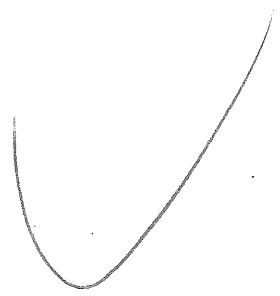


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Waynflete



## 2.2 MATERIALS

- A. Wood: Clear pine species, clear preservative treated of type suitable for transparent or opaque interior finish.
- B. Metal Cladding (Exterior Surface): Formed aluminum, factory finish with Kynar 500 or Hylar 5000 coating meeting AAMA 605.2, factory fit to profile of wood members, and exterior exposed surfaces. Black color.
- C. Operable Sash Weather Stripping: Combination of bulb seals, woven pile and vinyl jamb liners, profiled to effect weather seal.
- D. Fasteners: Stainless steel.

## 2.3 ACCESSORIES

- A. Insect Screen Frame: Rolled aluminum frame of rectangular sections; fit with adjustable hardware; nominal size similar to operable glazed unit.
- B. Insect Screens: 14/18 mesh, fiberglass strands.
- C. Fasteners: Stainless steel.

## 2.4 GLASS AND GLAZING MATERIALS

- A. Glass and Glazing Materials: Provide manufacturer's standard Low-E Argon or High Performance insulated glazing unit. Minimum thickness shall be 5/8".

## 2.5 SEALANT MATERIALS

- A. Sealant and Backing Materials: Perimeter Sealant, Type 1 as specified in Section 07920.

## 2.6 HARDWARE

- A. Awning Operator: Geared rotary handle fitted to projecting sash arms with limit stops. Provide projecting sash arms with zinc plated steel, friction pivot joints with nylon bearings, removable pivot clips for cleaning. Provide sash lock with lever handle with cam lock.

## 2.7 FABRICATION

- A. Fabricate framing , mullions and sash members with mortise and tenon or doweled joints. Glue joints to hairline fit, weather tight.
- B. Finger joints permitted in clad frame members. Finger joints not permitted in members exposed to view.
- C. Form sills in one piece. Slope sills for wash.
- D. Form glass stops of formed metal to match cladding sloped for wash.
- E. Provide weather stop flange for perimeter of unit.
- F. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet allowing installation and dynamic movement of perimeter seal.
- G. Arrange fasteners to be concealed from view.
- H. Assemble insect screen frame, miter and reinforced frame corners. Fit mesh taut into frame and secure.
- I. Single weatherstrip operable units.
- J. Factory glaze window units.

## 2.2 MATERIALS

- A. Wood: Clear pine species, clear preservative treated of type suitable for transparent or opaque interior finish.
- B. Metal Cladding (Exterior Surface): Formed aluminum, factory finish with Kynar 500 or Hylar 5000 coating meeting AAMA 605.2, factory fit to profile of wood members, and exterior exposed surfaces. Black color.
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## 2.5 SEALANT MATERIALS

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- B. Finger joints permitted in clad frame members. Finger joints not permitted in members exposed to view.
- C. Form sills in one piece. Slope sills for wash.
- D. Form glass stops of formed metal to match cladding sloped for wash.
- E. Provide weather stop flange for perimeter of unit.
- F. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet allowing installation and dynamic movement of perimeter seal.
- G. Arrange fasteners to be concealed from view.
- H. Assemble insect screen frame, miter and reinforced frame corners. Fit mesh taut into frame and secure.
- I. Single weatherstrip operable units.
- J. Factory glaze window units.

SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Hardware for wood, hollow steel, and aluminum doors.
- B. Thresholds.
- C. Weatherstripping, seals, and door gaskets.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's technical product data for each item of hardware. Include whatever information may be necessary to show compliance with requirements.
- B. Schedules: Submit final hardware schedule in manner indicated below. Coordinate hardware with doors, frames and related work to ensure proper size, thickness, hand, function and finish of hardware. Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:
  - 1. Type, style, function, size and finish of each hardware item.
  - 2. Name and manufacturer of each item.
  - 3. Fastenings and other pertinent information.
  - 4. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
  - 5. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
  - 6. Mounting locations for hardware.
  - 7. Keying information.
- C. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with the following requirements:
  - 8. AWI.
  - 9. BHMA A156 series.
  - 10. DHI - A115 series.
  - 11. DHI - WDHS.3.
  - 12. NFPA 80.
  - 13. NFPA 101.
  - 14. NFPA 252.
  - 15. UL 10B.
  - 16. UL 305.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
- C. Hardware Supplier Qualifications: Company specializing in supplying institutional door hardware with 3 years experience.



1.4 REGULATORY REQUIREMENTS

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories, Inc., as suitable for the purpose specified and indicated.

1.5 WARRANTY

- A. Provide five year manufacturer warranty for door closers.

1.6 MAINTENANCE PRODUCTS

- A. Provide special wrenches and tools applicable to each different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 PRODUCTS

2.1 SCHEDULED HARDWARE:

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is indicated in the Finish Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following.
- B. Manufacturer's Product Designations: One or more manufacturers are listed for each hardware type required. An asterisk (\*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in this section.
- C. ANSI/BHMA designations used elsewhere in this section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this section.
1. Butts and Hinges: ANSI A156.1 (BHMA 101)
  2. Locks & Lock Trim: ANSI A156.2 (BHMA 601)
  3. Exit Devices: ANSI A156.3 (BHMA 701)
  4. Door Controls - Closers: ANSI A156.4 (BHMA 301)
  5. Auxiliary Locks: ANSI A 156.5 (GHMA 501)
  6. Template Hinge Dimensions: ANSI A156.7
  7. Door Controls - Overhead Holders: ANSI A156.8 (BHMA 311)
  8. Mortise Locks & Latches: ANSI A156.13 (BHMA 621)
  9. Auxiliary Hardware: ANSI A156.16 (BHMA 1201)
  10. Materials & Finishes: ANSI A156.18 (BHMA 1301)

2.2 MATERIALS AND FABRICATION:

- A. General:
1. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
  2. 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 nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.
    - a. Manufacturer's identification will be permitted on rim of lock cylinders only.
- B. 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 the 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

2.8 FINISHES

- A. Exterior Surfaces: Factory painted of color as selected by the Architect.
- B. Interior Surfaces: Painted as specified in Section 09900.
- C. Screens: Match window color.
- D. Operators: Manufacturer's standard baked enamel.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install window frames, glass and glazing and hardware in accordance with manufacturer's instructions.
- B. Install perimeter sealant, backing materials, and installation criteria in accordance with Section 07900.

3.2 ERECTION TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft (1.5 mm/m) non-cumulative or 1/8 inches per 10 ft (3 mm/3 m), whichever is less.

3.3 SCHEDULES

- A. Refer to Window Schedule.

END OF SECTION

1.4 REGULATORY REQUIREMENTS

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories, Inc., as suitable for the purpose specified and indicated.

1.5 WARRANTY

- A. Provide five year manufacturer warranty for door closers.

1.6 MAINTENANCE PRODUCTS

- A. Provide special wrenches and tools applicable to each different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 PRODUCTS

2.1 SCHEDULED HARDWARE:

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is indicated in the Finish Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following.
- B. Manufacturer's Product Designations: One or more manufacturers are listed for each hardware type required. An asterisk (\*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in this section.
- C. ANSI/BHMA designations used elsewhere in this section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this section.
  - 1. Butts and Hinges: ANSI A156.1 (BHMA 101)
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  - 5. Auxiliary Locks: ANSI A 156.5 (GHMA 501)
  - 6. Template Hinge Dimensions: ANSI A156.7
  - 7. Door Controls - Overhead Holders: ANSI A156.8 (BHMA 311)
  - 8. Mortise Locks & Latches: ANSI A156.13 (BHMA 621)
  - 9. Auxiliary Hardware: ANSI A156.16 (BHMA 1201)
  - 10. Materials & Finishes: ANSI A156.18 (BHMA 1301)

2.2 MATERIALS AND FABRICATION:

- A. General:
  - 1. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
  - 2. 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 nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.
    - a. Manufacturer's identification will be permitted on rim of lock cylinders only.
- B. 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 the 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

- C. 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.
- D. 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 finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
- E. Provide concealed fasteners for hardware units which are exposed when door is closed, except to the extent no standard units of the 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.
- F. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.3 HINGES, BUTTS AND PIVOTS:

- A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template- produced units.
- B. 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 or pivots.
- C. Hinges: All hinges for this project shall be steel, stainless steel, solid bronze, ball bearing type except as otherwise noted.
- D. The following is a guide for hinge size and type required for this project.

		Manufacturer	Interior:	Exterior
1-3/4" Doors up to 3'-0" wide	a.	Stanley	FBB179-4 1/2"	FBB191-4 1/2"
	b.	Hager	BB1279-4 1/2"	BB1191-4 1/2"
	c.	McKinney	TA-TB2714-4 1/2"	TA-TB2314-4 1/2"
1-3/4" Doors over 3'-0" wide	a.	Stanley	FBB168-4 1/2"	FBB199-4 1/2"
	b.	Hager	BB1168-4 1/2"	BB1199-4 1/2"
	c.	McKinney	T4A-T4B3786-4 1/2"	T4A-T4B3386-4 1/2"

1. Width of hinges shall be sufficient to clear all trim.
2. Number of hinges: Provide two hinges for each door leaf up to and including five feet (5'-0") in height. An additional hinge shall be required for each additional two and one half feet (2'-6") or fraction thereof. Doors 43" to 47" wide by 7'-0" high shall receive four hinges per leaf.
3. Doors so indicated shall be furnished with non-removable pins (NRP).

2.4 KEYING:

- A. General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.
- B. Review the keying system with the Owner and provide the type required (master, grandmaster or great-grandmaster),(system shall be integrated with Owner's existing system).
- C. Comply with Owner's instructions for masterkeying 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.

1. Permanently inscribe each key with number or lock that identifies cylinder manufacturer key symbol, and notation "DO NOT DUPLICATE".

D. Key Material: Provide keys of nickel silver only.

E. Key Quantity: Furnish 3 change keys for each lock; 6 master keys for each master system; and 6 grandmaster keys for each grandmaster system.

1. Furnish one extra blank for each lock.
2. Deliver keys to Owner's representative.

2.5 HEAVY DUTY CYLINDRICAL OR BORED LOCKS:

A. Locksets for this project shall be heavy duty bored or cylindrical type.

B. The following is a list of manufacturers and designs acceptable for this project:

1. Sargent 10 Line            LL Design
2. Schlage D Series        RHO Design
3. Corbin/Ruswin CL3400   NZD Design

C. Strikes for metal frames shall conform to ANSI standard A115.2 and shall be 4 7/8" x 1 1/4" with curved lip. Where wood frames are provided, furnish a standard 2 3/4" x 1 1/8" strike with, wrought metal box, and proper length lip to protect wood trim.

D. Locks shall be manufactured and supplied by the same manufacturers. They shall be a recognized and reputable lock manufacturer.

E. Cylinders for bored or cylindrical locks shall be 6 pin tumbler, solid brass, with nickel silver keys. See "Keying Section for masterkey information.

F. The following is a list of lock functions as indicated under "hardware sets":

FUNCTION	SARGENT	SCHLAGE	CORBIN/RUSWIN
(1)	04	80	57
(2)	05	53	51
(3)	15	10	10
(4)	37	70	55
(5)	16	60	20
(6)	65	40	72

2.6 MAG LOCK KITS

A. Retrofit kit for existing doors, "Install-A-Lock", model 4-52.

2.7 EXIT DEVICES

A. All exit devices for this project shall be one of the following:

1. The 80 Series exit device by Sargent & Co.
2. Precision Apex Series
3. 98 Series by Von Duprin Division

B. All exit devices, regardless of function, except for fire rated devices, shall have one point cylinder dogging. The cylinder for cylinder dogging shall be a six (6) pin cylinder keyed to the building masterkey system as specified under Section, "Keying".

C. Trim for exit devices shall be one of the following as specified: (a) Pull handles as specified in Section Push and Pull Bars. (b) Cast stainless steel lever handle with cast escutcheon for all fire rated doors.

1. Permanently inscribe each key with number or lock that identifies cylinder manufacturer key symbol, and notation "DO NOT DUPLICATE".

D. Key Material: Provide keys of nickel silver only.

E. Key Quantity: Furnish 3 change keys for each lock; 6 master keys for each master system; and 6 grandmaster keys for each grandmaster system.

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C. Strikes for metal frames shall conform to ANSI standard A115.2 and shall be 4 7/8" x 1 1/4" with curved lip. Where wood frames are provided, furnish a standard 2 3/4" x 1 1/8" strike with, wrought metal box, and proper length lip to protect wood trim.

D. Locks shall be manufactured and supplied by the same manufacturers. They shall be a recognized and reputable lock manufacturer.

E. Cylinders for bored or cylindrical locks shall be 6 pin tumbler, solid brass, with nickel silver keys. See "Keying Section for masterkey information.

F. The following is a list of lock functions as indicated under "hardware sets":

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3. 98 Series by Von Duprin Division

B. All exit devices, regardless of function, except for fire rated devices, shall have one point cylinder dogging. The cylinder for cylinder dogging shall be a six (6) pin cylinder keyed to the building masterkey system as specified under Section, "Keying".

C. Trim for exit devices shall be one of the following as specified: (a) Pull handles as specified in Section Push and Pull Bars. (b) Cast stainless steel lever handle with cast escutcheon for all fire rated doors.

