPLUS MATERIALS:

Carpet Overrun: Contractor shall provide 3% excess for attic stock over the amount necessary to insure complete installation without excessive seams and all areas shall have adjacent pattern match. Deliver all unused carpet and large scraps to the Owner for his "attic stock". Dispose of scraps less than 2 square feet in area or less than 8" in width.

### PART 3 - EXECUTION

#### PREPARATION:

Measure each space to receive carpeting prior to cutting, as a basis of supplying, cutting and seaming the carpet. Do not scale the Architect's drawings or calculate sizes from dimensions shown.

Vacuum substrate immediately prior to carpet installation, and remove all deleterious substances which would interfere with the installation or be harmful to the work. Damp mop if necessary. Do not use oil based cleaning compounds. Check for excess moisture. Install with consecutive dye lot and roll numbers for side match at adjacent areas.

#### INSTALLATION:

General:

Comply with manufacturer's instructions and recommendations (enclosed at end of section). Place seams in the directions indicated, and as accepted on shop drawings, if any. Maintain direction of pattern and texture, including lay of pile. Do not seam weft to warp, except as directed.

Extend carpet under open-bottomed and raised-bottom obstructions, and under removable flanges of obstructions. Extend carpet into closets and alcoves of rooms indicated to be carpeted, unless another floor finish is indicated for such spaces. Extend carpet under all movable furniture and equipment, unless other wise indicated.

Install carpet edge guard at every location where edge of carpet is exposed to traffic, except where another device, such as an expansion joint cover system or threshold, is indicated with an integral carpet binder bar.

For high-moisture exposure installations, use only materials and method proven to be satisfactory for the conditions of exposure indicated.

Glued-Down Installation:

Install a test sample to demonstrate proper adhesion and removal capability of the bonding system. Demonstrate installation and removal procedure to Owner's personnel, with Architect present.

Cut and fit sections of carpet of each room of space, prior to application of adhesive.

Apply adhesive, and separate release agent, if any, in accordance with manufacturer's instructions, complying with procedure demonstrated to be satisfactory by test sample. Butt carpet seams and edges tightly together, eliminate air pockets, and roll to ensure uniform bond everywhere.

Remove adhesive from face promptly upon exposure.

Miscellaneous Installation:

On stairs and similar substrates, install carpet by a secure method recognized to be durable and safe for traffic on stairs. Conceal edges and avoid seams at points of high wear.

**CLEANING AND PROTECTION:**

Remove debris from installation, carefully sorting pieces to be saved from scraps to be disposed of.

Vacuum carpet with a commercial machine, with rotating agitator or beater in the nozzle. Remove soiled spots.

Advise the Contractor of areas which should be protected during the remainder of the construction period, so that carpet will be in undamaged and unsoiled condition at the time of acceptance. Recommend the type of non-staining cover material that should be used for protective cover.

Provide carpet bar at all exposed edges of carpet and all edges of carpet that abut a raised surface or dissimilar material. Finish shall be black vinyl insert type as manufactured by Roberts Consolidated Industries of Mercer Plastics Company. Provide sample to Owner immediately upon award of contract.

Provide seam cement or tape as per manufacturer's recommendations.

The standards heretofore specified are the minimum standards to be furnished on this project.

All floors throughout the project will be glue-down carpet described in the following:

**DATA SHEET**

Refer to plans for carpet type.

Acceptable manufacturers capable of performing this specification for this project shall be:

Shaw Contract

Provide carpet bar at all exposed edges of carpet and all edges of carpet that abut a raised surface or dissimilar materials. Finish shall be black or brown vinyl insert type as manufactured by Roberts Consolidated Industries of Mercer Plastics Company or equal. Provide sample to Owner immediately upon award of contract.

Provide seam cement or tape and adhesive as per manufacturer's recommendations.

The standards heretofore specified are the minimum standard to be furnished on this project.

No gaps will be allowed between the carpet and the wall. Straight base will be used (see plans).

**END OF SECTION 09680**

## SECTION 09900 - PAINTING

### PART 1 - GENERAL

Extent of painting work is shown on drawings and schedules, and as herein specified.

The work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

The work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.

"Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint the same as adjacent similar materials or areas. If color or finish is not designated, Architect will select these from standard colors available for materials systems specified.

Following categories of work are not included as part of field-applied finish work, or are included in other sections of these specifications.

Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, miscellaneous metal, hollow metal work, and similar items. Also, for fabricated components such as architectural woodwork, wood casework, and shop-fabricated or factory-built mechanical and electrical equipment or accessories.

Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as (but not limited to) metal toilet enclosures, prefinished partition systems, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures, switchgear and distribution cabinets, elevator entrance frames, doors and equipment.

Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.

Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish paint, unless otherwise indicated.

Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linages, sinkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated.

Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

### SUBMITTALS

Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

Samples: Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

On 12" x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.

On actual wood surfaces, provide two 4" x 8" samples of natural and stained wood finish. Label and identify each as to location and application.

On concrete masonry, provide two 4" square samples of masonry for each type of finish and color, defining filler, prime and finish coat.

### DEFINITIONS

Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

### DELIVERY AND STORAGE:

Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

Name or title of material.  
Fed. Spec. number, if applicable.  
Manufacturer's stock number and date of manufacturer.  
Manufacturer's name.  
Contents by volume, for major pigment and vehicle constituents.  
Thinning instructions.  
Application Instructions.  
Color name and number.

## MAINTENANCE MATERIAL SUBMITTALS

Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Paint: 5 percent, but not less than 1 gal. of each material and color applied.

Stains and Transparent Finishes: 5 percent, but not less than 1 gal. of each material and color applied.

## JOB CONDITIONS:

Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C), and 90 degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 95 degrees F (35 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

Do not apply paint in snow, rain, fog or mist; or when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

## PART 2 - PRODUCTS

### COLORS AND FINISHES:

Paint colors, surface treatments, and finishes, are indicated in "schedules" of the contract documents.

Prior to beginning work, Architect will furnish color chips for surfaces to be painted.

Use representative colors when preparing samples for review.

Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings systems for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

## MATERIAL QUALITY:

Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

Manufacturer's products which comply with coating qualitative requirements of applicable Federal Specifications, yet differ in quantitative requirements, may be considered for use when acceptable to Architect. Furnish material data and manufacturer's certificate of performance to Architect for any proposed substitutions.

Provide undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

## PAINT, GENERAL

VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and Green Seal Standard GS-11.

Flat Paints and Coatings: 50 g/L.  
Nonflat Paints and Coatings: 150 g/L.  
Dry-Fog Coatings: 400 g/L.  
Primers, Sealers, and Undercoaters: 200 g/L.  
Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.  
Zinc-Rich Industrial Maintenance Primers: 340 g/L.  
Pretreatment Wash Primers: 420 g/L.  
Floor Coatings: 100 g/L.  
Shellacs, Clear: 730 g/L.  
Shellacs, Pigmented: 550 g/L.

Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

Colors: As indicated in a color schedule.

## INTERIOR PAINT SYSTEMS:

Provide following paint systems for various substrates, as indicated:

### Gypsum Drywall System:

IPS-11: 1st Coat - Latex primer  
2nd Coat - Water borne semi-gloss alkyd enamel  
3rd Coat - Water borne semi-gloss alkyd enamel  
Not less than 2.5 mils dry film thickness.  
Primer:



Glidden: PVA Wall Primer Sealer GP1030N  
Benjamin Moore: Super Spec Latex Primer 253  
SW: ProMar 200 Zero VOC Latex Primer B28W2600  
PPG: 6-2 Speedhide Int Quick Drying Latex Sealer  
Finish:  
Glidden: : 6-1510 Series Speedhide Int/Ext SG WB Alkyd Enamel  
Benjamin Moore: N/A  
SW: ProMar 200 WB Acrylic-Alkyd SG Enamel B34-8251 Series  
PPG: 6-1510 Series Speedhide Int/Ext SG WB Alkyd Enamel

IPS-12:

1st Coat – 100% acrylic latex primer  
2nd Coat – Water borne polyamide epoxy  
3rd Coat – Water borne polyamide epoxy  
Not less than 4.0 mils dry film thickness.  
Primer:  
Glidden: Gripper GP 3210  
Benjamin Moore: 023 Fresh Start  
SW: 200 Zero VOC Latex Primer B28W2600  
PPG: 17-921 Seal Grip 100% Acrylic Universal Primer  
Finish:  
Glidden: 98-1 Series Aquapon WB Polyamide Epoxy  
Benjamin Moore: Super Spec HP High Gloss WB Polyamide P42  
SW: Macropoxy 646 S/G Epoxy  
PPG: 98-1 Series Aquapon WB Polyamide Epoxy

