

Submittals: In addition to product data submit each type and color of joint sealer required.

PRODUCTS

Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under service-vice and application conditions. as demonstrated by testing and field experience.

Colors: Provide color of exposed joint sealers indicated or if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

Elastomeric Sealant Standard: Provide manufacturers standard chemically curing, elastomeric sealant of base polymer indicated, complying with ASTM C920 requirements.

Two-Part Nonsag Polysulfide Sealant: Type M; Grade NS; Class 12-1/2; Uses NT, M, A, and 0.

Two-Part Pourable Polysulfide Sealant: Type M; Grade P; Class 12-1/2; Uses T, M, G, A, and 0.

Acrylic Sealant: Manufacturer's standard one-part nonsag, sp. vent-release curing, acrylic terpolymer sealant complying with ASTM C 920 for Type S; Grade NS; Uses NT, M, A, and 0: except for selected test properties which are revised as follows:

*Heat-aged hardness:	40-50
*Weight loss:	15 percent
*Max cyclic movement capability:	plus or minus 12-1/2 percent

Acrylic Emulsion Sealant: Manufacturer's standard one part, nonsag, acrylic, mildew-resistant, paintable, acrylic-emulsion sealant complying with ASTM C 834.

Butyl Polyisobutylene Tape Sealant: Manufacturer's standard, solvent-free, butyl-polyisobutylene tape sealant with a solids content of 100 percent complying with AAMA 804.1: nonstaining, paintable, and nonmigrating in contact with nonporous surfaces; packaged on rolls with a release paper on one side: with or without reinforcement thread to prevent stretch.

Impregnating Agent: Manufacturer's standard.

Density: Manufacturer's standard.

Backing: Pressure sensitive adhesive. Factory-applied to one side, with protective wrapping.

Sealant Backings, General: Nonstaining, compatible with joint substrates, sealant, primers and other joint fillers; approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

Plastic Foam Joint-Fillers: Pre-formed, compressible, resilient, nonwaxing, nonextruding strips of plastic foam of material indicated below, and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

Either flexible, open-cell polyurethane foam or nongassing, closed-cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer.

Primer: As recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated.

EXECUTION

General: Comply with joint sealer manufacturer's instructions applicable to products and application indicated.

Elastomeric Sealant Installation Standard: Comply with ASTM C 962.

Latex Sealant Application Standard: Install sealant, including forming, packing and other accessory materials to fill opening around mechanical and electrical services penetrating floors and walls to provide fire-stops with fire resistance ratings indicated.

DIVISION 8

Section 8110 Steel Doors and Frames

STANDARDS: In addition to other specified requirements, comply with Steel Door Institute "Recommended Specifications for Standard Steel Doors and Frames" (SDI-100) for the following classifications:

INTERIOR DOORS: SDI-100, Grade III, heavy-duty, Model 1 min. 18-gage faces.

EXTERIOR DOORS: SDI-100, Grade III, extra heavy-duty, Model 2 min. 16-gage faces.

SUBMITTALS: With manufacturer's standard details and specifications for steel doors and frames, submit shop drawings showing application to project, as required. For door and frame assemblies required to be fire-rated and exceeding sizes of tested assemblies, submit manufacturer's certification that each assembly has been constructed to conform to design, materials and construction equivalent to labeled construction requirements.

MANUFACTURER --- One of the following:

Allied Steel Products, Inc.	Amweld/Div. American Welding, & Mfg. Co.
Ceco Corp.	Steelcraft/Div. American Standard Co.
Dittco Prod. Div.	Pioneer Bldrs. Products Corp./ Div. CORE Ind., Inc.
Curries Mfg., Inc.	Republic Builders Products Corp./ Subs. Republic Steel
Fenestra Corp.	Mesker Industries Inc.
Trussbilt, Inc.	

FIRE-RATED ASSEMBLIES: Provide units that display appropriate UL or FM labels for fire rating indicated.

Over-size units will be acceptable if certified by manufacturer that each assembly is constructed the same as labeled units.

TEMPERATURE RISE RATING: Provide labeled doors for stairwell enclosures, which indicate "Temperature rise 30 minutes - 450 deg. F max.", or better rating.

MATERIALS: Steel doors and frames; hot-rolled, pickled and oiled per ASTM A 569 and A 568; cold-rolled per ASTM A 366 and A 568.

*Galvanized sheets, ASTM A 526 with ASTM A 525 G 60 zinc coating, mill phosphatized.

ANCHORS AND ACCESSORIES: Manufacturer's standard units. Use galvanized items for units built into exterior walls, complying with ASTM A 153.

FABRICATION: Fabricate units to be rigid, neat in appearance and free from defects, warp or buckle. Weld exposed joints continuously, grind, dress, and make smooth, flush and invisible. Prepare steel doors and frames to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping, complying with ANSI A 115 "Specifications for Door and Frame and Preparation for Hardware." Reinforce units to receive surface-applied finish hardware to be field applied. Locate finish hardware as indicated or, if not indicated, per DHI "Recommended Locations for Builder's Hardware". Shop paint exposed surfaces of doors and frame units including galvanized surfaces, using manufacturer's standard baked-on rust inhibitive primer.

DOORS: Comply with SDI-100, of the types and styles indicated for materials quality, metal gauges, and construction details. Provide sight proof louvers for interior doors where indicated, constructed of 24-gauge steel V-shaped or Y-shaped blades, set into 20-gauge steel frame. Provide weatherproof louvers with insect screen for exterior doors where indicated, constructed of 18 ga. steel. For fire-rated doors, provide tightly fitted spring-loaded automatic closing louvers, with operable blades retained by fusible links. Rating label same as doors units.

FRAMES: Comply with SDI-100, of the types and styles indicated for materials quality, metal gauges, and construction details. Provide standard hollow metal frames for doors, transoms, sidelights, borrowed lights, and other openings as indicated. Prepare frames to receive 2 silencers on strike jambs of single-swing frames and on heads of double-swing frames. Provide 26-gauge steel plaster guards or mortar boxes welded to frame, at back of hardware cutouts where installed in concrete, masonry or plaster openings. Protect inside faces of frames in plaster or masonry wall construction, which are placed with anti-freeze additives using high-build fibered asphalt emulsion coating.

INSTALLATION: Install hollow-metal units in accordance with manufacturer's instructions and final shop drawings (if any). Fit doors to frames and floors with clearances specified in SDI-100. Install fire-rated units in accordance with NFPA Std. No. 80. Finish hardware is specified in another Division-8 section.