- D. Devices for fire rated doors shall be listed by Underwriters Laboratories for 3 hour A label doors. Exit devices with ratings of less than 3 hours or listed with Laboratories other than Underwriters Laboratories shall not be considered acceptable for this project. All fire exit devices required to be installed on fire rated doors shall carry a supplementary label bearing the marking "Fire Doors To Be Equipped With Fire Exit Hardware".
- E. Provide rim exit devices for single doors and mortise lock devices with open back strike and vertical rod devices for pairs of doors. Provide narrow design where stile of door will not permit use of standard design.

2.8 PUSH/PULL UNITS:

- A. Pulls for doors shall be 1" diameter solid stainless steel round bar, 10" center to center, with a projection of 2-1/2", and a clearance of 1-1/2". Fastening shall be with through bolts, one at each base.
- B. Push bars where specified, shall be 1" diameter solid stainless steel round bar with a projection of 2-1/2" and a 1-1/2" clearance. Bases for each push bar shall span the door width and be centered on each door stile. Where used on flush doors, the center to center dimensions shall be equal to the door width minus the standard lock backset for each stile.

2.9 ELECTROMAGNETIC DOOR RELEASE:

- A. Where called for in the hardware set numbers, provide a wall or floor mounted electromagnetic door release.
- B. Provide 120 volt unit with transformers. The hardware supplier shall verify the voltage required for this item.
- C. Products of the following manufacturers will be acceptable for this project:
 

1.	Rixon-Firemark	990 Series
2.	Sargent	1500 Series
3.	Norton Door Controls	6900 Series

2.10 CLOSERS AND DOOR CONTROL DEVICES:

- A. All door closers for this project shall be the product of one manufacturer, and shall have cast iron cases with full cover and be full rack and pinion type construction, non-handed and non-sized with adjustable back-check effective at 70 deg. for both standard and parallel arm mounting.
- B. The following products will be acceptable:
 

1.	Corbin/ Russwin	- DC2000
2.	LCN	- 1461
3.	Sargent	- 1251
- C. The hardware contractor indicate in the hardware schedule the require degree of opening for each door. If door swing is more than 140 deg., parallel arm type closers shall be used. Door closers on corner brackets, or top jamb application shall not be permitted.
- D. For all exterior, outswing doors and other openings as specified, provide door closures with cush-n-stop arms. Arms shall be heavy forged steel, with soffit plates attached to the frame by six (6) screws. Arm shall have a positive stop bracket with adjustable tension hold open feature with slotted screw adjustment providing adjustment range from no hold open to full restraint of door movement. (cush-n-stop arms shall not be used on aluminum entrance doors).
- E. Where door closers require delayed action feature, provide closers as specified, but having separate delayed action valve, permitting adjustment of delayed action feature. Closer shall close at a controlled rate of speed through the delayed action cycle range.
- F. Where top rail of door is insufficient in height to mount closer, drop brackets shall be provided.

2.11 DOOR TRIM UNITS:

- A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, and similar units); either machine screws or self-tapping screw.
- B. Fabricate edge trim not more than 1/2" nor less than 1/16" smaller in length than door dimension.
- C. Fabricate protection plates (push, kick or mop) as follows:
  - 1. Push Plates shall be .050 gauge, solid stainless steel, 16" high by 8" wide.
  - 2. Kick Plates shall be 1/8" stainless steel, 8" high by 1-1/2" less than door width for single doors and 1" less than door width for pairs of doors. Kick plates shall be applied to push side of all doors where noted.

2.12 WEATHERSTRIPPING:

- A. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf. Provide type, sizes and profiles shown or scheduled. Provide noncorrosive fasteners as recommended by manufacturer for application indicated.
- B. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.
- C. Weatherstripping at Jambs and Heads:
- D. Provide bumper-type resilient insert and metal retainer strips, surface-applied to frame unless shown as mortised or semi-mortised, of following metal, finish and resilient bumper material:
  - 1. Extruded aluminum perimeter seal with color anodized finish as selected by Architect from manufacturer's standard color range; 0.062" minimum thickness of main walls and flanges. Fasteners shall be stainless steel sheet metal screws.
  - 2. Closed-cell sponge neoprene insert, conforming to MIL R 6130A Type II, Grade C.
  - 3. Neoprene seals shall be airfoil design to permit full and positive closure between jamb and door.
  - 4. Where door comes in contact with the frame, maximum projection for continuous aluminum weatherstripping brackets shall be no more than 1/4".
- E. Weatherstripping (gasketing material) shall UL classified application on fire door frames, for opening rated up to 3 hours.
- F. Weatherstripping at Door Bottoms:
  - 1. Surface applied brush type seal similar to Nation Guard 600A.

2.13 SILENCERS

- A. Silencers for Wood Door Frames: BHMA Grade 1; neoprene or rubber, minimum 5/8 by 3/4 inch (16 by 19 mm); fabricated for drilled-in application to frame.
- B. Silencers for Metal Door Frames: BHMA Grade 1; neoprene or rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame.

2.14 THRESHOLDS:

- A. For all exterior doors not requiring floor closers, provide a flat extruded or cast aluminum threshold to match frame width. Threshold shall be 1/2" high and shall have beveled edges and integral weatherstrip. Anchor thresholds with no less than 4 machine screw anchors for 3'-0" lengths. Provide non-ferrous solid brass or stainless steel screws. Provide National Guard Products #896 or similar product.
- B. Provide thresholds at interior doors as shown on door schedules and details.

2.15 DOOR STOPS:

- A. Hardware supplier shall supply door stops for all doors in accordance with the following requirements.



2.11 DOOR TRIM UNITS:

- A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, and similar units); either machine screws or self-tapping screw.
- B. Fabricate edge trim not more than 1/2" nor less than 1/16" smaller in length than door dimension.
- C. Fabricate protection plates (push, kick or mop) as follows:
  - 1. Push Plates shall be .050 gauge, solid stainless steel, 16" high by 8" wide.
  - 2. Kick Plates shall be 1/8" stainless steel, 8" high by 1-1/2" less than door width for single doors and 1" less than door width for pairs of doors. Kick plates shall be applied to push side of all doors where noted.

2.12 WEATHERSTRIPPING:

- A. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf. Provide type, sizes and profiles shown or scheduled. Provide noncorrosive fasteners as recommended by manufacturer for application indicated.
- B. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.
- C. Weatherstripping at Jambs and Heads:
- D. Provide bumper-type resilient insert and metal retainer strips, surface-applied to frame unless shown as mortised or semi-mortised, of following metal, finish and resilient bumper material:
  - 1. Extruded aluminum perimeter seal with color anodized finish as selected by Architect from manufacturer's standard color range; 0.062" minimum thickness of main walls and flanges. Fasteners shall be stainless steel sheet metal screws.
  - 2. Closed-cell sponge neoprene insert, conforming to MIL R 6130A Type II, Grade C.
  - 3. Neoprene seals shall be airfoil design to permit full and positive closure between jamb and door.
  - 4. Where door comes in contact with the frame, maximum projection for continuous aluminum weatherstripping brackets shall be no more than 1/4".
- E. Weatherstripping (gasketing material) shall UL classified application on fire door frames, for opening rated up to 3 hours.
- F. Weatherstripping at Door Bottoms:
  - 1. Surface applied brush type seal similar to Nation Guard 600A.

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- A. Silencers for Wood Door Frames: BHMA Grade 1; neoprene or rubber, minimum 5/8 by 3/4 inch (16 by 19 mm); fabricated for drilled-in application to frame.
- B. Silencers for Metal Door Frames: BHMA Grade 1; neoprene or rubber, minimum diameter 1/2 inch (13 mm); fabricated for drilled-in application to frame.

2.14 THRESHOLDS:

- A. For all exterior doors not requiring floor closers, provide a flat extruded or cast aluminum threshold to match frame width. Threshold shall be 1/2" high and shall have beveled edges and integral weatherstrip. Anchor thresholds with no less than 4 machine screw anchors for 3'-0" lengths. Provide non-ferrous solid brass or stainless steel screws. Provide National Guard Products #896 or similar product.
- B. Provide thresholds at interior doors as shown on door schedules and details.

2.15 DOOR STOPS:

- A. Hardware supplier shall supply door stops for all doors in accordance with the following requirements.

- B. Wall type bumpers with concealed type flange shall be used where ever possible and shall be one of the following:
  1. Ives - 407 1/2
  2. Door Controls - 3211T
  3. Rockwood - 409
- C. Where wall type bumpers cannot be used, provide dome type, floor mounted stops of the proper height as follows:
  1. Ives - 436, 438
  2. Door Controls - 3310X, 3320X
  3. Rockwood - 440, 442
- D. Exterior doors striking masonry and doors specified to have door stops and holders, shall have cast bronze wall or floor type door stops with hook or staple type holders to selectively hold doors in open position. The following will be acceptable:
  1. Ives - 445, 446
  2. Door Controls - 3237X, 3347X
  3. Rockwood - 473, 477
- E. 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 or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch-lock sets) for color and texture.

2.16 FINISH:

- A. Provide finishes which match those established by BHMA or, if none established, match the Architect's sample.
- B. 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.
- C. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer".
- D. The designations used in schedules and elsewhere to indicate hardware finished are those listed in ANSI A156.18 "Materials & Finishes Standard", including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
- E. Provide the following finishes:
 

1. Butts and Hinges:	10B
2. Locks & Lock Trim:	10B
3. Exit Devices:	10B
4. Door Controls - Closers:	Sprayed Bronze Finish
5. Mortise Locks & Latches:	10B
6. Door Stops	10B
7. Weatherstripping	Bronze Aluminum
8. Threshold	Bronze Aluminum
9. Kickplates	10B
10. Pulls	10B

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions.
- B. Use templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item, refer to:
  - 1. DHI WDMS.3.
  - 2. DHI A115 Series.
- D. Furnish storefront supplier with templates required for operation, reinforcing and installation.

3.2 ADJUSTING

- A. Adjust hardware for smooth operation.

3.3 SCHEDULES

- A. GENERAL: Hardware listed indicates items required for each opening. It is the bidders responsibility to accurately furnish the proper quantities, items, sizes, weights and functions as required by the plans and this specification. If an opening has, through error, been omitted from the following listing, it shall be the bidders responsibility to supply hardware of equivalent quality and quantity, as that which is specified for a comparable opening.
- B. Hardware supplier shall furnish detailed hardware schedule based on performance requirements listed in this schedule.

HW1

Door 114.1

Exit Devices  
Offset Pulls  
Closer (cush n stop)  
Floor Stop  
Door Bottom Sweeps

Balance of hardware by aluminum door supplier.

HW2

Door 006.1, 113.2

Hinges  
Exit Device  
Closer  
Weatherstripping  
Door Bottom  
Kickplates  
Silencers

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions.
- B. Use templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item, refer to:
  - 1. DHI WDMS.3.
  - 2. DHI A115 Series.
- D. Furnish storefront supplier with templates required for operation, reinforcing and installation.

### 3.2 ADJUSTING

- A. Adjust hardware for smooth operation.

### 3.3 SCHEDULES

- A. **GENERAL:** Hardware listed indicates items required for each opening. It is the bidders responsibility to accurately furnish the proper quantities, items, sizes, weights and functions as required by the plans and this specification. If an opening has, through error, been omitted from the following listing, it shall be the bidders responsibility to supply hardware of equivalent quality and quantity, as that which is specified for a comparable opening.
- B. Hardware supplier shall furnish detailed hardware schedule based on performance requirements listed in this schedule.

#### HW1

Door 114.1

Exit Devices  
Offset Pulls  
Closer (cush n stop)  
Floor Stop  
Door Bottom Sweeps

Balance of hardware by aluminum door supplier.

#### HW2

Door 006.1, 113.2

Hinges  
Exit Device  
Closer  
Weatherstripping  
Door Bottom  
Kickplates  
Silencers

HW3

Doors 005.1, 105.1

Hinges

Closer

Lockset (function 1)

Kick Plates

Door Stops

Silencers

HW4

Doors 003.1, 107.1, 108.1, 221.1, 306.1, 316.1

Hinges

Lockset (function 6)

Door Stops

Silencers

HW5

Doors 113.1, 213.1, 305.1, 307.1

Hinges

Closer

Fire Rated Exit Device

Kickplates

Door Stops

Smoke Seals

HW6

Doors 102.1, 119.1, 203.1, 205.1, 205.2, 219.1, 307.2, 308.1

Hinges

Closer

Fire Rated Exit Device

Kickplates

Door Stops

HW7

Doors 001.1, 002.1, 101.2, 118.1, 201.1, 204.1, 207.1, 214.1, 301.1, 302.1, 304.1, 310.1,

Hinges

Locksets (function 4)

Door Stops

HW8

Doors 117.1, 309.1

Hinges

Closer

Lockset (function 4)

Door Stop

HW9

Existing office, toilet, and classroom doors

Mag Kit

Lockset (function 4 or 6)

HW10

Existing door E102.2

Vertical rod exit device

Closer

Weatherstripping (similar to PF 183 by National Guard Products)

END OF SECTION

HW8

Doors 117.1, 309.1

Hinges

Closer

Lockset (function 4)

Door Stop

HW9

Existing office, toilet, and classroom doors

Mag Kit

Lockset (function 4 or 6)

HW10

Existing door E102.2

Vertical rod exit device

Closer

Weatherstripping (similar to PF 183 by National Guard Products)

END OF SECTION

## SECTION 08800

### GLAZING

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Glass and glazing for hollow metal work, doors, and aluminum storefronts.