Ferrous Metal:

IPS-20:

1st Coat - Acrylic primer  
2nd Coat – Semi-gloss enamel  
3rd Coat - Semi-gloss enamel  
First coat not required on items that are shop primed.  
Not less than 2.5 mils dry film thickness.  
Primer:  
Glidden: Devflex Direct To Metal Primer & Finish 4020  
Benjamin Moore: Super Spec HP Metal Primer P04  
SW: DTM Acrylic Primer/Finish B66W1  
PPG: 90-712 Pitt Tech 100% Acrylic DTM Primer Finish  
Finish:  
Glidden: Lifemaster Oil Semi Gloss GP1506  
Benjamin Moore: Super Spec Alkyd 271  
SW: Pro Mar 200 Int Alkyd Semi Gloss B34W251  
PPG: 6-1110XI Speedhide Alkyd Semi Gloss Enamel

**PART 3 - EXECUTION**

**INSPECTION:**

Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

Starting of painting work will be construed as Applicator's acceptance of surface and conditions within any particular areas.

Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

**SURFACE PREPARATION:**

General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

Cementitious Materials: Prepare cementitious surfaces of concrete, concrete block, cement plaster and cementitious board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

Clean concrete floor surfaces scheduled to be painted with a commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid, and allow to dry before painting.

Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling.

When transparent finish is required, use spar varnish for backpriming.

Backprime paneling on interior partitions only where masonry, plaster, or other wet wall construction occurs on backside. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mil scale and other foreign substances by solvent or mechanical cleaning.

Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.

Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

#### **MATERIALS PREPARATION:**

Mix and prepare painting materials in accordance with manufacturer's directions.

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.

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.

#### **APPLICATION:**

General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

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.

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.

Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.

Sand lightly between each succeeding enamel or varnish coat.

Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

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.

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.

Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied areas.

Mechanical items to be painted include, but are not limited to, the following:

- Piping, pipe hangers, and supports.
- Heat exchangers.
- Tanks.
- Ductwork, insulation.
- Motor, mechanical equipment, and supports.
- Accessory items.

Electrical items to be painted include, but are not limited to, the following:

- Conduit and fittings.
- Switchgear.

Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

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.

Pigmented (Opaque) 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.

Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

Provide satin finish for final coats, unless otherwise indicated.

Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

#### **FIELD QUALITY CONTROL:**

The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting:

Engage service of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.

Testing laboratory will perform appropriate tests for any or all of following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability,

absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative materials analysis.

If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove non-complying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.

**CLEAN-UP AND PROTECTION:**

Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

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.

Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operation.

At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

**END OF SECTION 09900**

## SECTION 10210 TOILET COMPARTMENTS AND CUBICLES

### PART 1 GENERAL

#### SECTION INCLUDES

Compartments and Cubicles of the Following Types:

High-density polymer compartments and cubicles.

#### REFERENCES

ADA - Americans with Disabilities (ADA) Standards for Accessible Design.

ANSI A117.1 - American National Standard for Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People.

ANSI A208.1 - Mat Formed Wood Particleboard.

ASTM International (ASTM)

ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

ASTM A666 - Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

ASTM A526 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.

NEMA LD-3 - High Pressure Decorative Laminates.

UFAS - Uniform Federal Accessibility Standards.

#### SUBMITTALS

Product Data: Manufacturer's data sheets on each product to be used, including:

Literature indicating typical panel, pilaster, door, hardware and fastening.

Preparation instructions and recommendations. Storage and handling requirements and recommendations

Installation methods. Maintenance instructions.

Shop Drawings: Dimensioned plans indicating layout of toilet partitions. Dimensioned elevations indicating heights of doors, pilasters, separation partitions, and other components; indicate locations and sizes of openings in compartment separation partitions for toilet and bath accessories to be installed in partitions; indicate floor and ceiling clearances. Details indicating anchoring components (bolt layouts) and methods for project conditions; indicate components required for installation, but not supplied by compartment and cubicle manufacturer.

Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, texture and pattern.

### DELIVERY, STORAGE, AND HANDLING

Store products in manufacturer's unopened packaging until ready for installation.

Lay cartons flat, with adequate support to ensure flatness and to prevent damage to pre-finished surfaces. Do not store where ambient temperature exceeds 120 degrees F (49 degrees C).

### PROJECT CONDITIONS

Do not deliver materials or begin installation until building is enclosed, with complete protection from outside weather, and building temperature maintained at a minimum of 60 degrees F (15.6 degrees C).