GENERAL

Quality Standards: Comply with NWWDA I.S 1 and AWI "Architectural Woodwork Quality Standards".

Submittals: In addition to product data, submit the following: Shop Drawings indicating location, size, face material, and finishes of each door required. Provide the following veneer doors unless otherwise specified in Door Schedule.

Producers: (Refer to Door Schedule for Door Veneer typ.)

Manufacturers: Subject to compliance with requirements. provide wood doors by one of the following:

Algoma Hardwoods, Inc.

Doors, Incorporated

Buell Door Company

Weyerhaeuser Company or approved equal

Cal-Wood Door Div., Timberland Industries, Inc

Chappell Door Company

General Wood Door Product Requirements: Provide doors with same exposed surface material on both faces of each, unless otherwise indicated.

Transom and Side Panels: Match quality, construction and appearance of associated wood doors.

SOLID CORE DOORS: Comply with the following requirements.

AWI Grade: Custom

Construction: SLC-5, Glued block core

Finish: (Re: Drawings for finish):

Transparent: Natural Birch, Plain Sliced

Opaque: Any closed-grain, medium density hardwood of mill option

Plastic Laminate: In colors, patterns, and finishes indicated.

INTERIOR HOLLOW CORE DOORS: Comply with the following requirements:

Faces: Natural birch, rotary cut.

AWI Grade: Custom.

Construction: IHC (Institutional Hollow Core).

Finish: (Re: Drawings for finish):

Transparent: Natural Birch, Plain Sliced

Opaque: Any closed-grain, medium density hardwood of mill option

Plastic Laminate: In colors, patterns, and finishes indicated.

INTERIOR FIRE-RATED SOLID CORE DOORS: Labeled and listed for rating indicated, by testing & inspection agency acceptable to authorities having jurisdiction, complying with the following requirements:

Face & AWI Grade: Match face on non-rated doors in same area of blds. unless otherwise indicated.

Construction: Manufacturer's standard core construction as required to provide fire resistance rating indicated.

OTHER ITEMS

Pairs: Furnish formed steel-edges & astragals for pairs of fire-rated doors. unless otherwise indicated.

Openings: Cut and trim openings with moldings of material and profile indicated.

Light openings: Trim openings with moldings of material and profile indicated.

Louvers: Factory install louvers in prepared openings.

Transparent Finish: Comply with requirements for grade, finish system, staining effect and sheen.

Staining: Match approved sample for color.

INSTALLATION

Install wood doors to comply with manufacturer's instructions and of referenced AWI standard and as indicated.

Install fire-rated doors in corresponding fire-rated frames in accordance w/requirements NFA No. 80. Align and fit doors in frames with uniform clearances and bevels. Machine doors for hardware. Seal cut surfaces after fitting and machining.

Prefit Doors. Fit into frames for uniform clearance at each edge

GENERAL

Description: Work included: Furnish all necessary materials, labor and equipment for the complete installation of aluminum framing and swing doors as shown on the drawings and specified herein. Related work specified elsewhere: (specifier list. **Sections 8710**).

QUALITY ASSURANCE:

Whenever substitute products are to be considered, supporting technical lit., samples, drawings and performance data must be submitted ten (10) days prior to bid in order to make a valid comparison to the products involved. Test reports must be made available upon request.

DOOR AND WINDOW TYPE (RE: Door Schedule/ Elevations for applicable Type):

Manufacturer:	Kawneer	size	system	insert
Frames:	Exterior:	1-3/4" x 6"	EnCore	1"
	Interior:	1.75" x 4-1/2"	TriFab VG 450	1/4"

Doors: 500 Series Wide Stile (6 5" bottom rail and 5" top vertical stiles.) **(not used)**
 Wall Thickness – 3/16" Door Depth 2 1/4" Infills 1 1/4" – 1"

PERFORMANCE REQUIREMENTS FOR WINDOWS:

Air infiltration-shall be tested in accordance with ASTM E 283. Infiltration shall not exceed .06 CFM per square foot (.0003 m3/s-m2)of fixed area. Water infiltration-shall be tested in accordance with ASTM E 331. No water penetration at a test pressure of 9 P.S.F. (432 Pa.0)

Structural performance shall be based on:

1. Max. deflection of 1/175 of the span
2. Allowable stress with a safety factor of 1.65 The system shall perform to these criteria under a wind load of 20 PSF.

PERFORMANCE REQUIREMENTS FOR DOORS

Structural: Resistance to corner racking shall be tested by the Dual Moment Load test as follows:

- A. Test section shall consist of a standard top door corner assembly. Side rail section shall be 24" long and top rail section shall be 12" long.
- B. Anchor "top rail" positively to test bench so that corner protrudes 3" beyond bench edge.
- C. Anchor a lever arm positively to "side rail" at a point 19" from inside edge of "top rail". Attach weight support pad at a point 19" from inner edge of "side rail".
- D. Test section shall withstand a load of 270 pounds on the lever arm before reaching the point of failure, which shall be considered a rotation of the lever arm in excess of 45 deg. Air infiltration shall be tested in accordance with ASTM E283, at a pressure differential of 1.567 P.S.F. (75 Pa). A single 3'-0" x 7'-0" entrance door and frame shall not exceed .50 CFM per linear foot of perimeter crack. A pair of 6'-0" x 7'-0" entrance doors and frame shall not exceed 1.0 CFM per linear foot of perimeter crack.

MATERIALS:

Extrusions shall be 6063-T5 alloy and temper (ASTM B 221 alloy G.S. 10A-T5). Fasteners, where exposed, shall be aluminum, stainless steel or plated steel in accordance with ASTM A164. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum. Glazing gaskets shall be elastomeric extrusions. Glazing gaskets for doors shall be EPDM elastomeric extrusions. Major portions of the door stiles shall be .125" (3.2) in thickness and glazing molding shall be .050" (1.2) thick.

FINISH:

All exposed framing surfaces shall be free of scratches and other serious blemishes. Aluminum moldings shall be given a caustic etch followed by an anodic oxide treatment to obtain an Architectural Class II clear anodic coating conforming to aluminum Association Standard AA-M12 C22 A42 (**submit standard color range for approval and coordinate with other trades such as aluminum window finishes, project hardware finishes as well as aluminum door and frame finishes**).