##### 1.2 PERFORMANCE REQUIREMENTS

- A. Size glass to withstand dead loads and positive and negative live loads acting normal to plane of glass to a design pressure of 30 lb/sq ft as measured in accordance with ASTM E330.
- B. Limit glass deflection to 1/175 or 3/4" whichever is less.

##### 1.3 SUBMITTALS

- A. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- B. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
- C. Samples: Submit two samples 12 x 12 inch (300 x 300 mm) in size, exemplifying glass units, coloration.
- D. Certificates: Certify that Products meet or exceed specified requirements.
- E. Manufacturer's Certificate: Certify that sealed insulated glass, meets or exceeds specified requirements.

##### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with FGMA Glazing Manual.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years experience approved by manufacturer.

##### 1.5 WARRANTY

- A. Provide a ten (10) year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement or refund of original purchase.

#### PART 2 PRODUCTS

##### 2.1 FLAT GLASS MATERIALS

- A. Manufacturers of Wire Glass:
  - 1. AFG Industries, Inc.
  - 2. Guardian Industries Corp.
  - 3. Hordis Brothers, Inc.
  - 4. Pilkington Sales (North America) Limited.
- B. Manufacturers of Fabricated Glass Products:
  - 1. Ford Motor Co., Glass Div.
  - 2. Globe Amerada Glass Co.
  - 3. Guardian Industries Corp.



4. Interpane Glass Company
5. Libbey-Owens-Ford Co.
6. PPG Industries Inc.
7. Solar Seal Co.
8. Southwall Technologies
9. Tempglass.
10. Viracon, Inc.

- C. Float Glass (Type FG-A): ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; 1/4 inch (6 mm) minimum thick.
- D. Safety Glass (Type FG-B): ASTM C1048, fully tempered, Condition A uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; conforming to ANSI Z97.1; 1/8 inch (3 mm) minimum thick.
- E. Wired Glass (Type FG-C): ASTM C1036, Type II patterned and wired flat, Class 1 translucent, Quality q8 glazing; 1/2" square mesh, 1/4 inch (6 mm) minimum thick.

## 2.2 SEALED INSULATING GLASS MATERIALS

- A. Insulated Glass Units (Type SG-A): ASTM E774 and E773; double pane with glass elastomer edge seal; outer pane of 1/8 inch clear glass, inner pane of 1/8 inch clear glass; purge interpane space with dry air; total unit thickness of 5/8 inch (16 mm) minimum.
- B. Insulated Glass Units - Low E (Type SG-B): ASTM E774 and E773; double pane with glass elastomer edge seal; outer pane of 1/8 inch clear glass, inner pane of Low E glass on clear glass, purge interpane space with dry air; total unit thickness of 1 inch (25 mm) minimum.
- C. Heat Mirror (Type SG-C): Heat Mirror 88 by Southwall Technologies. Triple pane with glass elastomer edge seal; outer pane of 1/8 inch clear glass, inner pane of 1/8 inch clear glass, middle pane of Heat Mirror Low-E film, purge interpane spaces with dry air; total unit thickness of 1 inch (25 mm) minimum.
- D. Edge Seal Material: Black color.

## 2.3 GLAZING ACCESSORIES

- A. Setting Blocks: ASTM C864 Option I, Neoprene, EPDM or Silicone, 80 to 90 Shore A durometer hardness, length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) x width of glazing rabbet space minus 1/16 inch (1.5 mm) x height to suit glazing method and pane weight and area.
- B. Spacer Shims: ASTM C864 Option I, Neoprene or Silicone, 50 to 60 Shore A durometer hardness, minimum 3 inch (75 mm) long x one half the height of the glazing stop x thickness to suit application.
- C. Glazing Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to effect an air barrier and vapor retarder seal.
- D. Glazing Gaskets: ASTM C864 Option I, Resilient polyvinyl chloride extruded shape to suit glazing channel retaining slot; black color.
- E. Glazing Clips: Manufacturer's standard type.

## 2.4 SOURCE QUALITY CONTROL AND TESTS

- A. Provide shop inspection for glass.

4. Interpane Glass Company
5. Libbey-Owens-Ford Co.
6. PPG Industries Inc.
7. Solar Seal Co.
8. Southwall Technologies
9. Tempglass.
10. Viracon, Inc.

- C. Float Glass (Type FG-A): ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; 1/4 inch (6 mm) minimum thick.
- D. Safety Glass (Type FG-B): ASTM C1048, fully tempered, Condition A uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; conforming to ANSI Z97.1; 1/8 inch (3 mm) minimum thick.
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- D. Glazing Gaskets: ASTM C864 Option I, Resilient polyvinyl chloride extruded shape to suit glazing channel retaining slot; black color.
- E. Glazing Clips: Manufacturer's standard type.

## 2.4 SOURCE QUALITY CONTROL AND TESTS

- A. Provide shop inspection for glass.

## SECTION 09210

### GYPSUM PLASTER

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Metal lath.
- B. Gypsum plastering.
- C. Veneer plaster over gypsum board.

##### 1.2 RELATED SECTIONS

- D. Section 06100 – Rough Carpentry: Wood framing and furring.
- E. Section 09250 - Gypsum Board: Metal framing.

##### 1.3 REFERENCES

- A. ASTM C35 – Specification for Inorganic Aggregates for Use in Gypsum Plaster.
- B. ASTM C587 – Specification for Gypsum Veneer Plaster.
- C. ASTM C588 – Specification for Gypsum Base Veneer Plasters.
- D. ASTM C842 – Application of Interior Gypsum Plaster.
- E. ASTM C847 – Metal Lath.
- F. ASTM C1002 – Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.

##### 1.4 SUBMITTALS

- A. Product Data: Provide data consisting of manufacturer's product specifications and installation instructions for each product, including data showing compliance with specified requirements.

##### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
- B. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes. Neatly stack gypsum lath flat to prevent deformation.

##### 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after plaster application.
- B. Ventilation: Ventilate building spaces as required to remove water in excess of that required for hydrating plaster. Begin ventilation immediately after plaster is applied and continue until it sets.
- C. Protect contiguous work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Gypsum Base for Veneer Plaster: ASTM C 588, of types and thickness' indicated below, with square or tapered long edges as standard with manufacturer, and as follows:
  - 1. Type: Type X, unless otherwise indicated.
  - 2. Thickness: 5/8 inch (15.9 mm), unless otherwise indicated.
- B. Expanded-Metal Lath: Fabricate expanded-metal lath from uncoated or zinc-coated (galvanized) steel sheet to produce lath complying with ASTM C 847 for type, configuration, and other characteristics indicated below, with uncoated steel sheet coated after fabrication into lath.
- C. Gypsum Neat Plasters:
  - 1. Two-Way Hardwall Plaster; National Gypsum Co.
  - 2. Red Top Gypaum Plaster; United States Gypsum Co.
- D. Gypsum Ready-Mixed Finish Plasters:
  - 1. Gold Bond Kal-Kote Smooth; National Gypsum Co.
  - 2. Red Top Finish; United States Gypsum Co.
- E. One-coat Gypsum Veneer Plaster: ASTM C587.
  - 1. U.S.G.: Imperial Finish Plaster.
  - 2. Gold Bond: Uni-Kal.
- F. Aggregates for Base-Coat Plasters: ASTM C 35, sand aggregate, unless otherwise indicated.
- G. Aggregates for Finish-Coat Plaster with Floated Finish: ASTM C 35; graded per ASTM C 842, sand aggregate.
- H. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

### 2.2 MIX DESIGN

- A. Plaster Base-Coat Compositions: Comply with ASTM C 842 and manufacturer's written instructions for plaster base-coat proportions that correspond to application methods and plaster bases indicated below:
  - 1. Three-Coat Work over Metal Lath: Base coats as indicated below:
    - a. Brown Coat: Gypsum neat plaster with job-mixed sand.
    - b. Scratch Coat: Gypsum neat plaster with job-mixed sand.
- B. Finish Coats: Proportion materials in parts by dry weight for finish coats to comply with the following requirements for each type of finish coat and texture indicated:
  - 1. Troweled Finishes: Finish-coat proportion as indicated below:
    - a. Gypsum Gauging Plaster: 1 part plaster to 2 parts lime.
- C. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

### 2.3 ACCESSORIES

- A. Metal Cornerbeads: Type as indicated below, fabricated from zinc-coated (galvanized) steel.
  - 1. Type: Small nose with expanded flanges, unless otherwise indicated.
- B. Casing Beads: Square-edged style, with short or expanded flanges to suit kinds of plaster bases indicated; of the following material:
  - 1. Material: Zinc-coated (galvanized) steel.
- C. Steel drill screws complying with ASTM C 1002 for fastening metal or gypsum lath to wood or steel members less than 0.033 inch (0.84 mm) thick.

PART 3 EXECUTION

3.1 INSTALLATION - EXTERIOR DRY METHOD (TAPE AND GASKET SPLINE GLAZING)

- A. Perform Work in accordance with FGMA Glazing Manual.

3.2 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

- A. Perform Work in accordance with FGMA Glazing Manual.

3.3 SCHEDULE

- A. Exterior Storefront at Entrance 114: Type SG-C, exterior dry method.
- B. Other Storefronts: Types SG-B, exterior dry method.
- C. Exterior Hollow Metal Doors: Type SG-A, exterior dry method.
- D. Interior Doors and Windows: Types FG-A, FG-B and FG-C, as scheduled, interior dry method.

END OF SECTION

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify substrate conditions.

### 3.2 CUTTING AND PATCHING

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

### 3.3 INSTALLATION OF METAL LATH

- A. Install expanded-metal lath for applications where plaster base coats are required. Provide appropriate type, configuration, and weight of metal lath selected from materials indicated that comply with referenced lathing installation standards.

### 3.4 INSTALLATION OF PLASTERING ACCESSORIES

- A. Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and in alignment during plastering.
- B. Accessories: Provide the following types to comply with requirements indicated for location:
  - 1. Cornerbeads: Install at external corners.
  - 2. Casing Beads: Install at terminations of plaster work, except where plaster passes behind and is concealed by other work and where metal screeds, bases, or frames act as casing beads.

### 3.5 GYPSUM PLASTER APPLICATION – GENERAL

- A. Apply gypsum plaster in accordance with manufacturer's instructions.
- B. Prepare monolithic surfaces for bonded base coats and use bonding compound to comply with requirements of referenced plaster application standards for conditioning monolithic surfaces.
- C. Tolerances: Do not deviate more than plus or minus 1/8 inch in 10 feet (3 mm in 3 m) from a true plane in finished plaster surfaces, as measured by a 10-foot (3-m) straightedge placed at any location on surface.
- D. Grout hollow-metal frames, bases, and similar work occurring in plastered areas, with base-coat plaster material, before lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout at least 6 inches (152 mm) at each jamb anchor.
- E. Sequence plaster application with installation and protection of other work so that neither will be damaged by installation of other.
- F. Apply thickness' and number of coats of plaster as indicated or as required by referenced standards.

### 3.6 PLASTER APPLICATION

- A. Plaster Application Standard: Apply plaster materials, composition, mixes, and finishes indicated to comply with ASTM C 842.
- B. Apply gypsum veneer plaster in accordance with manufacturer's instructions.

- C. Number of Coats: Apply plaster of composition indicated, to comply with the following requirements:
  - 1. Three Coats: Over metal lath.
  - 2. One Coat: Veneer plaster over gypsum board.
- D. Finish Coats: Apply finish coats to comply with the following requirements:
  - 1. Smooth, troweled finish, unless otherwise indicated.

3.7 CLEANING AND PROTECTING

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces not to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering. When plastering is completed, remove unused materials, containers, and equipment and clean floors of plaster debris.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure plaster work is without damage or deterioration at the time of Substantial Completion.

END OF SECTION

SECTION 09250

GYPSUM BOARD

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Gypsum board and joint treatment.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Acoustic insulation.

1.2 SUBMITTALS

- A. Product Data: Provide data on metal framing, gypsum board, joint tape and accessories.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance GA-201, GA-214, GA-216 and GA-600.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years experience.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Metal Framing
  - 1. Industries, Inc.
  - 2. Marino Industries Corp.
  - 3. Superior, Inc.
  - 4. Unimast, Inc.
- B. Gypsum Board System
  - 5. American Gypsum Co.
  - 6. Centrex
  - 7. Georgia-Pacific Corp.
  - 8. Gold Bond Building Products Div., National Gypsum Co.
  - 9. United States Gypsum Co.

2.2 FRAMING MATERIALS

- A. Studs and Tracks: ASTM C645; galvanized sheet steel, 25, 20 and 18 gage (.55, .9 and 1.2 mm) thick, C shape.
- B. Furring, Framing, and Accessories: ASTM C645.
- C. Fasteners: ASTM C514.
- D. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.



## 2.3 GYPSUM BOARD MATERIALS

- A. Fire Rated Gypsum Board: ASTM C36; fire resistive type, UL or WH rated; 5/8 inch (16 mm) thick, maximum available length in place; ends square cut, tapered edges.
- B. Moisture Resistant Gypsum Board: ASTM C630; 5/8 inch (16 mm) thick, maximum available length in place; ends square cut, tapered edges.
- C. Exterior Gypsum Soffit Board: ASTM C931; fire rated type, 5/8 inch (16 mm) thick, maximum available length in place; ends square cut, tapered edges.