### QUALITY ASSURANCE

Products and installation shall comply with the following: ADA Standards, ANSI A117.1, UFAS as applicable to the Project.

Coordinate Work with placement of support framing and anchors in walls and ceilings.

### WARRANTY

Manufacturer's Warranty for Partitions: Provide manufacturer's standard limited warranty and as follows.

High Density Polymer Partitions: 25 years.

### PART 2 PRODUCTS

#### MANUFACTURERS

Acceptable Manufacturer: ASI Global Hadrian Bobrick, and Scranton.

Product: Equal to General partition - Series 40 High Density Polymer Toilet Partition and Screens.

Substitutions: Must be approved prior to bidding.

#### HIGH DENSITY POLYMER (HDP) UNITS

Construction:

High density polymer panels and doors, molded under pressure from high density polymer resin with uniform color throughout.

Absorption: Resistant to delamination, water, steam, corrosion, soaps, detergents, and mildew. Material shall not absorb odors.

Graffiti Resistance: Self-lubricating surface that is graffiti resistant to markings from pen, pencil, marker, and paint.

Edges: Machine radius eliminating sharp edges.

Surface texture: As selected by owner.

Heat Sinks: Provide 1/8 inch (3 mm) aluminum strips integral to bottom edges of panels and doors to protect panel from being ignited by vandals.

Color: As selected by owner from manufacturer's standard colors.

#### **HARDWARE**

Combination Latch Keeper and Door Stop with Rubber Bumper: Extruded aluminum, cast alloy, chrome plated or Cast Stainless

#### **PART 3 EXECUTION**

##### **INSTALLATION**

Examine existing conditions prior to installation. Do not begin installation until installation conditions and substrates have been properly prepared.

Install compartments and cubicles in accordance with manufacturer's instructions and approved submittals. Pilasters intersecting adjacent walls shall extend to finished floor. Attach panels and pilasters to brackets with sheet metal screws.

Door Installation: Hang doors from pilasters. Equip each door with the following:

- Door latch.
- Door strike and keeper.

Erection Tolerances: Maximum variation from true position: 1/4 inch (6 mm). Maximum variation from plumb: 1/8 inch (3 mm).

##### **ADJUSTING AND CLEANING**

Carefully remove and dispose all protective vinyl from partitions.

Adjust hinges and align hardware to uniform clearance at vertical edge of doors. Clean surfaces and wash with mild soap. Do not use abrasives.

**END OF SECTION 10210**



## SECTION 10800 - TOILET ACCESSORIES

### PART 1 - GENERAL

#### DESCRIPTION OF WORK:

Extent of each type of toilet accessory is shown on drawings and schedules.

Types of toilet accessories required include the following:

- Grab Bars
- Combination Coat Hook and Rubber Bumper

Mirror Units are specified elsewhere in Division 10.

#### QUALITY ASSURANCE:

Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry; coordinate delivery with other work to avoid delay.

Accessory Locations: Coordinate accessory locations with other work to avoid interference and to assure proper operation and service of accessory units.

Products: Provide products of same manufacturer for each type of accessory unit and for units exposed in same areas, unless otherwise acceptable to Architect.

Manufacturer: Provide each type of toilet accessory required as manufactured by one of the following:

- A & J Washroom Accessories
- American Specialties, Inc.
- Bobrick Washroom Equipment, Inc.
- Bradley Corporation
- General Accessory Manufacturing Co. (GAMCO)

#### SUBMITTALS:

Product Data: Submit manufacturer's technical data, cut sheet and installation instructions for each toilet accessory.

### PART 2 - PRODUCTS

#### MATERIALS:

Stainless Steel: ASTM A 666, Type 304 with polished No. 4 finish, 22 gage minimum, unless otherwise indicated.

Sheet Steel: ASTM A 1008/ A 1008M, Designation CS (cold rolled, commercial steel). Surface preparation and metal pretreatment as required for applied finish.

Baked Enamel Finish: Factory-applied, gloss white, baked acrylic enamel coating.

Mirror Glass: ASTM C 1503, Mirror Glazing Quality, clear glass mirrors, nominal 6.0 mm thick.

Fasteners: Screws, bolts, and other devices of same material as accessory unit or of galvanized steel where concealed.