HARDWARE: (coordinate hardware finish with aluminum door and frame finish, aluminum window finish, project hardware finish and submit written statement of such coordination to Architect for approval. If finishes do not match, inform Architect in writing and request written clarification.)

Refer to Specs Section 8710 assigned to aluminum doors and provide any items that are not in Schedule and are required for proper door operation, or required by codes. Hardware for the entrance door and frame shall be as follows or approved equal.

(Not used)

- 1. Hinge (3 per leaf min.): Continuous Hinge by Kawneer
- 2. Locks: Cylinder by Kawneer Tumbler in Hardware schedule.
Dead lock MS-1850A by Adams Rite supplied by Kawneer.
- 3. Closer (2): Norton 1605 surface closer w/ adjustable door sweep (3 sec. 3" min. from 70 degrees open to 3" from latch) & 5# max. opening force. H/C compliant
- 4. Exit Devise (2): Door-O-Matic 1490 with concealed vertical rods
- 5. Push-Pull (2) Style "CO12" & "CP II" by Kawneer
- 6. Door Holder (2): Floor Type
- 7. Threshold (1, 6 ft long): #69-139
- 8. Miscellaneous #38-560
- 9. Flush Bolt 1 pair in inactive leaf

FABRICATION

Windows: Framing Members: Refer to "Frames" on page 1 Cupling mullions shall utilize the "Seaming Mullion" Design which conceals the exterior seam joint between male and females halves. All members shall be utilizing screw joinery.

Doors: The door stile and the rail face dimensions of the Aluminum doors will be as follows:

Door	Vertical Stile	Top Rail	Bottom Rail
350	3-1/2"	3-1/2"	6-1/2"
500	5"	5"	10"

Corner construction shall consist of mechanical clip fastening, SIGMA deep penetration and fillet welds. Glazing stops shall be snap-in type with EPDM glazing gaskets. The door weathering on a single acting offset pivot or butt hung door and frame (single or pair) shall be Kawneer SEALAIR weathering. It is a thermoplastic elastomeric weathering in a tubular shape with a semi-rigid polymeric backing. Optional: The door bottom rail will be weathered with and EPDM blade gasket sweep strip applied with concealed fasteners.

INSTALLATION:

All glass framing and items under this heading shall be set in correct location as shown in the details and shall be level, square, plumb and in alignment with other work in accordance with the manufacture's installations instructions and approved shop drawings. All joints between framing and building structure shall be sealed in order to secure a watertight installation.

PROTECTION AND CLEANING:

After installation, the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, lime, acid, cement, or other contaminants. The General Contractor Shall be responsible for final cleaning

SECTION 08 71 00 - FINISH HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

Hardware for swinging, sliding, and folding doors except special types of unique and non-matching hardware specified in other sections.

1.02 RELATED WORK

- A. Section 08 11 13 – Hollow Metal Doors and Frames
- B. Section 08 11 16 – Interior Aluminum Frames
- C. Section 08 21 11 – Flush Wood Doors
- D. Division 26 – Electrical
- E. Division 28 – Fire Alarm/Detection

1.03 REFERENCES

- A. ADA - Americans with Disabilities Act of 1990 including Accessibility Guidelines as amended by the D.O.J. September 15, 2010, as adopted by the Authority Having Jurisdiction (AHJ).
- B. ANSI A117.1 - Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People.
- C. ANSI/BHMA A156 (.1 through .21)
- D. ANSI/DHI – A115.1G Installation Guide for Doors and Hardware.
- E. FEMA P-361 – Safe Rooms for Tornadoes and Hurricanes.
- F. NFPA 80 - Fire Doors and Windows.
- G. NFPA 101 – Life Safety Code.
- H. IBC - International Building Code, as adopted by public Authority Having Jurisdiction (AHJ).
- I. State Rules and Regulations for Barrier Free Facilities, as adopted by AHJ.

1.04 DOOR HARDWARE TYPES

- A. Types of finish hardware required include, but is not necessarily limited to, the following:
 - 1. Pivot sets and intermediate pivots.
 - 2. Hinges.
 - 3. Lock cylinders.
 - 4. Keys, keying, and key control.
 - 5. Locksets, latchsets, and privacy sets.
 - 6. Exit devices.
 - 7. Closers.
 - 8. Mullions.
 - 9. Overhead, wall, and floor stops.
 - 10. Protection plates.
 - 11. Gasketing for exterior and interior doors, as required.
 - 12. Door holders.
 - 13. Door bottoms.
 - 14. Thresholds.
 - 15. Silencers.
- B. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of door hardware is indicated elsewhere in this section or in the Door Hardware Schedule at the end of this section. Refer to Part 2 Products for Manufacturer's identification and allowable substitutions.

1.05 SUBMITTALS

- A. Under provisions of Section 01 34 00, submit the following:
1. Product information: Manufacturer's published technical product data for all specified door hardware items indicating compliance with the requirements.
 2. Hardware Schedule:
 - a. Hardware schedules are intended for the Contractor's coordination of the work. Review and acceptance by the Architect or Owner does not relieve the Contractor of his exclusive responsibility to fulfill the requirements as shown and specified.
 - b. Submit hardware schedule in the manner and format as specified, complying with the actual construction progress schedule requirements for each draft. Include the following information:
 - 1) Explanation of all abbreviations, symbols, codes, at the like, including door handing.
 - 2) Type, style, function, size, and finish of each hardware item.
 - 3) Door and frame sizes and materials cross referenced to the Architect's marks in the door schedule.
 - 4) Room identification (name and number) on each side of door opening as indicated on the drawings.
 - 5) Product name, model number, description, and name of manufacturer of each item.
 - 6) Fastenings and other pertinent information.
 - 7) Locations of hardware cross referenced to architectural floor plans and door schedules.
 - 8) Mounting heights and locations of each type of hardware.
 3. Key Schedule:
 - a. Require a qualified representative of the hardware supplier to personally meet with the Owner and Architect to obtain the Owner's written key requirements.
 - b. Include a separate key schedule, showing clearly how the Owner's instructions on keying of locks has been fulfilled.
 4. Samples: Upon request, submit actual material samples of items indicated as for color selection.
 5. Templates: Hardware supplier will furnish hardware templates to the Contractor for each fabricator of doors, frames, and other work to be shop prepared or factory prepared for the installation of hardware. Upon request check shop drawings of such other work, to conform that adequate provisions are made for proper location and installation of hardware.
 6. Provide electrical operation technical sheets including product schematics, point to point diagrams, and electrical requirements of all electrified hardware. Completely coordinate with the general contractor, electrical engineer, electrician, security access subcontractor and the installer. Operational descriptions are for demonstration only – verify operational intent with the owner, architect and electrical engineer
- B. Under provisions of Section 01 70 00, submit the following:
1. Product information.
 2. Hardware schedule.
 3. Manufacturer's published operation and maintenance data. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
 4. Tools and extra materials as required
 5. Manufacturer's warranties, revise to meet criteria as established within this section. Warranty periods shall commence upon acceptance of the building by the owner. Where warranties listed exceed the manufacturer's standard warranty, obtain in writing an extended warranty to meet the requirements above and as noted. If the manufacturer will not meet these requirements, and another approved manufacturer will comply, supply the alternate approved manufacturer.