## 2.4 ACCESSORIES

- A. Acoustic Insulation: See Section 07210 - Building Insulation.
- B. Acoustic Sealant: See Section 07920 - Joint Sealants.
- C. Deflection Track: Manufacturer's top runner complying with the requirements of ASTM C645 and with 2 inch (50 mm) deep flanges.
- D. Deflection and Firestop Track: Top runner designed to allow partition heads to expand and contract with movement of structure above while maintaining continuity of the assembly. Provide "Fire Trak" manufactured by Fire Trak Corp., or approved substitute.
- E. Corner Beads: Metal.
- F. Edge Trim: GA-201 and GA-216; Type LC bead.
- G. Joint Materials: ASTM C475; reinforcing tape, joint compound, adhesive, and water.
- H. Fasteners: ASTM C1002, Type S12.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Above-ceiling review: Prior to the installation of ceilings, provide a review of construction completion for fire stopping, mechanical, electrical and other items that will not be visible once the ceilings have been installed.

### 3.2 METAL STUD INSTALLATION

- A. Install studs in accordance with manufacturer's instructions.
- B. Metal Stud Spacing: 16 inches (400 mm) on center unless loading requirements dictate smaller spacing.
- C. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed by structural movement. Comply with details on the drawings.
- D. Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
- E. Door Opening Framing: Install double studs at door frame jambs.

### 3.3 WALL FURRING INSTALLATION

- A. Erect wall furring for direct attachment to concrete masonry and/or concrete walls as indicated.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Gypsum Base for Veneer Plaster: ASTM C 588, of types and thickness' indicated below, with square or tapered long edges as standard with manufacturer, and as follows:
  - 1. Type: Type X, unless otherwise indicated.
  - 2. Thickness: 5/8 inch (15.9 mm), unless otherwise indicated.
- B. Expanded-Metal Lath: Fabricate expanded-metal lath from uncoated or zinc-coated (galvanized) steel sheet to produce lath complying with ASTM C 847 for type, configuration, and other characteristics indicated below, with uncoated steel sheet coated after fabrication into lath.
- C. Gypsum Neat Plasters:
  - 1. Two-Way Hardwall Plaster; National Gypsum Co.
  - 2. Red Top Gypaum Plaster; United States Gypsum Co.
- D. Gypsum Ready-Mixed Finish Plasters:
  - 1. Gold Bond Kal-Kote Smooth; National Gypsum Co.
  - 2. Red Top Finish; United States Gypsum Co.
- E. One-coat Gypsum Veneer Plaster: ASTM C587.
  - 1. U.S.G.: Imperial Finish Plaster.
  - 2. Gold Bond: Uni-Kal.
- F. Aggregates for Base-Coat Plasters: ASTM C 35, sand aggregate, unless otherwise indicated.
- G. Aggregates for Finish-Coat Plaster with Floated Finish: ASTM C 35; graded per ASTM C 842, sand aggregate.
- H. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

### 2.2 MIX DESIGN

- A. Plaster Base-Coat Compositions: Comply with ASTM C 842 and manufacturer's written instructions for plaster base-coat proportions that correspond to application methods and plaster bases indicated below:
  - 1. Three-Coat Work over Metal Lath: Base coats as indicated below:
    - a. Brown Coat: Gypsum neat plaster with job-mixed sand.
    - b. Scratch Coat: Gypsum neat plaster with job-mixed sand.
- B. Finish Coats: Proportion materials in parts by dry weight for finish coats to comply with the following requirements for each type of finish coat and texture indicated:
  - 1. Troweled Finishes: Finish-coat proportion as indicated below:
    - a. Gypsum Gauging Plaster: 1 part plaster to 2 parts lime.
- C. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

### 2.3 ACCESSORIES

- A. Metal Cornerbeads: Type as indicated below, fabricated from zinc-coated (galvanized) steel.
  - 1. Type: Small nose with expanded flanges, unless otherwise indicated.
- B. Casing Beads: Square-edged style, with short or expanded flanges to suit kinds of plaster bases indicated; of the following material:
  - 1. Material: Zinc-coated (galvanized) steel.
- C. Steel drill screws complying with ASTM C 1002 for fastening metal or gypsum lath to wood or steel members less than 0.033 inch (0.84 mm) thick.

## SECTION 09510

### ACOUSTICAL CEILINGS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Suspended metal grid ceiling system and perimeter trim.
- B. Acoustic panels.

##### 1.2 SYSTEM DESCRIPTION

- A. Suspension System: Rigidly secure acoustic ceiling system including integral mechanical and electrical components with maximum deflection of 1:360.

##### 1.3 SUBMITTALS

- A. Product Data: Provide data on metal grid system components and acoustic units.
- B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other work or ceiling finishes, interrelation of mechanical and electrical items related to system.
- C. Samples: Submit two samples illustrating material and finish of acoustic units.
- D. Samples: Submit two samples of suspension system main runner, cross runner and perimeter molding.

##### 1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire rated assembly.
- B. Conform to BOCA, ASTM and ANSI standards for seismic restraints.

##### 1.5 EXTRA MATERIALS

- A. Provide one box of each type panels to Owner.

#### PART 2 PRODUCTS

##### 2.1 SUSPENSION SYSTEM MATERIALS

- A. Manufacturers:
  - 1. Chicago Metallic Corp.
  - 2. Donn Corp.
  - 3. National Rolling Mills.
  - 4. Armstrong World Industries.
- B. Non-fire Rated Grid: ASTM C635, intermediate duty; exposed T; components die cut and interlocking.
- C. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
- D. Exposed Grid Surface Width: 15/16 inch (24 mm).
- E. Grid Finish: White.
- F. Accessories: Stabilizer bars, clips, splices, perimeter moldings, and hold down clips required for suspended grid system.

- G. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

## 2.2 ACOUSTIC UNIT MATERIALS

### A. Manufacturers:

1. Armstrong World Industries.
2. U.S.G.

### B. Acoustic Tile: ASTM E1264, conforming to the following:

1. Type 2: 24" x 48" x 5/8" with square edge; STC 35-39; NRC .50-.60; Color: white. Provide "Cortega Minaboard" as manufactured by Armstrong World Industries or "Omni Fissured" by U.S.G..

## 2.3 ACCESSORIES

- A. Acoustic Sealant For Perimeter Moldings: Specified in Section 07920.
- B. Touch-up Paint: Type and color to match acoustic and grid units.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Above-ceiling review: Prior to the installation of ceilings, provide a review of construction completion for fire stopping, mechanical, electrical and other items that will not be visible once the ceilings have been installed.

### 3.2 INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM

- A. Install suspension system in accordance with manufacturer's instructions and as supplemented in this section.
- B. Install system in accordance with ASTM E580.
- C. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- D. Suspension Systems: shall be installed in compliance with ASTM C 636 and E 580-91 (seismic restraint), with hangers supported only from building structural members. Locate hangers not less than 6" from 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".

### 3.3 INSTALLATION - ACOUSTIC UNITS

- A. Install acoustic units in accordance with manufacturer's instructions.
- B. Cutting Acoustic Units:
  1. Cut to fit irregular grid and perimeter edge trim.
- C. Install hold-down clips to retain panels tight to grid system within 10 ft (3 m) of an exterior door.

### 3.4 ERECTION TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

- C. Number of Coats: Apply plaster of composition indicated, to comply with the following requirements:
  - 1. Three Coats: Over metal lath.
  - 2. One Coat: Veneer plaster over gypsum board.
- D. Finish Coats: Apply finish coats to comply with the following requirements:
  - 1. Smooth, troweled finish, unless otherwise indicated.

3.7 CLEANING AND PROTECTING

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces not to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering. When plastering is completed, remove unused materials, containers, and equipment and clean floors of plaster debris.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure plaster work is without damage or deterioration at the time of Substantial Completion.

END OF SECTION

## SECTION 09650

### RESILIENT FLOORING

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Resilient stair treads and risers.

##### 1.2 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- B. Samples: Submit two samples, 2 X 2 inch (50 X 50 mm) in size illustrating color and pattern for each floor material for each color specified.
- C. Submit two 6 inch (150 mm) long samples of base and stair material for each color specified.
- D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

##### 1.3 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame/smoke rating requirements of 75/450 in accordance with ASTM E84.
- B. Conform to NFPA 258, ASTM E 662 for smoke density of not more than 450.

##### 1.4 EXTRA MATERIALS

- A. Provide one box of each type and color of flooring, 50 lineal feet (16.4 m) of each color and size of base specified.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS - TILE FLOORING

- A. Vinyl Composition Tile: ASTM F1066:
  - 1. Size: 12 x 12 inch (300 x 300 mm)
  - 2. Thickness: 1/8 inch (3 mm)
  - 3. Manufacturers:
    - a. Armstrong World Industries: Style; Field tile, Standard Excelon "Imperial". Accent tile, Premium Excelon "Canvas".
    - b. Mannington Commercial: Style; Field tile, Essentials. Accent tile, Inspirations.
    - c. Tarkett: Style; Field tile, Keystones and/or Signals. Accent tile, Concert and/or Collage.
- B. Rubber Tile: ASTM F1344 Class 1A:
  - 1. Size: 17-13/16 x 17-13/16 inch (445 x 445 mm)
  - 2. Thickness: 0.125 inch (3 mm)

3. Design: .025" raised circle
4. Manufacturers:
  - a. Johnsonite; RT Round.
  - b. Roppe: Low Profile Raised Circular Design

## 2.2 MATERIALS - STAIR COVERING

- A. Stair Treads: FS RR-T-650, Type B, Class 2; full width and depth of stair tread in one piece; return down edge of tread 1-1/2 inch (38 mm) with tapered thickness, 2 inch wide abrasive strip at nosing.
  1. Material: rubber
  2. Thickness: 1/4 inch (6 mm)
  3. Pattern: Raised
  4. Design: Disc
  5. Manufacturers:
    - a. Johnsonite: VIRH Round
    - b. Roppe: No. 98 Raised Circular Vantage with Relief Cut and nosing strip.
- B. Stair Risers: Maintain height and length in one piece:
  1. Sheet Material: rubber
  2. Thickness: 1/8 inch (3 mm)
  3. Manufacturers: Same as Treads.

## 2.3 MATERIALS - BASE

- A. Base: FS SS-W-40, Type II Vinyl; top set covered:
  1. Height: 4 inch (100 mm)
  2. Thickness: 1/8 inch (3 thick)
  3. Length: 4 foot (1.2 m) sections.
  4. Manufacturers:
    - a. Armstrong World Industries.
    - b. Flexco Company.
    - c. Johnsonite.
    - d. Mannington.
- B. Base Accessories: Premolded end stops and external corners, of same material, size, and color as base.

## 2.4 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
- C. Adhesives (Cements for rubber tile): 2-component epoxy adhesive. Provide epoxy nose caulk/filler at all rubber stair treads. Completely fill nosing-tread contact area. Any loose nosing shall be reset.
- D. Transition Strips: Johnsonite, or approved substitute. Colors for edge strips shall be selected from manufacturer's full range of colors:
  1. Carpet to VCT: Johnsonite No. CTA-XX-D.
  2. Concrete to VCT: Johnsonite No. RRS-XX-C.
  3. Carpet to Concrete: Johnsonite No. EG-XX-G.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

## 2.3 GYPSUM BOARD MATERIALS

- A. Fire Rated Gypsum Board: ASTM C36; fire resistive type, UL or WH rated; 5/8 inch (16 mm) thick, maximum available length in place; ends square cut, tapered edges.
- B. Moisture Resistant Gypsum Board: ASTM C630; 5/8 inch (16 mm) thick, maximum available length in place; ends square cut, tapered edges.
- C. Exterior Gypsum Soffit Board: ASTM C931; fire rated type, 5/8 inch (16 mm) thick, maximum available length in place; ends square cut, tapered edges.

## 2.4 ACCESSORIES

- A. Acoustic Insulation: See Section 07210 - Building Insulation.
- B. Acoustic Sealant: See Section 07920 - Joint Sealants.
- C. Deflection Track: Manufacturer's top runner complying with the requirements of ASTM C645 and with 2 inch (50 mm) deep flanges.
- D. Deflection and Firestop Track: Top runner designed to allow partition heads to expand and contract with movement of structure above while maintaining continuity of the assembly. Provide "Fire Trak" manufactured by Fire Trak Corp., or approved substitute.
- E. Corner Beads: Metal.
- F. Edge Trim: GA-201 and GA-216; Type LC bead.
- G. Joint Materials: ASTM C475; reinforcing tape, joint compound, adhesive, and water.
- H. Fasteners: ASTM C1002, Type S12.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Above-ceiling review: Prior to the installation of ceilings, provide a review of construction completion for fire stopping, mechanical, electrical and other items that will not be visible once the ceilings have been installed.

### 3.2 METAL STUD INSTALLATION

- A. Install studs in accordance with manufacturer's instructions.
- B. Metal Stud Spacing: 16 inches (400 mm) on center unless loading requirements dictate smaller spacing.
- C. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed by structural movement. Comply with details on the drawings.
- D. Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
- E. Door Opening Framing: Install double studs at door frame jambs.

### 3.3 WALL FURRING INSTALLATION

- A. Erect wall furring for direct attachment to concrete masonry and/or concrete walls as indicated.



## SECTION 09680

### CARPET

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Carpet placed with glue down method.
- B. Accessories.

##### 1.2 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet.
- C. Samples: Submit two samples 12 X 12 inch (300 X 300 mm) in size illustrating color and pattern for each carpet material specified.
- D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

##### 1.3 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame/smoke rating requirements of less than 450 in accordance with ASTM E84.
- B. Conform to ASTM E648 I for flooring radiant panel test.
- C. Conform to ASTM D2859 for surface flammability ignition test.