#### FABRICATION:

General: Stamped names or labels on exposed faces of toilet accessory units are not permitted, except where otherwise indicated. Wherever locks are required for a particular type of toilet accessory, provide same keying throughout project. Furnish two keys for each lock.

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 piano hinge or minimum of two 1-1/2" pin hinges of same metal as unit cabinet. Provide concealed anchorage wherever possible.

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 which is fully concealed when unit is closed.

#### Grab Bars:

Stainless Steel Type: Provide grab bars with wall thickness not less than 18 gage and conforming to the Americans with Disabilities Act (ADA) requirements and as follows:

Mounting: Concealed, manufacturer's standard flanges and anchorages.

Gripping Surfaces: Smooth, polished finish.

Size: Outside diameter of 1 1/4".

Length: Per plans.

Equal to #125-C by GAMCO.

Combination Coat Hook and Rubber Bumper: Chrome plated cast brass. 3" projection, 1 1/4" x 2" flange. 2 mounting brackets equal to #RH-4 by GAMCO.

### PART 3 - EXECUTION

#### INSPECTION:

Installer must examine substrates, previously installed inserts and anchorages necessary to mounting of toilet accessories, and other conditions under which installation is to occur, and must notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

**INSTALLATION:**

Install toilet accessory units in accordance with manufacturer's instructions, using fasteners which are appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations indicated.

**ADJUST AND CLEAN:**

Adjust toilet accessories for proper operation and verify that mechanisms function smoothly.

Clean and polish all exposed surfaces after removing protective coatings.

Toilet Accessories Schedule:

Grab Bars

Also provide one for each room, manufacturers standard unit, combination coat hook and rubber-tipped bumper, to be installed, on inside face of door.

**END OF SECTION 10800**

## **SECTION 10810 - MIRROR UNITS**

### **PART 1 - GENERAL**

#### **DESCRIPTION OF WORK:**

Extent of mirror units is indicated herein.

Types of mirror units required include the following:

Stainless framed mirrors.

Mirror glass for custom installations is specified in Division 8.

Toilet accessories are specified elsewhere in Division 10.

#### **QUALITY ASSURANCE:**

General: Provide mirror units produced by single manufacturer for entire project.

Manufacturer: Provide mirror units as manufactured by one of the following:

Accessory Specialties, Inc.  
Bobrick  
Bradley Corp.  
Engineered Products Co.  
General Accessory Manufacturing Co.

#### **SUBMITTALS:**

Product Data: Submit manufacturer's technical data, detail drawings, and installation instructions for mirror units.

#### **SPECIFIED PRODUCT WARRANTY:**

Provide manufacturer's written 5-year warranty against silver spoilage of mirrors, agreeing to replace any mirrors which develop visible defects within warranty period.

### **PART 2 - PRODUCTS**

#### **MATERIALS:**

Mirror Glass: 1/4" thick, Type I, Class I, Quality q2, conforming to FS DD-G-451, with silvering, copper coating, and protective organic coating complying with FS DD-M-411.

Stainless Steel Framing: AISI Type 302/304, with polished No. 4 finish.

Galvanized Steel Mounting Devices: ASTM A 386, hot-dip galvanized after fabrication.

#### **FABRICATION:**

General:

Edge Protection: Fabricate frames for glass mirrors to accommodate wood, felt, plastic, or other glass edge protection material.

Backing: Provide mirror backing and support system which will permit rigid, tamperproof glass installation and prevent accumulation of moisture, as follows:

Air space backing provided by resilient pads or grommets attached to hanger assembly.

Hangers: Provide system of mounting mirror units which will permit rigid, tamperproof and theftproof installation, as follows:

Heavy-duty wall brackets of galvanized steel, equipped with concealed locking devices requiring special tool to remove.

#### **Stainless Steel Framed Mirrors:**

Standard Type: Fabricate frame with channel shapes of not less than 20 gage, with square corners carefully mitered to hairline joints and mechanically interlocked.

### **PART 3 - EXECUTION**

#### **INSTALLATION:**

Secure mirrors to walls in tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, in accordance with manufacturer's instructions for type of substrate involved.

#### **ADJUST AND CLEAN:**

Verify that adjustable tilting mirrors are properly installed and are operating smoothly.

Clean exposed surfaces of mirror units in compliance with manufacturer's recommendations.

#### **MIRROR UNIT SCHEDULE:**

Room 104: 48" x 36"

Room103: 60" x 36"

#### **END OF SECTION 10810**