- A. Acceptable Designs:
1. Items specified in this section are products which are of acceptable design.
 2. Do not substitute products without Architect's written prior approval per Section 01 60 00. Requests for approval shall be submitted by factory authorized distributor firms representing the products proposed for substitution. Items that are noted to allow no substitution are matching existing materials and the owner's material inventory for servicing the facility.
- B. Qualifications:
1. Manufacturer: Manufacturers named in Part 2 of this section with not less than 5 years experience in manufacturing commercial door hardware of the type indicated.
 2. Hardware Supplier:
 - a. A recognized architectural finish hardware supplier who has been furnishing hardware in the same state as the project for a period of not less than 5 years.
 - b. Hardware supplier's organization shall include an experienced Architectural Hardware Consultant (AHC), certified by the Door and Hardware Institute (DHI), who is physically available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor. Mail or telephone correspondence is not acceptable.
 - c. Hardware supplier shall have local warehousing facilities and shall maintain an adequate parts inventory of items supplied for future service to the owner. Supplier will be a factory authorized distributor of all hardware specified.
 3. Installer: Company specializing in installing work of this section with not less than 5 years experience and acceptable to the manufacturers and the hardware supplier. Maintain regular work force of qualified personnel, trained, skilled, and experienced in installing door hardware and constant, competent supervision per the requirements of the General Contractor. The hardware installer shall meet with the representatives of the General Contractor and hardware supplier to jointly inventory all hardware items. Upon satisfactory inventory of products, the hardware installer accepts responsibility for all hardware items inventoried.
- C. Regulatory Requirements:
1. Provide hardware for fire rated openings, whether specified or not, in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware which has been tested and listed by UL or FM for types and sizes of doors required and complies with requirements of door and door frame labels. Label hardware, as required, for compliance with pressure testing criteria as dictated in IBC.
 2. Provide hardware which meets or exceeds handicap accessibility per local building code requirements. Conform to the Americans with Disabilities Act (ADA) of 1990 as amended by the D.O.J. September 15, 2010, as adopted by the Authority Having Jurisdiction (AHJ).

1.07 DELIVERY, STORAGE, HANDLING, AND PROTECTION

- A. Deliver, store, handle, and protect products to project site under provisions of Section 01600 and as specified herein.
- B. Require hardware supplier to:
1. Tag each item or package separately, with identification related to final hardware schedule.
 2. Include manufacturer's basic installation instructions with each item or package.
 3. As material is received by hardware supplier from various manufacturers, sort and repackage in containers with each item clearly marked with appropriate opening numbers to match the approved hardware schedule. Two or more identical items may be packed in the same container.
 4. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.
 5. Inventory hardware jointly with representatives of the General Contractor, hardware supplier and the hardware installer until each is satisfied that count is correct. Refer to paragraph 1.6-B-3.

- C. Protect hardware from theft by cataloging and storing in a secure and lockable area. Control the 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. Replace lost, missing, damaged, or stolen door hardware items at no additional cost to the Owner as required to meet schedule requirements

1.08 SEQUENCING AND SCHEDULING

- A. Coordinate work of this section with the work of other sections of work under provisions of Section 01 04 00
- B. Furnish hardware templates to each fabricator of doors, frames, and other work to be shop or factory prepared for the installation of hardware
- C. Verify completeness and suitability of door hardware with the hardware supplier and the hardware installer.

1.09 MAINTENANCE MATERIALS

- A. Under provisions of Section 01 70 00, furnish to Owner a complete set of special wrenches and tools applicable to each different or special hardware component as needed for Owner's continued adjustment, maintenance, removal, and replacement of door hardware.
- B. Special tools and accessories shall be supplied by the hardware component manufacturer.

PART 2 PRODUCTS

2.01 MATERIALS AND FABRICATION

- A. General:
 - 1. Provide all door hardware for complete work, in accordance with the drawings and as specified herein.
 - 2. Quantities listed, in any instance, are for the Contractor's convenience only and are not guaranteed.
 - 3. Provide items and quantities not specifically mentioned to ensure a proper and complete operational installation. Match the quality and finish of items specified.
 - 4. Provide miscellaneous hardware as listed in hardware groups.
- B. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Door schedule indicates door and frame sizes, materials, required fire ratings, and other pertinent information. Furnish each item of hardware for proper installation and operation of door movement as indicated.
- C. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable name plates), except in conjunction with required UL or FM labels and as otherwise acceptable to the Architect. Manufacturer's identification will be permitted on rim of lock cylinders and latch faceplates only.
- D. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
- E. Fasteners: Provide hardware manufactured 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.
 - 1. Screws: 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 hardware finish or, if exposed in surfaces of other work, to match finishes of

such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.

2. Concealed Fasteners: Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex screw fasteners.

2.02 HINGES

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: Stanley
 2. Approved Substitutions: Hager, McKinney
 3. Pivots are as manufactured by Dorma. Equal products by Rixson are acceptable.
- B. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template produced units.
- C. Screws: Furnish Phillips flat head or machine screws for installation of units, except furnish Phillips flat head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges.
- D. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 1. Steel Hinges: Steel pins.
 2. Non-ferrous Hinges: Stainless steel pins
 3. Supply the manufacturers standard non-removable hinge pins (NRP) at all out swinging (reverse bevel) doors.
- E. Pin Tips: Flat button and matching plug, finished to match leaves.
- F. Number of Hinges: Provide number of hinges indicated, but not less than 3 hinges per door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.
- G. Butt type hinges and continuous hinges are to be warranted for a period of two years. Pivots shall be warranted for a period of two years.