##### 1.4 EXTRA MATERIAL

- A. Provide 12 sq yds of carpeting of each type, color, and pattern specified.

#### PART 2 PRODUCTS

##### 2.1 CARPET

- A. Patcraft Lingo - 18470

##### 2.2 MATERIALS

- A. CPT-1: Tufted Carpet conforming to the following criteria:
  - 1. Construction Multi-Level Graphics Loop
  - 2. Pile Fiber 100% Premise Maxim Solution Dyed Continuous Filament Nylon
  - 3. Dye Method Solution dyed
  - 4. Gauge 1/8
  - 5. Stitches per inch 11
  - 6. Pile Height .250" (high) - .125" (low)
  - 7. Yarn Weight 32 oz. per sq. yd.
  - 8. Primary Backing Material Woven Polypropylene

- |     |                            |  |
|-----|----------------------------|--|
| 9.  | Secondary Backing Material | ActionLock                                 |
| 10. | Roll Width                 | 12 ft (4 m)                                |
| 11. | Flammability               | ASTM E648, Class 1, Methenamine Pill Test  |
| 12. | Smoke                      | ASTM E662 or NFPA-258, Less than 450       |
| 13. | Static                     | Less than 3.0 KV                           |
| 14. | Warranty                   | 10 Year Limited for Wear, Life for Static. |

- B. CPT-2: Same carpet as CPT1, different color.

### 2.3 ACCESSORIES

- A. Sub-Floor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Adhesive: Recommended by carpet manufacturer.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Bind edges of carpet to be installed at stairs.

### 3.2 INSTALLATION

- A. Apply carpet and adhesive in accordance with manufacturers' instructions.
- B. Install carpet risers at stairs with contact cement.

END OF SECTION

- B. Erect metal stud framing tight to concrete and/or concrete masonry walls, attached by adjustable furring brackets in accordance with manufacturer's instructions.
- 3.4 CEILING FRAMING INSTALLATION
- A. Install in accordance with manufacturer's instructions.
- 3.5 ACOUSTIC ACCESSORIES INSTALLATION
- A. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
  - B. Install acoustic sealant at gypsum board perimeter at:
    - 1. Metal Framing: Two beads under floor track.
    - 2. Face Layer.
    - 3. Caulk all penetrations of partitions by conduit, pipe, duct work and rough-in boxes.
- 3.6 GYPSUM BOARD INSTALLATION
- A. Install gypsum board in accordance with manufacturer's instructions.
  - B. Use screws when fastening gypsum board to wood or metal furring or framing.
  - C. Apply gypsum board to curved walls in accordance with GA-216.
- 3.7 JOINT TREATMENT
- A. Finish in accordance with GA-214 Level 4.
- 3.8 SCHEDULES
- A. Finishes in accordance with GA-214 Level:
    - 1. Level 1: Above finished ceilings concealed from view.
    - 2. Level 4: Walls exposed to view.
    - 3. Level 4: Ceilings exposed to view.
  - B. Metal stud wall framing schedule: General loading requirements of L/360.
    - 1. 3-5/8 inch framing:
      - a. 25 gage: Up to 14 feet high.
      - b. 22 gage: From 14 to 15 feet high.
      - c. 20 gage: From 15 to 15'-6" feet high.
    - 2. 6 inch framing:
      - a. 25 gage: Up to 20 feet high.
      - b. 22 gage: From 20 to 22 feet high.
      - c. 20 gage: From 22 to 23 feet high.

END OF SECTION

- G. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

## 2.2 ACOUSTIC UNIT MATERIALS

- A. Manufacturers:
  - 1. Armstrong World Industries.
  - 2. U.S.G.
- B. Acoustic Tile: ASTM E1264, conforming to the following:
  - 1. Type 2: 24" x 48" x 5/8" with square edge; STC 35-39; NRC .50-.60; Color: white. Provide "Cortega Minaboard" as manufactured by Armstrong World Industries or "Omni Fissured" by U.S.G..

## 2.3 ACCESSORIES

- A. Acoustic Sealant For Perimeter Moldings: Specified in Section 07920.
- B. Touch-up Paint: Type and color to match acoustic and grid units.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Above-ceiling review: Prior to the installation of ceilings, provide a review of construction completion for fire stopping, mechanical, electrical and other items that will not be visible once the ceilings have been installed.

### 3.2 INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM

- A. Install suspension system in accordance with manufacturer's instructions and as supplemented in this section.
- B. Install system in accordance with ASTM E580.
- C. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- D. Suspension Systems: shall be installed in compliance with ASTM C 636 and E 580-91 (seismic restraint), with hangers supported only from building structural members. Locate hangers not less than 6" from 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".

### 3.3 INSTALLATION - ACOUSTIC UNITS

- A. Install acoustic units in accordance with manufacturer's instructions.
- B. Cutting Acoustic Units:
  - 1. Cut to fit irregular grid and perimeter edge trim.
- C. Install hold-down clips to retain panels tight to grid system within 10 ft (3 m) of an exterior door.

### 3.4 ERECTION TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

3. Design: .025" raised circle
4. Manufacturers:
  - a. Johnsonite; RT Round.
  - b. Roppe: Low Profile Raised Circular Design

## 2.2 MATERIALS - STAIR COVERING

- A. Stair Treads: FS RR-T-650, Type B, Class 2; full width and depth of stair tread in one piece; return down edge of tread 1-1/2 inch (38 mm) with tapered thickness, 2 inch wide abrasive strip at nosing.
  1. Material: rubber
  2. Thickness: 1/4 inch (6 mm)
  3. Pattern: Raised
  4. Design: Disc
  5. Manufacturers:
    - a. Johnsonite: VIRH Round
    - b. Roppe: No. 98 Raised Circular Vantage with Relief Cut and nosing strip.
- B. Stair Risers: Maintain height and length in one piece:
  1. Sheet Material: rubber
  2. Thickness: 1/8 inch (3 mm)
  3. Manufacturers: Same as Treads.

## 2.3 MATERIALS - BASE

- A. Base: FS SS-W-40, Type II Vinyl; top set covered:
  1. Height: 4 inch (100 mm)
  2. Thickness: 1/8 inch (3 thick)
  3. Length: 4 foot (1.2 m) sections.
  4. Manufacturers:
    - a. Armstrong World Industries.
    - b. Flexco Company.
    - c. Johnsonite.
    - d. Mannington.
- B. Base Accessories: Premolded end stops and external corners, of same material, size, and color as base.

## 2.4 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
- C. Adhesives (Cements for rubber tile): 2-component epoxy adhesive. Provide epoxy nose caulk/filler at all rubber stair treads. Completely fill nosing-tread contact area. Any loose nosing shall be reset.
- D. Transition Strips: Johnsonite, or approved substitute. Colors for edge strips shall be selected from manufacturer's full range of colors:
  1. Carpet to VCT: Johnsonite No. CTA-XX-D.
  2. Concrete to VCT: Johnsonite No. RRS-XX-C.
  3. Carpet to Concrete: Johnsonite No. EG-XX-G.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify concrete floors are dry to a maximum moisture content of 7 percent, and exhibit negative alkalinity, carbonization, or dusting.

3.2 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.

3.3 INSTALLATION - TILE FLOORING

- A. Install in accordance with manufacturer's instructions.
- B. Install tile to basket weave pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
- C. Install resilient or metal edge strips at unprotected or exposed edges, and where flooring terminates. Secure metal strips after installation of flooring with stainless steel screws.

3.4 INSTALLATION - BASE

- A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches (45 mm) between joints.

3.5 INSTALLATION - STAIR COVERINGS

- A. Install stair treads and risers in one piece for full width and depth of tread.
- B. Install stair treads with epoxy adhesive and nose caulk.

END OF SECTION

- |     |                            |  |
|-----|----------------------------|--|
| 9.  | Secondary Backing Material | ActionLock                                 |
| 10. | Roll Width                 | 12 ft (4 m)                                |
| 11. | Flammability               | ASTM E648, Class 1, Methenamine Pill Test  |
| 12. | Smoke                      | ASTM E662 or NFPA-258, Less than 450       |
| 13. | Static                     | Less than 3.0 KV                           |
| 14. | Warranty                   | 10 Year Limited for Wear, Life for Static. |

- B. CPT-2: Same carpet as CPT1, different color.

### 2.3 ACCESSORIES

- A. Sub-Floor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Adhesive: Recommended by carpet manufacturer.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Bind edges of carpet to be installed at stairs.

### 3.2 INSTALLATION

- A. Apply carpet and adhesive in accordance with manufacturers' instructions.
- B. Install carpet risers at stairs with contact cement.

END OF SECTION

SECTION 09900

PAINTS AND COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, seamless wall coverings and other coatings.

1.2 SUBMITTALS

- A. Product Data: Provide data on all finishing products.
- B. Samples:
  - 1. Submit two paper chip samples, 2 X 2 inch (50 X 50 mm) in size illustrating range of colors available for each surface finishing product scheduled.

1.3 EXTRA MATERIALS

- A. Supply 1 new gallon (4 L) of each color and type; store where directed.
- B. Label each container with color, type and description of where used, in addition to the manufacturer's label.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers - All Conventional Finishes:
  - 1. Benjamin Moore and Co.
  - 2. ICI Paint Stores.
  - 3. Sherwin Williams

2.2 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare pigments:
  - 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
  - 2. For good flow and brushing properties.
  - 3. Capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- C. Patching Materials: Latex filler.
- D. Fastener Head Cover Materials: Latex filler.

2.3 FINISHES

- A. Refer to the Finish Schedule elsewhere in the construction documents for surface finish and color.



## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Surface Appurtenances: Remove (or mask) electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces that affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- C. Marks: Seal with shellac those that may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- F. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- G. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- H. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- J. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- K. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- L. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- M. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- N. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied.
- O. Wood Doors Scheduled for Painting: Seal wood door top and bottom edge surfaces with tinted primer.
- P. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

### 3.2 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Sand wood surfaces lightly between coats to achieve required finish.
- C. Prime concealed surfaces of all exterior woodwork with primer paint.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. **Surface Appurtenances:** Remove (or mask) electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. **Surfaces:** Correct defects and clean surfaces that affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- C. **Marks:** Seal with shellac those that may bleed through surface finishes.
- D. **Impervious Surfaces:** Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. **Insulated Coverings:** Remove dirt, grease, and oil from canvas and cotton.
- F. **Concrete Floors:** Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- G. **Gypsum Board Surfaces:** Fill minor defects with filler compound. Spot prime defects after repair.
- H. **Galvanized Surfaces:** Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. **Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish:** Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- J. **Plaster Surfaces:** Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- K. **Uncoated Steel and Iron Surfaces:** Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- L. **Shop Primed Steel Surfaces:** Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- M. **Interior Wood Items Scheduled to Receive Paint Finish:** Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- N. **Exterior Wood Scheduled to Receive Paint Finish:** Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied.
- O. **Wood Doors Scheduled for Painting:** Seal wood door top and bottom edge surfaces with tinted primer.
- P. **Metal Doors Scheduled for Painting:** Prime metal door top and bottom edge surfaces.

### 3.2 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Sand wood surfaces lightly between coats to achieve required finish.
- C. Prime concealed surfaces of all exterior woodwork with primer paint.

### 3.3 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports except where items are shop finished.
- C. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
- D. Paint exposed conduit and electrical equipment occurring in finished areas.
- E. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
- F. Color code equipment, piping, conduit, and exposed duct work in accordance with color schedule.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### 3.4 SCHEDULE - EXTERIOR SURFACES

- A. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
  - 1. Full-Gloss, Alkyd-Enamel Finish: 2 finish coats over a rust-inhibitive primer.
    - a. Primer: Rust-inhibitive metal primer.  
Moore: IronClad Retardo Rust-Inhibitive Paint #163.  
ICI: 4100-7100, Devguard Alkyd Metal Primer.  
S-W: Kem Kromik Metal Primer B50N2/B50W1.
    - b. First and Second Coats: Full-gloss, exterior, alkyd enamel applied at spreading rate recommended by the manufacturer.  
Moore: Impervo Enamel #133.  
ICI: 4308-XXXX Devguard Alkyd Industrial Gloss Enamel.  
S-W: S-W Industrial Enamel B-54Z Series.
- B. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
  - 1. Flat Acrylic Finish: 2 finish coats over a primer.
    - a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer.  
Moore: Regal First Coat Interior Latex Primer & Underbody #216.  
ICI: 1030-1200, Ultra-Hide PVA Interior Primer-Sealer.  
S-W: ProMar 200 Interior Latex Primer.
    - b. First and Second Coats: Flat, acrylic-latex-based, interior paint applied at spreading rate recommended by the manufacturer.  
Moore: Regal Wall Satin #215.  
ICI: 1200-XXX, Ultra-Hide Latex Flat Interior Wall Paint.  
S-W: ProMar 200 Latex Flat Wall Paint.
- C. Woodwork: Provide the following paint finish systems over new, interior wood surfaces:
  - 1. Satin, Acrylic-Enamel Finish: 2 finish coats over a wood undercoater.
    - a. Undercoat: Alkyd- or acrylic-latex-based, interior wood undercoater, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer.  
Moore: Moore's Alkyd Enamel Underbody #217.  
ICI: 1030-1200, Ultra-Hide PVA Interior Primer-Sealer.  
S-W: ProMar 200 Interior Latex Primer.

- b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Regal AquaVelvet #319.  
 ICI: 1412-XXXX, Ultra-Hide Latex Eggshell.  
 S-W: ProMar 200 Interior Latex Eg-shell.