2.03 LOCK CYLINDERS

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: Best Patented
 2. Substitutions: Sargent, Dorma
- B. Equip locks with 7-pin cylinders for small format interchangeable core pin tumbler inserts, Cormax patented key system, with brass construction cores for use during the construction phases. Temporary construction cores shall be removed upon installation of the permanent key system by the owner and returned to the hardware supplier.
- C. Construct lock cylinder parts from brass/bronze, stainless steel, or nickel silver.

2.04 KEYS, KEYING, AND KEY CONTROL

- A. Keys:
 1. Material: Provide keys of nickel silver only
 2. Quantities: These quantities are to establish a maximum allowable quantity of cut keys to service the project and may not necessarily be assigned as noted. A lesser quantity of cut keys required will not result in any credits, nor a quantity of uncut keys to be issued unless noted otherwise.
 - a. 3 change keys per each cylinder unit.
 - b. 5 master keys per master.
 - c. 2 Construction Control Keys
 - d. 2 Permanent Control Keys
 - e. 10 construction keys.

3. Deliver keys to the Owner's representative. Send masterkeys to Owner via U.S. registered mail direct from hardware supplier
- B. Keying:
 1. Comply with Owner's written instructions for masterkeying and, except as otherwise indicated, provide individual change keys for each lock which is not designated to be keyed alike with a group of related locks
 2. Grandmaster key all cylinder items to coordinate with the Owner's instructions.. Permanently inscribe each key with the notation "DO NOT DUPLICATE".
- C. Key Control:
 1. Provide a key control system including envelopes, labels, tags with self locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by the system manufacturer, with capacity for 150% of the number of locks required for the project.
 2. Provide a hinged panel type cabinet, for wall mounting, Telkee RWC-75S or equal.
 3. Provide cylinder units with concealed key control and keys with visual key control.

2.05 LOCKSETS, LATCHSETS, AND PRIVACY SETS

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: Best
 2. Approved Substitutions: Sargent, Dorma
- B. Types: Locksets, latchsets, and privacy sets as indicated in Door Hardware Schedule.
- C. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt. Provide dust-proof strikes for foot bolts, except where not available. At these locations, provide manufacturer's standard recessed strike. Provide roller type strikes where recommended by lock, latch or bolt manufacturer. If aluminum frames are specified, confirm with the aluminum frame supplier that the standard lock strikes will function. Provide the manufacturer's standard extended lip strikes if required.
- D. Lock Throw: Provide 3/4" minimum throw of mortise type latches and deadbolts used. Cylindrical latches will be 1/2" minimum. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
- E. Locks and latches shall be warranted for a period of five years.

2.06 EXIT DEVICES AND MULLIONS

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: Precision
 2. Approved Substitutions: Von Duprin, Detex
- B. Provide risers, as needed, to prevent interference with door glazing kits.
- C. Provide spacers as needed for proper application of removable mullions on narrow stop type frames.
- D. Exit devices and related hardware shall be warranted for a period of five years.

2.07 CLOSERS:

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: Stanley QDC1 Series
 2. Approved Substitutions: Sargent 1430 Series, LCN 4041-DEL Series
- B. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending on the size of the door, exposure to weather and anticipated frequency of use.
- C. Provide manufacturer's standard through bolt attachment where door construction is not adequate for support.
- D. Arms:

1. Provide parallel arms for all overhead closers, except as otherwise indicated. Provide drop plates as needed to prevent glazing interference
- E. Mount all closers to the maximum allowable degree of opening by the closer manufacturer's template. Where closer arms incorporate dead stop features, mount closers to the maximum degree of opening available before conflict with adjacent structures. If not apparent on the contract documents, verify the use of open space with the Architect or Owner's Representative to determine the maximum allowable degree of opening.
- F. Access Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A117.1 provisions for door opening force. Fire protection has precedence over handicap compatibility, check with local jurisdiction.
- G. Where not standard, supply the manufacturer's optional full cover (FC) for all closers.
- H. Door closers and related hardware shall be warranted for a period of twenty-five years. Electronic closers shall be warranted for a period of two years.

2.08 OVERHEAD STOPS

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: Architectural Builders Hardware
 2. Approved Substitutions: Rixson
- B. Mount stops to the maximum degree of opening available before conflict with adjacent structures, or, if adjacent structures are not considered, to the maximum allowable by stop manufacturer's template.
- C. If not apparent on the contract documents, verify the use of open space with the Architect or Owner's Representative to determine the maximum allowable degree of opening.
- D. Overhead stops in exterior doors must be manufactured from stainless steel, US32D finish.
- E. Overhead stops shall be warranted for a period of two years.

2.09 WALL AND FLOOR STOPS

- A. Manufacturers:
 1. Listed in Door Hardware Schedule: Trimco
 2. Approved Substitutions: Hager, Rockwood
- B. General: Except as otherwise indicated, provide stops (wall, floor or overhead) at each leaf of every swinging door leaf.

2.10 PROTECTION PLATES

- A. Manufacturers:
 1. Listed in Door Hardware Schedule: Trimco
 2. Approved Substitutions: Hager, Rockwood
- B. Types: Armor Plates, Kick Plates, Mop Plates
- C. Fasteners: Provide manufacturer's standard exposed Phillips head fasteners for door trim units; either machine screws or self tapping sheet metal type screws per manufacturer's recommendations for application to the specified door construction.
- D. Sizes: Fabricate protection plates (armor, kick or mop) not more than 2" less than door width on stop side and not more than 1" less than door width on pull side, x the height indicated.
- E. Metal Plates: Stainless Steel, 18 gauge (0.050) thick Satin finish, US32D (630), beveled four edges (B4E).

2.11 GASKETS AND SWEEPS

- A. Manufacturer:
 1. Listed in Door Hardware Schedule: National Guard
 2. Approved Substitutions: Hager, Zero

- B. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf. Provide type, sizes and profiles indicated as drawn or scheduled.
- C. Fasteners: Provide non-corrosive fasteners as recommended by the manufacturer for applications indicated.
- D. Replaceable seal strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by the manufacturer.
- E. Perimeter weatherstripping: Flexible, hollow neoprene bulb or loop insert, conforming to MIL R 6055, Class II, Grade 40.
- F. Weatherstripping at Door Bottoms: Provide door bottoms consisting of contact type resilient insert and metal housing of design and size indicated.
- G. Hot smoke seal, if required by IBC and subsequent UL testing procedures, will be supplied as an integral part of the door assembly by the door manufacturer.
- H. Gaskets and sweeps shall be warranted for a period of three years.