### 3.5 SCHEDULE - INTERIOR SURFACES

- A. Concrete Masonry Units: Provide the following finish systems over interior concrete masonry block units:
  - 1. Flat Acrylic Finish: 2 finish coats over a block filler.
    - a. Block Filler: High-performance, latex-based, block filler applied at spreading rate recommended by the manufacturer.  
 Moore: Moorcraft Interior & Exterior Block Filler #173.  
 ICI: 3010-1200, Ultra-Hide Interior/Exterior Acrylic Block Filler.  
 S-W: ProMar Interior/Exterior Block Filler.
    - b. First and Second Coats: Flat, acrylic-latex-based, interior paint applied at spreading rate recommended by the manufacturer.  
 Moore: Regal Wall Satin #215.  
 ICI: 1200-XXX, Ultra-Hide Latex Flat Interior Wall Paint.  
 S-W: ProMar 200 Latex Flat Wall Paint.
- B. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
  - 1. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a primer.
    - a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer.  
 Moore: Regal First Coat Interior Latex Primer & Underbody #216.  
 ICI: 1030-1200, Ultra-Hide PVA Interior Primer-Sealer.  
 S-W: ProMar 200 Interior Latex Primer.
    - b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Regal AquaGlo Vinyl-Acrylic Latex Enamel #333.  
  
 ICI: Ultra-Hide Latex Semi-Gloss  
 S-W: ProMar 200 Interior Latex Semi-gloss.
- C. Woodwork: Provide the following paint finish systems over new, interior wood surfaces:
  - 1. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a wood undercoater.
    - a. Undercoat: Alkyd- or acrylic-latex-based, interior wood undercoater, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Alkyd Enamel Underbody #217.  
 ICI: 1030-1200, Ultra-Hide PVA Interior Primer-Sealer.  
 S-W: ProMar 200 Interior Latex Primer.
    - b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Regal AquaGlo Vinyl-Acrylic Latex Enamel #333.  
 ICI: 1416-XXXX, Ultra-Hide Latex Semi-Gloss.  
 S-W: ProMar 200 Interior Latex Semi-gloss.
- D. Stained Woodwork: Provide the following stained finishes over new, interior woodwork:
  - 1. Alkyd-Based, Satin-Varnish Finish: 2 finish coats of an alkyd-based, clear-satin varnish over a sealer coat and an alkyd-based, interior wood stain.
    - a. Stain Coat: Alkyd-based, interior wood stain applied at spreading rate recommended by the manufacturer.  
 Moore: Benwood Penetrating Stain #234.  
 ICI: 1700-XXXX, Woodpride Interior Oil Wood Finishing Stain.

- b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Regal AquaVelvet #319.  
 ICI: 1412-XXXX, Ultra-Hide Latex Eggshell.  
 S-W: ProMar 200 Interior Latex Eg-shell.

### 3.5 SCHEDULE - INTERIOR SURFACES

#### A. Concrete Masonry Units: Provide the following finish systems over interior concrete masonry block units:

- 1. Flat Acrylic Finish: 2 finish coats over a block filler.
  - a. Block Filler: High-performance, latex-based, block filler applied at spreading rate recommended by the manufacturer.  
 Moore: Moorcraft Interior & Exterior Block Filler #173.  
 ICI: 3010-1200, Ultra-Hide Interior/Exterior Acrylic Block Filler.  
 S-W: ProMar Interior/Exterior Block Filler.
  - b. First and Second Coats: Flat, acrylic-latex-based, interior paint applied at spreading rate recommended by the manufacturer.  
 Moore: Regal Wall Satin #215.  
 ICI: 1200-XXX, Ultra-Hide Latex Flat Interior Wall Paint.  
 S-W: ProMar 200 Latex Flat Wall Paint.

#### B. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:

- 1. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a primer.
  - a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer.  
 Moore: Regal First Coat Interior Latex Primer & Underbody #216.  
 ICI: 1030-1200, Ultra-Hide PVA Interior Primer-Sealer.  
 S-W: ProMar 200 Interior Latex Primer.
  - b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Regal AquaGlo Vinyl-Acrylic Latex Enamel #333.  
  
 ICI: Ultra-Hide Latex Semi-Gloss  
 S-W: ProMar 200 Interior Latex Semi-gloss.

#### C. Woodwork: Provide the following paint finish systems over new, interior wood surfaces:

- 1. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a wood undercoater.
  - a. Undercoat: Alkyd- or acrylic-latex-based, interior wood undercoater, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Alkyd Enamel Underbody #217.  
 ICI: 1030-1200, Ultra-Hide PVA Interior Primer-Sealer.  
 S-W: ProMar 200 Interior Latex Primer.
  - b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer.  
 Moore: Moore's Regal AquaGlo Vinyl-Acrylic Latex Enamel #333.  
 ICI: 1416-XXXX, Ultra-Hide Latex Semi-Gloss.  
 S-W: ProMar 200 Interior Latex Semi-gloss.

#### D. Stained Woodwork: Provide the following stained finishes over new, interior woodwork:

- 1. Alkyd-Based, Satin-Varnish Finish: 2 finish coats of an alkyd-based, clear-satin varnish over a sealer coat and an alkyd-based, interior wood stain.
  - a. Stain Coat: Alkyd-based, interior wood stain applied at spreading rate recommended by the manufacturer.  
 Moore: Benwood Penetrating Stain #234.  
 ICI: 1700-XXXX, Woodpride Interior Oil Wood Finishing Stain.

- S-W: Oil Stain A-48 Series.
- b. **Sealer Coat:** Clear sanding sealer applied at spreading rate recommended by the manufacturer.
    - Moore: Moore's Interior Wood Finishes Quick-Dry Sanding Sealer #413.
    - ICI: 1918-XXXX, Woodpride Quick Dry Varnish Sanding Sealer.
    - S-W: ProMar Varnish Sanding Sealer B26V3.
  - c. **First and Second Finish Coats:** Alkyd-based or polyurethane varnish, as recommended by the manufacturer, applied at spreading rate recommended by the manufacturer.
    - Moore: Benwood Satin Finish Varnish #404.
    - ICI: 1908-XXXX, Woodpride Clear Finish Gloss.
    - S-W: Oil Base Varnish, Gloss A66V91.
- E. **Clear Finish Woodwork:** Provide the following finishes over new, interior woodwork:
1. **Alkyd-Based, Satin-Varnish Finish:** 2 finish coats of an alkyd-based, clear-satin varnish over a sealer coat.
    - a. **Sealer Coat:** Clear sanding sealer applied at spreading rate recommended by the manufacturer.
      - Moore: Moore's Interior Wood Finishes Quick-Dry Sanding Sealer #413.
      - ICI: 1918-XXXX, Woodpride Quick Dry Varnish Sanding Sealer.
      - S-W: ProMar Varnish Sanding Sealer B26V3.
    - b. **First and Second Finish Coats:** Alkyd-based or polyurethane varnish, as recommended by the manufacturer, applied at spreading rate recommended by the manufacturer.
      - Moore: Benwood Satin Finish Varnish #404.
      - ICI: 1908-XXXX, Woodpride Clear Finish Gloss.
      - S-W: Oil Base Varnish, Gloss A66V91.
- F. **Ferrous Metal:** Provide the following finish systems over ferrous metal:
1. **Full-Gloss, Alkyd-Enamel Finish:** 2 finish coats over an enamel undercoater and a primer.
    - a. **Primer:** Quick-drying, rust-inhibitive, alkyd-based or epoxy-metal primer, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer.
      - Moore: IronClad Retardo Rust-Inhibitive Paint #163.
      - ICI: 4100-7100, Devguard Alkyd Metal Primer.
      - S-W: Kem Kromik Metal Primer B50N2/B50W1.
    - b. **Undercoat:** Alkyd, interior enamel undercoat or full-gloss, interior, alkyd-enamel finish coat, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer.
      - Moore: Moore's Alkyd Enamel Underbody #217.
      - ICI: 4308-XXXX, Devguard Alkyd Industrial Gloss Enamel.
      - S-W: Industrial Enamel B-54 Series.
    - c. **Finish Coat:** Full-gloss, alkyd, interior enamel applied at spreading rate recommended by the manufacturer.
      - Moore: Impervo Enamel #133.
      - ICI: 4308-XXXX, Devguard Alkyd Industrial Gloss Enamel.
      - S-W: Industrial Enamel B-54 Series.

END OF SECTION

## SECTION 10100

### VISUAL DISPLAY BOARDS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Surfaced metal markerboards.
- B. Tackboards.
- C. Trim, Chalkrail, and accessories.

##### 1.2 SUBMITTALS

- A. Product Data: Provide data on markerboards, tackboards, and trim and accessories.
- B. Shop Drawings: Indicate wall elevations, dimensions, joint locations, special anchor details.
- C. Samples: Submit two samples illustrating materials and finish, color and texture of markerboard, and tackboard.

##### 1.3 WARRANTY

- A. Provide five year warranty to include coverage of markerboard surface from discoloration due to cleaning, crazing, cracking or staining.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURERS

- A. Claridge Products and Equipment, Inc.
- B. Greensteel, Inc.
- C. Carolina Chalkboard Co.

##### 2.2 MARKERBOARD MATERIAL

- A. Porcelain-On-Metal: Balanced, high-pressure laminated, 3-ply construction; with facing sheet, core, and backing.
- B. 24 gage Enameling grade steel sheet coated on exposed face with 2 coat process of ground coat and color cover coat and on concealed face with 2 coat process of primer and ground coat, with ground and cover coats fused to steel at firing temperatures standard with manufacturer.
- C. Cover Coat Finish: Standard semi-gloss finish.
- D. Wearability Test Method: Comply with requirements of PEI Test CB-1 established by Porcelain Enamel Institute, Inc.
- E. Provide manufacturer's standard special writing surface (Marker Boards) with glass finish intended for use with liquid markers.
- F. Core: 3/8" thick Particle Board, weighing 1-1/2 lbs./sf.
- G. Backing Sheet: Aluminum foil, 0.015" thick

H. Laminating Adhesive: Manufacturer's standard moisture-resistant thermoplastic type.

### 2.3 TACKBOARD MATERIAL

A. Custom Cork Faced Tackboards: Provide cork faced boards in lengths indicated equal to "Nucork" #550 as manufactured by Claridge.

B. Unless otherwise indicated, make up rigid panels by factory-laminating under pressure to 1/4" thick tempered hardboard backing.

### 2.4 FRAME MATERIALS

A. Frame and Chalkrail: Aluminum extrusions, ASTM B221.

B. Provide frame similar to Series 4 Factory Built Unit by Claridge.

### 2.5 ACCESSORIES

A. Adhesives: Type used by manufacturer, waterproof contact type.

## PART 3 EXECUTION

### 3.1 INSTALLATION

A. Install markerboards, and tackboards in accordance with manufacturer's instructions.

END OF SECTION



H. Laminating Adhesive: Manufacturer's standard moisture-resistant thermoplastic type.

### 2.3 TACKBOARD MATERIAL

A. Custom Cork Faced Tackboards: Provide cork faced boards in lengths indicated equal to "Nucork" #550 as manufactured by Claridge.

B. Unless otherwise indicated, make up rigid panels by factory-laminating under pressure to 1/4" thick tempered hardboard backing.

### 2.4 FRAME MATERIALS

A. Frame and Chalkrail: Aluminum extrusions, ASTM B221.

B. Provide frame similar to Series 4 Factory Built Unit by Claridge.

### 2.5 ACCESSORIES

A. Adhesives: Type used by manufacturer, waterproof contact type.

## PART 3 EXECUTION

### 3.1 INSTALLATION

A. Install markerboards, and tackboards in accordance with manufacturer's instructions.

END OF SECTION

## SECTION 10800

### TOILET ACCESSORIES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Toilet accessories.

##### 1.2 SUBMITTALS

- A. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

##### 1.3 REGULATORY REQUIREMENTS

- A. Conform to ANSI A117.1.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURERS

- A. Accessory Specialties, Inc.
- B. Bobrick Washroom Equip., Inc.
- C. Bradley Corp.
- D. McKinney/Kidde, Inc.

##### 2.2 MATERIALS

- A. Sheet Steel: ASTM A366.
- B. Stainless Steel Sheet: ASTM A167, Type 304.
- C. Tubing: ASTM A269, stainless steel.
- D. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof.
- E. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

##### 2.3 FABRICATION

- A. Weld and grind joints of fabricated components, smooth.
- B. Form exposed surfaces from single sheet of stock, free of joints. Form surfaces flat without distortion. Maintain surfaces without scratches or dents.
- C. Fabricate grab bars of tubing, free of visible joints, return to wall with end attachment flanges. Knurl grip surfaces.
- D. Shop assemble components and package complete with anchors and fittings.
- E. Provide steel anchor plates, adapters, and anchor components for installation.

##### 2.4 KEYING

A. Supply 2 keys for each accessory to Owner.

2.5 FINISHES

A. Galvanizing: ASTM A123 to 1.25 oz/sq yd (380 g/sq m). Galvanize ferrous metal and fastening devices.

B. Stainless Steel: No. 4 satin luster finish.

C. Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats baked enamel.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions.

3.2 SCHEDULE

(products listed are based on Bobrick)

	<u>ITEM</u>	<u>MODEL #</u>	<u>FINISH</u>
A.	Toilet Tissue Dispenser	B-2888	Stainless Steel
B.	Paper Towel Dispenser	B-262	Stainless Steel
C.	Soap Dispenser	B-2112	Stainless Steel
D.	Grab Bars	B-6806 series	Stainless Steel
E.	Mirror	B-165 2436	Stainless Steel
F.	Mop Rack	B-223X36	Stainless Steel

END OF SECTION

- A. Supply 2 keys for each accessory to Owner.