2.12 THRESHOLDS

- A. Manufacturer:
 - 1. Listed in Door Hardware Schedule: National Guard
 - 2. Approved Substitutions: Hager, Zero
- B. Except as otherwise indicated provide standard metal threshold unit of type, size and profile as detailed or scheduled.
- C. Where there is conflict between scheduled thresholds and details, details shall have precedence. Revise details only if necessary to comply with handicap accessibility requirements. Notify the Architect of such required modifications
- D. Thresholds and related items shall be warranted for a period of three years, abrasive coatings shall be warranted for a period of ten years

2.13 SILENCERS

- A. Manufacturers:
 - 1. Listed in Door Hardware Schedule: Trimco
 - 2. Approved Substitutions: Hager, Rockwood

2.15 FINISHES

- A. Exposed surfaces of hardware shall be Brushed Chrome (US26D, 626), unless otherwise indicated. Items specified in Satin Stainless Steel (US32D, 630) shall be supplied in stainless steel with no exceptions. Antimicrobial finish supplied as noted.
- B. The designations used in the schedule and elsewhere to indicate hardware finishes are the industry recognized standard commercial finishes common to the product's manufacturer listed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Under provisions of Section 01 04 00, examine and verify that substrates and project site conditions are ready to receive work of this section.
- B. Do not begin installation until finishes indicated to be field applied have been applied to doors, frames, and similar items requiring project site finishing and are thoroughly dry and cured.
- C. Do not begin installation until unsatisfactory conditions are corrected in a manner acceptable to the installer. Beginning installation means installer accepts project site conditions and substrates as ready to receive work of this section

3.02 INSTALLATION

- A. General: The types and approximate quantities of door hardware required for this project are indicated at the end of this section.
- B. Key Cabinet: Install in location as indicated on drawings or as directed by the Architect.
- C. Heights: 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 directed by the Architect.
- D. Substrates: Adjust and reinforce attachment substrates as necessary for proper installation and operation of hardware.
- E. Installation:
 - 1. Install each hardware item in compliance with the manufacturer's instructions, requirements of NFPA 80, NFPA 101, IBC, ADA, State Rules and Regulations for Barrier Free Facilities and recommendations of the DHI
 - 2. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
 - 3. Drill and countersink units which are not factory prepared for fasteners. Space fasteners and anchors in accordance with industry standards.
 - 4. Where not factory machined, machine cut for hardware per template, as required.
 - 5. Cut and fit thresholds and floor covers to profile of door frames. Join units with concealed welds. Cut smooth openings for spindles, bolts, or similar items. Screw thresholds to substrate with the manufacturer's standard flat head sleeve anchor (FHSL), 1/4-20 x 2" or as noted. Fill cavities of thresholds at sound rated openings with 1 inch thick (uncompressed thickness) low density fiberglass sill sealer insulation full width and length of the threshold. In addition to fastening requirements, set thresholds for exterior doors in a full bed of butyl-rubber or polyisobutylene mastic sealant.
 - 6. Do not install hardware which is incomplete or apparently improper for application. Notify the hardware supplier immediately of any such deficiencies. Failure to comply with this requirement indicates the hardware installer's acceptance of responsibility for proper application and performance.
- F. Cutting and Patching:

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 sections.

3.03 ADJUSTING

- A. Initial Adjustment:
 - 1. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Adjust resilient faced sound stops for continuous contact with door and threshold. Adjust weatherstripping and sweeps to completely seal doors with frames and to adjacent structures.
 - 2. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. 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 doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.04 DEMONSTRATION

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

3.05 CLEANING AND DEBRIS

- A. Cleaning:
 1. Clean work under provisions of Section 01 70 00
 2. Clean adjacent surfaces soiled by work of this section.
- B. Debris: Under provisions of Section 01 50 00 remove debris from project site and legally dispose of off-site.

3.06 MAINTENANCE

- A. Approximately six months after the acceptance of hardware in each area, the hardware installer shall:
 1. Return to the project and re-adjust every item of hardware to restore proper function of doors and hardware.
 2. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.
 3. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units.
 4. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware and submit to the Architect.

3.07 PROTECTION

Under provisions of Section 01 50 00, protect work of this section as required so that work will be without damage or deterioration at the time of completion and acceptance by the Owner.

3.8 DOOR HARDWARE SCHEDULE

List of Manufacturers

AB	ABH	Overhead Stops. Emergency Access Hardware
BE	Best	Locks. Cylinders
DM	Dorma	Pivots
PR	Precision	Exit Devices
ST	Stanley	Hinges. Closers
TK	Telkee	Key Cabinet
TR	Trimco	Stops. Push/Pulls. Flat Goods

Finish Codes

<u>Code</u>	<u>Description</u>
626, 652	Brushed Chrome
AM	Antimicrobial Coating
630	Satin Stainless Steel
689	Painted Aluminum
710CU	Antimicrobial Finish (Trimco)

Option Codes

CD	Cylinder Dogging
LL	Lead Lined
B4E	Beveled 4 Edges Kick and Mop Plates
CS	Counter Sinking of Kick and Mop Plates
"N" Mounting	"N" Spanner Cap Through Bolting
SSMS/EA	Stainless Machine Screws/Expansion Anchors

GENERAL

Glazing Standard: Comply with FBMA "Glazing Manual" and "Sealant Manual"

Submittals: In addition to product data submit the following. Samples of each glass indicated, except for clear single pane units; and of each type of sealant or gasket exposed to view

PRODUCTS

Sizes: Fabricate glass of thickness indicated and to sizes required for glazing openings indicated, with edge clearances and tolerances complying with recommendations of glass manufacturer

*Primary Glass Products: Comply with ASTM C 1036 for the following:

Tinted float Glass, Type I, Class 2, Quality q3; of manufacturer's standard tint and with visible light transmittance and shading coefficient indicated, respectively, below:

Blue: 74-76 percent, .69 -0.71

Tinted Tempered Float Glass: Kind Ft, Condition A, float glass.

Coated Glass Products: Comply with primary and heat-treated glass requirements as applicable for glass products to which coatings are applied. Performance characteristics Type I Class 2, Quality q3, and as follows:

Match tint and performance characteristics specified for tinted designated below are based on manufacturers' published test data for 1/4" thick glass; u-values are expressed in BTU's per hr. per deg. F difference.