2.5 FINISHES

- A. Galvanizing: ASTM A123 to 1.25 oz/sq yd (380 g/sq m). Galvanize ferrous metal and fastening devices.
- B. Stainless Steel: No. 4 satin luster finish.
- C. Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats baked enamel.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions.

3.2 SCHEDULE

(products listed are based on Bobrick)

	<u>ITEM</u>	<u>MODEL #</u>	<u>FINISH</u>
A.	Toilet Tissue Dispenser	B-2888	Stainless Steel
B.	Paper Towel Dispenser	B-262	Stainless Steel
C.	Soap Dispenser	B-2112	Stainless Steel
D.	Grab Bars	B-6806 series	Stainless Steel
E.	Mirror	B-165 2436	Stainless Steel
F.	Mop Rack	B-223X36	Stainless Steel

END OF SECTION

## SECTION 12355

### LABORATORY CASEWORK

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Wood-faced laboratory casework.
- B. Laboratory countertops.

##### 1.2 DEFINITIONS

- A. Exposed Portions of Casework: Surfaces visible when doors and drawers are closed, including bottoms of cabinets more than 48 inches (1200 mm) above floor, and visible surfaces in open cabinets or behind glass doors.
  - 1. Ends of cabinets, including those installed directly against walls or other cabinets, shall be considered exposed.
  - 2. Ends of cabinets indicated to be installed directly against and completely concealed by walls or other cabinets after installation shall not be considered exposed.
- B. Semiexposed Portions of Casework: Surfaces behind opaque doors, such as interiors of cabinets, shelves, dividers, interiors and sides of drawers, and interior faces of doors. Tops of cases 78 inches (1980 mm) or more above floor are defined as semiexposed.
- C. Concealed portions of casework include sleepers, web frames, dust panels, and other surfaces not usually visible after installation.

##### 1.3 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Shop Drawings: For wood laboratory casework. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Indicate locations of blocking and other supports required for installing casework.
  - 2. Indicate locations and types of service fittings, together with associated service supply connection required.
  - 3. Show adjacent walls, doors, windows, other building components, and other laboratory equipment. Indicate clearances from above items.
  - 4. Include coordinated dimensions for laboratory equipment specified in other Sections.
- C. Samples: Manufacturer's color charts consisting of actual units or sections of units showing the full range of colors, textures, and patterns available for cabinets and each type of top material indicated.

##### 1.4 QUALITY ASSURANCE

- A. Product Designations: Drawings indicate sizes, configurations, and finish material of casework by referencing designated manufacturer's catalog numbers. Other manufacturers' casework of similar sizes, similar door and drawer configurations, same finish material, and complying with the Specifications may be considered. Refer to Division 1 Section "Substitutions."

##### 1.5 EXTRA MATERIALS

- A. Furnish complete touchup kit for each type and finish of laboratory casework provided. Include scratch fillers, stains, finishes, and other materials necessary to perform permanent repairs to damaged casework finish.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Wood-Faced Laboratory Casework:
    - a. American Desk Manufacturing Co.; Taylor Division.
    - b. Fisher Hamilton Scientific, Inc.
    - c. Kewaunee Scientific Corp.; Laboratory Division.
    - d. Mohon International, Inc.; Campbell Rhea.
  2. Chemical-Resistant Plastic Laminates:
    - a. Formica Corporation.
    - b. Pioneer Plastics Corp.
    - c. Ralph Wilson Plastics Co.

### 2.2 MATERIALS

- A. Exposed Materials: Comply with the following:
1. Exposed Wood: Do not use 2 adjacent exposed faces that are noticeably dissimilar in color, grain, figure, or natural character markings.
    - a. Wood Species: Red oak.
  2. Solid Wood: Clear hardwood lumber matching selected species, free of defects, selected for compatible grain and color and kiln dried to 7 percent moisture content.
  3. Plywood: Hardwood plywood of species indicated, selected for compatible color and grain. HPVA HP-1, Grade AA faces at least 1/50 inch (0.5 mm) thick and Grade J crossbands. Edgeband exposed edges with minimum 1/8-inch- (3-mm-) thick, solid-wood edging of the same species as face veneer.
  4. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3, Grade GP-28.
    - a. Unless otherwise indicated, provide plastic laminate for exposed surfaces.
  5. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 1 mm thick elsewhere.
- B. Semiexposed Materials: Comply with the following:
1. Solid Wood: Sound hardwood lumber, selected to eliminate appearance defects and kiln dried to 7 percent moisture content. Any hardwood species similar in color and grain to exposed portions.
  2. Plywood: Hardwood plywood of any species similar in color and grain to exposed portions. HPVA HP-1, Grade C faces and Grade J crossbands. Semiexposed backs of plywood with exposed faces shall be the same species as faces.
  3. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3, Grade GP-28.
  4. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 1 mm thick.
  5. Metal: Commercial-quality, cold-rolled, carbon-steel sheet, complying with ASTM A 366 (ASTM A 366M); matte finish; suitable for exposed applications.
- C. Concealed Materials: Comply with the following:
1. Solid Wood or Plywood: Any hardwood or softwood species, with no defects affecting strength or utility. Hardwood and softwood lumber kiln dried to 7 and 12 percent moisture content, respectively. Concealed backs of plywood with exposed or semiexposed faces shall be the same species as faces.
  2. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3, Grade BK-20.
  3. Particleboard: ANSI A208.1, Grade M-2.
  4. Medium-Density Fiberboard: ANSI A208.2.
  5. Hardboard: AHA A135.4, Class 1 Tempered.

SECTION 10950

BUILDING SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. T V bracket.

1.2 SUBMITTALS

A. Product Data: Provide data on building specialty types, sizes and accessories.

B. Manufacturer's Installation Instructions: Indicate component installation assembly.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. T V Bracket: Similar to Peerless Slimline Wall Mount by Peerless Industries, Inc. (1-800-865-2112). Heavy gage steel construction, black epoxy finish, adjustable swivel and tilt.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

END OF SECTION

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Wood-Faced Laboratory Casework:
    - a. American Desk Manufacturing Co.; Taylor Division.
    - b. Fisher Hamilton Scientific, Inc.
    - c. Kewaunee Scientific Corp.; Laboratory Division.
    - d. Mohon International, Inc.; Campbell Rhea.
  2. Chemical-Resistant Plastic Laminates:
    - a. Formica Corporation.
    - b. Pioneer Plastics Corp.
    - c. Ralph Wilson Plastics Co.

### 2.2 MATERIALS

- A. Exposed Materials: Comply with the following:
1. Exposed Wood: Do not use 2 adjacent exposed faces that are noticeably dissimilar in color, grain, figure, or natural character markings.
    - a. Wood Species: Red oak.
  2. Solid Wood: Clear hardwood lumber matching selected species, free of defects, selected for compatible grain and color and kiln dried to 7 percent moisture content.
  3. Plywood: Hardwood plywood of species indicated, selected for compatible color and grain. HPVA HP-1, Grade AA faces at least 1/50 inch (0.5 mm) thick and Grade J crossbands. Edgeband exposed edges with minimum 1/8-inch- (3-mm-) thick, solid-wood edging of the same species as face veneer.
  4. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3, Grade GP-28.
    - a. Unless otherwise indicated, provide plastic laminate for exposed surfaces.
  5. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 1 mm thick elsewhere.
- B. Semiexposed Materials: Comply with the following:
1. Solid Wood: Sound hardwood lumber, selected to eliminate appearance defects and kiln dried to 7 percent moisture content. Any hardwood species similar in color and grain to exposed portions.
  2. Plywood: Hardwood plywood of any species similar in color and grain to exposed portions. HPVA HP-1, Grade C faces and Grade J crossbands. Semiexposed backs of plywood with exposed faces shall be the same species as faces.
  3. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3, Grade GP-28.
  4. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 1 mm thick.
  5. Metal: Commercial-quality, cold-rolled, carbon-steel sheet, complying with ASTM A 366 (ASTM A 366M); matte finish; suitable for exposed applications.
- C. Concealed Materials: Comply with the following:
1. Solid Wood or Plywood: Any hardwood or softwood species, with no defects affecting strength or utility. Hardwood and softwood lumber kiln dried to 7 and 12 percent moisture content, respectively. Concealed backs of plywood with exposed or semiexposed faces shall be the same species as faces.
  2. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3, Grade BK-20.
  3. Particleboard: ANSI A208.1, Grade M-2.
  4. Medium-Density Fiberboard: ANSI A208.2.
  5. Hardboard: AHA A135.4, Class 1 Tempered.



## 2.3 DESIGN, COLOR, AND FINISH

- A. Design: Provide wood laboratory casework of the following design:
  - 1. Lipped overlay with radiused edges.
- B. Colors and Finishes: Comply with the following requirements for colors and finishes of wood laboratory casework:
  - 1. Colors and Finishes: Provide Architect's selections from wood casework manufacturer's full range of colors and finishes.
  - 2. Colors and Finishes: Provide Architect's selections from plastic laminate manufacturer's full range of colors, patterns, and gloss.

## 2.4 FABRICATION

- A. Construction: Provide wood-faced laboratory casework of the following minimum construction:
  - 1. Bottoms and ends of cabinets, shelves, and tops of wall cabinets and tall cabinets: 3/4-inch (19-mm) plywood.
  - 2. Top frames of base cabinets: 3/4-by-2-inch (19-by-51-mm) solid wood with mortise and tenon or doweled connections, glued and pinned or screwed.
  - 3. Backs of cabinets: 3/4-inch (19-mm) plywood where exposed, 1/4-inch (6.4-mm) hardboard dadoed into sides, bottoms, and tops where not exposed.
  - 4. Drawer fronts: 3/4-inch (19-mm) plywood or solid hardwood.
  - 5. Drawer sides and backs: 1/2-inch (13-mm) solid wood or 7/16-inch (11-mm) plywood, with glued dovetail joints.
  - 6. Drawer bottoms: 1/4-inch (6.4-mm) hardboard glued and dadoed into front, back, and sides of drawers.
  - 7. Doors 48 inches (1220 mm) or less in height: 3/4 inch (19 mm) thick with solid hardwood stiles and rails, particleboard or medium-density fiberboard cores, and hardwood face veneers and crossbands.
  - 8. Doors more than 48 inches (1220 mm) in height: 1-1/16 inch (27 mm) thick with solid hardwood stiles and rails, honeycomb cores, and hardwood face veneers and crossbands.
  - 9. Stiles and rails of glazed doors: 1-1/16-by-3-inch (27-by-76-mm) solid hardwood with mortise and tenon or doweled connections, glued and screwed.
- B. Leg Shoes: Vinyl or rubber, black, open-bottom type.
- C. Base Molding: Extruded vinyl or rubber, black, 4 inches (100 mm) high. Provide on fronts and exposed sides of floor-mounted casework.
- D. Filler Strips: Provide as needed to close space between cabinets and walls, ceilings, and indicated equipment. Fabricate from the same material and with the same finish as cabinets.

## 2.5 FINISH FOR WOOD LABORATORY CASEWORK

- A. Preparation: Machine sand lumber and plywood for casework construction before assembling. Sand edges of doors and drawer fronts and molded shapes with profile-edge sander. Hand sand casework after assembling for uniform smoothness at least equivalent to that produced by 220 grit sanding and without machine marks, cross sanding, or other surface blemishes.
- B. Staining: Remove fibers and dust with compressed air or tack cloths and apply wash-coat sealer and stain to exposed and semiexposed surfaces as required to provide uniform, color-matching, approved samples.
- C. Chemical-Resistant Finish: Apply manufacturer's standard 2-coat, chemical-resistant, baked, clear finish consisting of a thermosetting catalyzed sealer and a thermosetting catalyzed conversion varnish. Hand sand and wipe clean between applying sealer and topcoat. Topcoat may be omitted on fully concealed surfaces.

- D. Chemical and Physical Resistance of Finish System: Provide wood laboratory casework with finish system complying with the following requirements for chemical and physical resistance:
1. Chemical Resistance: Capable of withstanding application of not less than 5 drops (0.25 mL) of the following reagents applied to finish surface; covered with a watch glass for 60 minutes, rinsed, and dried; with no permanent change in gloss, color, film hardness, adhesion, or film protection.
    - a. Acetic acid (98 percent).
    - b. Hydrochloric acid (37 percent).
    - c. Nitric acid (10 percent).
    - d. Phosphoric acid (75 percent).
    - e. Sulfuric acid (25 percent).
    - f. Acetone.
    - g. Benzene.
    - h. Carbon tetrachloride.
    - i. Ethyl acetate.
    - j. Ethyl alcohol.
    - k. Ethyl ether.
    - l. Formaldehyde (37 percent).
    - m. Methyl ethyl ketone.
    - n. Toluene.
    - o. Xylene.
    - p. Ammonium hydroxide (28 percent).
    - q. Potassium hydroxide (40 percent).
    - r. Sodium carbonate (saturated).
    - s. Sodium chloride (saturated).
    - t. Sodium hydroxide (25 percent)
  2. Moisture Resistance: No visible effect when exposed to the following:
    - a. Hot water at a temperature of 190 to 205 deg F (88 to 96 deg C), trickled down the surface at a 45-degree angle for 5 minutes.
    - b. Constant moisture using a 2-by-3-by-1-inch (51-by-76-by-25-mm) cellulose sponge, soaked with water, in contact with surface for 100 hours.