Glazing Sealant: Comply with sealant and glass manufacturers for selection of glass sealants which suit project application and installation conditions and which are compatible with surfaces contacted. Provide color of exposed sealants indicated or as selected by Arch.

I-Part Acid-Curing Silicone Glazing Sealant: ASTM C 920: Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to uses indicated, 0.

I-Part Non-acid-Curing Silicone Glazing Sealant: ASTM C 920: Type S; Grade NS; Class 25; uses NT, 61 A, and, as applicable to uses indicated 0; and as follows:

Low Modulus: With additional capability to withstand an increase or decrease in joint width of 50% of joint width and a tensile strength of 45 psi or less per ASTM D 412 at 100 percent elongation after 14 days at 77 deg. F (25 Deg. C).

Medium-Modulus: With additional capability to withstand an increase or decrease in joint width of 50% of joint width and a tensile strength of 75 psi or less per ASTM D 412 at 100 percent elongation after 14 days at 77 deg. F (25 deg C).

2-part Polysulfide Glazing Sealant: ASTM C 920, Type M, Grade NS, Class a25, uses NT, 6, A, and, as applicable, 0.

PERFORMED BUTYL-POLYISODUTYLENE GLAZING TAPE: AAMA 804.1, with or without continuous spacer rod as recommended by manufacturers of tape and glass for application indicated.

Lock-Strip Gaskets: ASTM C 542; black; neoprene with molded corners. Dense elastomeric Compression Seal Gaskets; ASTM C 864, extruded or molded neoprene, EPDM, or thermoplastic polyolefin rubber.

Cellular Elastomeric Preformed Gaskets: Type recommended by manufacturer of sealants/gaskets.

Blocks and Spacers: Neoprene, EPDM or silicone as required for compatibility with glazing sealants; of 80 to 90 Shore A hardness for setting blocks and, for spacers and edge blocks. of hardness recommended by glass and sealant manufacturer for application indicated.

General

Comply with referenced FGMA standards and instructions of manufacturers of glass, glazing sealants, and gaskets, to achieve airtight and watertight performance, and to minimize breakage. Product glass from edge damage during handling and installation, inspect glass during installation and discard pieces with edge damage that could affect glass performance. Set units of glass in each series with uniformity of pattern, draw, bow and similar characteristics. Wash glass on both faces not more than 4 days prior to date scheduled for inspection intended to establish date of substantial completion. Wash glass by method recommended by glass manufacturer.

PART 1 – GENERAL:

Portland cement plaster scratch and leveling coats on wall surfaces indicated to receive tile are specified in Division-9 section "Tile".

SUBMITTALS:

PRODUCT DATA: Submit manufacturer's production data for cementitious materials, lath, metal support components, and accessories

PROJECT CONDITIONS:

ENVIRONMENTAL REQUIREMENTS, GENERAL: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during and after application of plaster.

PART 2 – PRODUCTS:

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

Manufacturers of metal supports and expanded metal lath and accessories:

Gold Bond Building Products Div., National Gypsum Co

Milcor Division; Inrvco, Inc.

United States Gypsum Co.

Fry Reglet Corp.

METAL SUPPORTS FOR SUSPENDED AND FURRED CEILINGS:

General: Size metal ceiling supports to comply with the following, unless otherwise indicated.

Portland Cement Plaster Installation: ANSI A 42.3.

Wire for Hangers and Ties: ASTM C 641, Class 1 zinc coating, soft temper.

Channels: Cold-rolled steel; 0.0598" min. thickness of base metal (uncoated), allowable bending stress of 18,000 psi, protected with rust inhibitive paint or galvanizing complying with ASTM A 525 for B 60 coating designation, and as follows:

Carrying Channels: 1-1/2" deep x 7/16" wide flanges, 475 lbs. per 1000' painted, 508 lbs. per 1000' galvanized.

Furring Channels: 3/4" deep x 7/16" wide flanges, 300 lbs. per 1000' painted, 316 lbs. per 1000' galvanized.

Provide galvanized channels for exterior installations.

Stud Thickness: 0.0341", unless otherwise indicated.

Expanded Metal Lath: Fabricate expanded metal lath from uncoated or zinc-coated (galv.) steel sheet to produce lath complying with ASTM C 847 for type, configuration and other characteristics indicated below, with uncoated steel sheet painted after fabrication.

Diamond Mesh Lath: Comply with the following requirements:

Configuration: Flat.

Weight: 3.4 lbs. per sq. yd.

Lath Attachment Devices: Devices of material and type required by referenced standards and recommended by lath manufacturer for secure attachment of lath to framing members and/or lath to lath.

PLASTER ACCESSORIES FOR PORTLAND CEMENT PLASTER:

General: Comply with material provisions of ANSI A42.3: coordinate depth of accessories with thickness and number of coats required.

Metal Corner Reinforcement: Expanded large mesh diamond mesh lath fabricated from zinc-alloy or welded wire mesh fabricated from 0.0475" diameter zinc-coated (galv.) wire, and specially formed to reinforce external corners of Portland cement plaster on exterior exposures while allowing full plaster encasement.

Metal Corner Beads: Small nose corner beads fabricated from zinc alloy, with expanded flanges of large mesh diamond lath to allow full encasement by plaster.

Casing Beads: Square-edge style, with expanded flanges and removable protective tape, of the following material:

Material: zinc-coated (galvanized) steel.

Control Joints: Prefabricated, of material and type indicated below:

One-Piece Type: Folded pair of non-perforated screeds in M-Shaped configuration, with expanded flanges.

PORTLAND CEMENT PLASTER MATERIALS:

Portland cement, ASTM C 150, Type I or III.

Masonry cement, ASTM C 91, Type N.

Finish Coat Cement: Type as indicated below:

Portland cement, ASTM C 150, Type I, white.

Masonry cement, ASTM C 91, Type N, white.

Factory-Prepared Finish Coat: Manufacturer's standard product requiring addition of water only; white in color unless otherwise indicated.

Product: Subject to compliance with requirements, provide Oriental Exterior Finish Stucco manufactured by United States Gypsum Co.

Lime: Special hydrated lime for finishing purposes, ASTM C 206. Type S. or special hydrated lime for masonry purposes; ASTM C 207, Type S.

Sand Aggregate for Base Coat: ASTM C 897.

Aggregate for Finish Coats: ASTM C 897 and as indicated below

Manufactured or natural sand, white in color.

MISCELLANEOUS MATERIALS:

Water for Mixing and Finishing Plaster: Drinkable, free of substances capable of affecting plaster set or of damaging plaster, lath or accessories.

Bonding Agent for Portland Cement Plaster: ASTM C 932

Acoustical Sealant: ASTM C 919, non-oxidizing, skinning paintable types for exposure applications; non-drying, non-hardening, non-skinning type for concealed applications.

PORTABLE CEMENT PLASTER MIXES AND COMPOSITIONS:

General: Comply with ASTM C 926 for Portland cement plaster base and finish coat mixes as applicable to plaster bases, materials and other requirements indicated.

Portland Cement Plaster Base Coat Mixes and Compositions: Portland materials for respective base coats in parts by volume for cementitious materials and in parts by volume per sum of cementitious materials for aggregates to comply with the following requirements for each method of application and plaster base indicated. Adjust proportions below within limits specified to attain workability.

Three-Coat Work Over Metal Lath: Base coats as indicated below:

Scratch Coat: 1 part Portland cement, 0 – 3/4 parts lime, 2-1/2 – 4 parts sand.

Brown Coat: 1 part Portland cement, 0 – 3/4 parts lime, 3 – 5 parts sand.

Factory-Prepared Portland Cement Finish Coats: Add water only comply with finish coat manufacturer's directions.

Mixing: Mechanically mix cementitious and aggregate material for plasters to comply with applicable reference application standard and with recommendation of plaster manufacturer

PART 3 – EXECUTION:

PORTLAND CEMENT PLASTER LATHING AND FURRING INSTALLATION STANDARD:

Install lathing and furring materials indicated for portland cement to comply with ANSI-A42.3.

Install supplementary framing, blocking, and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar work to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum plaster manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co.

Isolation: Where lathing and metal support system abuts overhead structure, isolate horizontally, and where partition/wall work abuts overhead structure, isolate the work from structural movement sufficiently to prevent transfer of loading into the work from the building structure. Install slip or cushion type joints to absorb deflections but maintain lateral support.

Frame both sides of control and expansion joints independently and do not bridge joints with furring and lathing or accessories.

Preparation and Coordination: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling hangers in a manner that will develop their full strength and at spacings required to support ceiling.

Hangers Installation: Attach hangers to structure above ceiling to comply with ML/SFA "Specifications for Metal Lathing and Furring" and with referenced standards.

Do not attach hangers to metal deck tabs.

Install ceiling suspension system components of sizes and spacings indicated but not in smaller sizes or greater spacings than that required by referenced lathing and furring installation standards.

Wire Hangers: Space 8 gage (0.16" Diameter) wire hangers not over 4' - 0" o.c. parallel with, and not over 3' - 0" perpendicular to, direction of carrying channels, unless otherwise indicated and within 6" of carrying channel ends.

Carrying Channels: Space carrying channels not over 3' - 0" o.c. with 4' - 0" o.c. hanger spacing.

Furring Channels to Receive Metal Lath: Space furring channels not over 16" o.c. for 3.4 lb. diamond mesh lath or 24" o.c. for 3.4 flat rib lath.

Furring Channels to Receive Gypsum Lath: Space furring channels not over 16" o.c. for 3/8" thick, clip-attached gypsum lath, unless closer spacing indicated or required for fire resistance rated assembly.

INSTALLATION OF PLASTERING ACCESSORIES:

General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories to type indicated. Miter or cope accessories at corners; install with tight joints and alignment. Attach accessories securely to plaster bases to hold accessories in place and alignment during plastering.

Accessories for Gypsum Plaster: Provide the following types to comply with requirements indicated for location:

Corner Beads: Install at external corners.

Casing Beads: Install at termination of plaster work, except where plaster passes behind and is concealed by other work and where screeds, bases or metal frames and act casing beads.

Control Joints: Install at locations indicated, or if not indicated, at spacings and locations required by referenced standard and recommended by plaster manufacturer and approved by the Architect.

ACCESSORIES FOR PORTLAND CEMENT PLASTER:

Corner Reinforcement: Install at external corners.

Corner Beads: Install at external corners.

Casing Beads: Install at terminations of plaster work unless otherwise indicated.

Control Joints: Install control joints at locations indicated or if not indicated, at locations complying with the following criteria and approved by the Architect.

Where an expansion or control joint occurs in surface of construction directly behind plaster membrane.

10' - 0" in either direction.

PLASTER APPLICATION, GENERAL:

Prepare monolithic surfaces for bonded base coats and use molding compound or agent to comply with requirements of referenced plaster application standards for conditions of monolithic surfaces.

Tolerances: Do not deviate more than 1/8" in 10' - 0" from a true plane in finished plaster surfaces, as measured by a 10' - 0" straightedge placed at any location on surface.

Plaster flush with metal frames and other built-in metal items or accessories which act as a plaster ground, unless otherwise indicated. Where plaster is not terminated at metal by casing beads, cut base coat free from metal before plaster sets and groove finish coat at the junctures with metal.

Apply thickness and number of coats of plaster as indicated; or as required by referenced standards.

PORTLAND CEMENT PLASTER APPLICATION:

Portland Cement Plaster Application Standard: Apply Portland cement plaster materials, compositions, and mixes to comply with ASTM C 926.

Number of Coats: Apply Portland cement plaster, of composition indicated, to comply with the following requirements:

Use three-coat work over the following plaster bases.

Metal Lath.

Finish coat: Floated finish unless otherwise indicated; match Architect's sample for texture and color.

Moist cure portland cement plaster base and finish coats to comply with ASTM C 926, including recommendations for time between coats and curing in "Annex A2 Design Considerations"

CUTTING AND PATCHING:

Cut, patch, point-up and repair plaster as necessary to accommodate other work and to restore cracks, dents and imperfections. Repair to replace work to eliminate blisters, buckles, excessive crazing and check cracking, dry-outs, efflorescence, sweat-outs and similar defects, and where bond to the substrate has failed.

CLEANING AND PROTECTION:

Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces which are not to be plastered. Repair floors, walls and other surfaces which have not been stained, marred or otherwise damaged during the plastering work. When plastering work is completed, remove unused materials, and containers and equipment and clean floors of plaster debris.

Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures plaster work being without damage or deterioration at time of substantial completion.