## 2.6 CASEWORK HARDWARE

- A. Hardware, General: Provide manufacturer's standard satin-finish, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.
- B. Hinges: Stainless-steel, 5-knuckle hinges complying with BHMA 156.9, Grade 1, with antifriction bearings and rounded tips. Provide 2 for doors less than 48 inches (1200 mm) high and 3 for doors more than 48 inches (1200 mm) high.
- C. Pulls: Solid aluminum, stainless steel, or chrome-plated brass, fastened from back with 2 screws. For sliding doors, provide stainless-steel or chrome-plated recessed flush pulls. Provide 2 pulls for drawers more than 24 inches (600 mm) wide.
- D. Door Catches: Nylon-roller spring catch or dual, self-aligning, permanent magnet catch. Provide 2 catches on doors more than 48 inches (1200 mm) high.
- E. Drawer Guides: Metal-channel, self-closing drawer guides, designed to prevent rebound when drawers are closed, with nylon-tired, ball-bearing rollers, and complying with BHMA A156.9, Type B05091.
- F. Label Holders: Stainless steel or chrome plated, sized to receive standard label cards approximately 1 by 2 inches (25 by 51 mm), attached with screws or brads.
  1. Provide where indicated.
  2. Provide on all drawers.
- G. Drawer and Cupboard Locks: Cylindrical type, 5-pin tumbler and cam, brass with chrome-plated finish, complying with BHMA A156.11, Grade 1.
  1. Provide minimum of 2 keys per lock and 6 master keys.

- D. Chemical and Physical Resistance of Finish System: Provide wood laboratory casework with finish system complying with the following requirements for chemical and physical resistance:
1. Chemical Resistance: Capable of withstanding application of not less than 5 drops (0.25 mL) of the following reagents applied to finish surface; covered with a watch glass for 60 minutes, rinsed, and dried; with no permanent change in gloss, color, film hardness, adhesion, or film protection.
    - a. Acetic acid (98 percent).
    - b. Hydrochloric acid (37 percent).
    - c. Nitric acid (10 percent).
    - d. Phosphoric acid (75 percent).
    - e. Sulfuric acid (25 percent).
    - f. Acetone.
    - g. Benzene.
    - h. Carbon tetrachloride.
    - i. Ethyl acetate.
    - j. Ethyl alcohol.
    - k. Ethyl ether.
    - l. Formaldehyde (37 percent).
    - m. Methyl ethyl ketone.
    - n. Toluene.
    - o. Xylene.
    - p. Ammonium hydroxide (28 percent).
    - q. Potassium hydroxide (40 percent).
    - r. Sodium carbonate (saturated).
    - s. Sodium chloride (saturated).
    - t. Sodium hydroxide (25 percent)
  2. Moisture Resistance: No visible effect when exposed to the following:
    - a. Hot water at a temperature of 190 to 205 deg F (88 to 96 deg C), trickled down the surface at a 45-degree angle for 5 minutes.
    - b. Constant moisture using a 2-by-3-by-1-inch (51-by-76-by-25-mm) cellulose sponge, soaked with water, in contact with surface for 100 hours.

## 2.6 CASEWORK HARDWARE

- A. Hardware, General: Provide manufacturer's standard satin-finish, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.
- B. Hinges: Stainless-steel, 5-knuckle hinges complying with BHMA 156.9, Grade 1, with antifriction bearings and rounded tips. Provide 2 for doors less than 48 inches (1200 mm) high and 3 for doors more than 48 inches (1200 mm) high.
- C. Pulls: Solid aluminum, stainless steel, or chrome-plated brass, fastened from back with 2 screws. For sliding doors, provide stainless-steel or chrome-plated recessed flush pulls. Provide 2 pulls for drawers more than 24 inches (600 mm) wide.
- D. Door Catches: Nylon-roller spring catch or dual, self-aligning, permanent magnet catch. Provide 2 catches on doors more than 48 inches (1200 mm) high.
- E. Drawer Guides: Metal-channel, self-closing drawer guides, designed to prevent rebound when drawers are closed, with nylon-tired, ball-bearing rollers, and complying with BHMA A156.9, Type B05091.
- F. Label Holders: Stainless steel or chrome plated, sized to receive standard label cards approximately 1 by 2 inches (25 by 51 mm), attached with screws or brads.
  1. Provide where indicated.
  2. Provide on all drawers.
- G. Drawer and Cupboard Locks: Cylindrical type, 5-pin tumbler and cam, brass with chrome-plated finish, complying with BHMA A156.11, Grade 1.
  1. Provide minimum of 2 keys per lock and 6 master keys.

2. Provide where indicated.
  3. Provide on all drawers and doors.
- H. Adjustable Shelf Supports: Mortise-type steel standards and steel shelf rests, with epoxy powder-coated finish, complying with BHMA A156.9, Types B04071 and B04091.
- 2.7 TOPS
- A. Tops, General: Provide smooth, clean exposed tops and edges in uniform plane free of defects. Make exposed edges and corners uniformly beveled. Provide front and end overhang of 1 inch (25 mm) over base cabinets, formed with continuous drip groove on underside 1/2 inch (13 mm) from edge.
  - B. Plastic-Laminate Tops: Provide plastic-laminate sheet, complying with NEMA LD 3, shop bonded with fully waterproof glue to both sides of 3/4-inch- (19-mm-) thick subtop of hardwood-faced plywood, medium-density-overlaid plywood, or phenolic-resin-bonded particleboard. Sand surfaces to which plastic laminate is to be bonded.
    1. Chemical-Resistant Plastic Laminate for Tops: Grade PF-42 plastic laminate that also has the following ratings when tested with indicated reagents according to NEMA LD 3, test procedure 3.9.5:
      - a. Acetic acid (98 percent): No effect.
      - b. Hydrochloric acid (37 percent): Moderate effect.
      - c. Nitric acid (30 percent): Moderate effect.
      - d. Phosphoric acid (75 percent): No effect.
      - e. Sulfuric acid (77 percent): Moderate effect.
      - f. Benzene: No effect.
      - g. Butyl alcohol: No effect.
      - h. Carbon tetrachloride: No effect.
      - i. Ethyl acetate: No effect.
      - j. Ethyl ether: No effect.
      - k. Formaldehyde: No effect.
      - l. Furfural: No effect.
      - m. Methyl ethyl ketone: No effect.
      - n. Phenol (85 percent): Moderate effect.
      - o. Xylene: No effect.
      - p. Ammonium hydroxide (28 percent): No effect.
      - q. Sodium hydroxide (25 percent): No effect.
      - r. Sodium sulfide (15 percent): No effect.
      - s. Zinc chloride: No effect.
      - t. Gentian violet: No effect.
      - u. Methyl red: No effect.
    2. Plastic-Laminate Grade for Backing: Grade BK-20.
    3. Color, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
      - a. Provide Architect's selections from plastic laminate manufacturer's full range of colors and finishes.
    4. Provide plastic-laminate edgings of the same material as top on front edge of top, top edges of backsplashes and end splashes, and on ends of tops.

## PART 3 - EXECUTION

### 3.1 CASEWORK INSTALLATION

- A. Install plumb, level, and true; shim as required, using concealed shims. Where laboratory casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical.

- B. **Base Cabinets:** Set cabinets straight, plumb, and level. Adjust subtops within 1/16 inch (1.5 mm) of a single plane. Fasten cabinets to utility-space framing, partition framing, wood blocking, or reinforcements in partitions with fasteners spaced 24 inches (600 mm) o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16 inch (1.5 mm).
  - 1. Where base cabinets are not installed adjacent to walls, fasten to floor at toe space with fasteners spaced 24 inches (600 mm) o.c. Secure sides of cabinets to floor, where they do not adjoin other cabinets, with not less than 2 fasteners.
- C. **Wall Cabinets:** Hang cabinets straight, plumb, and level. Adjust fronts and bottoms within 1/16 inch (1.5 mm) of a single plane. Fasten to hanging strips, masonry, partition framing, blocking, or reinforcements in partitions. Fasten each cabinet through back, near top, at not less than 24 inches (600 mm) o.c. Align similar adjoining doors to a tolerance of 1/16 inch (1.5 mm).
- D. Install hardware uniformly and precisely. Set hinges snug and flat in mortises, unless otherwise indicated. Adjust and align hardware so moving parts operate freely and contact points meet accurately. Allow for final adjustment after installation.
- E. Adjust casework and hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

### 3.2 INSTALLATION OF TOPS

- A. **Field Jointing:** Where possible, make in the same manner as shop jointing using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project site processing of top and edge surfaces is not required. Locate field joints where shown on approved Shop Drawings.
- B. **Fastenings:** Use concealed clamping devices for field joints located within 6 inches (150 mm) of front, at back edges, and at intervals not exceeding 24 inches (600 mm). Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
- C. **Abut top and edge surfaces** in one true plane, with internal supports placed to prevent deflection. Provide flush hairline joints in tops using clamping devices.
  - 1. Where necessary to penetrate tops with fasteners, countersink heads approximately 1/8 inch (3 mm) and plug hole flush with material equal to top in chemical resistance, hardness, and appearance.
- D. Provide required holes and cutouts for service fittings.
- E. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- F. Provide scribe moldings for closures at junctures of top, curb, and splash, with walls as recommended by manufacturer for materials involved. Match materials and finish to adjacent casework. Use chemical-resistant, permanently elastic sealing compound where recommended by manufacturer.

END OF SECTION

- B. Base Cabinets: Set cabinets straight, plumb, and level. Adjust subtops within 1/16 inch (1.5 mm) of a single plane. Fasten cabinets to utility-space framing, partition framing, wood blocking, or reinforcements in partitions with fasteners spaced 24 inches (600 mm) o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16 inch (1.5 mm).
  - 1. Where base cabinets are not installed adjacent to walls, fasten to floor at toe space with fasteners spaced 24 inches (600 mm) o.c. Secure sides of cabinets to floor, where they do not adjoin other cabinets, with not less than 2 fasteners.
- C. Wall Cabinets: Hang cabinets straight, plumb, and level. Adjust fronts and bottoms within 1/16 inch (1.5 mm) of a single plane. Fasten to hanging strips, masonry, partition framing, blocking, or reinforcements in partitions. Fasten each cabinet through back, near top, at not less than 24 inches (600 mm) o.c. Align similar adjoining doors to a tolerance of 1/16 inch (1.5 mm).
- D. Install hardware uniformly and precisely. Set hinges snug and flat in mortises, unless otherwise indicated. Adjust and align hardware so moving parts operate freely and contact points meet accurately. Allow for final adjustment after installation.
- E. Adjust casework and hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

### 3.2 INSTALLATION OF TOPS

- A. Field Jointing: Where possible, make in the same manner as shop jointing using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project site processing of top and edge surfaces is not required. Locate field joints where shown on approved Shop Drawings.
- B. Fastenings: Use concealed clamping devices for field joints located within 6 inches (150 mm) of front, at back edges, and at intervals not exceeding 24 inches (600 mm). Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
- C. Abut top and edge surfaces in one true plane, with internal supports placed to prevent deflection. Provide flush hairline joints in tops using clamping devices.
  - 1. Where necessary to penetrate tops with fasteners, countersink heads approximately 1/8 inch (3 mm) and plug hole flush with material equal to top in chemical resistance, hardness, and appearance.
- D. Provide required holes and cutouts for service fittings.
- E. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- F. Provide scribe moldings for closures at junctures of top, curb, and splash, with walls as recommended by manufacturer for materials involved. Match materials and finish to adjacent casework. Use chemical-resistant, permanently elastic sealing compound where recommended by manufacturer.

END OF SECTION

## SECTION 14420

### WHEELCHAIR LIFTS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Vertical wheelchair lifts.

##### 1.2 RELATED SECTIONS

- A. Division 16 Sections for electrical service to lifts, including fused disconnect switches.

##### 1.3 DEFINITIONS

- A. Lift: Complete lift assembly including drive system, guide rails, buffers (if any), platform, runway enclosures and gates, access panels, signals, control system, electrical wiring, and devices necessary to provide specified or "Code"-required performance, operations, safety, and security.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of lift indicated. Include rated capacities, dimensions, performances, operations, safety features, controls, and finishes.
- B. Shop Drawings: For each lift. Show plans, elevations, and details. Show interfaces with other work, including loading on structure, together with indication of required clearances.
- C. Samples: Of exposed finishes for platforms, gates, runways, and control devices; 3 inches (75 mm) square for sheet materials; and 4 inches (100 mm) long for running-trim members.
- D. Maintenance Manuals: Include operating and maintenance instructions, parts list with sources indicated, recommended parts inventory list, emergency instructions, and similar information. Submit for Owner's information at Project Closeout as specified in Division 1 Sections.
- E. Inspection and Acceptance Certificates: Include operating permits as required by governing authorities for normal, unrestricted use of lifts.

##### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage the lift manufacturer or an installer approved by the lift manufacturer who has completed lift installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Regulatory Requirements: In addition to local governing regulations, comply with Part XX of ASME A17.1, "Safety Code for Elevators and Escalators," hereafter, the "Code."

##### 1.6 MAINTENANCE SERVICE

- A. Maintenance: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of the lift Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper lift operation at rated speed and capacity. Provide parts and supplies as used in the manufacture and installation of original equipment.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

#### A. Vertical Wheelchair Lifts:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Access Industries, Inc.
  - b. Concord Elevator, Inc.
  - c. Inclinator Company of America.
  - d.

### 2.2 MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36 (ASTM A 36M).
- B. Steel Tubing: Either cold- or hot-formed steel tubing.
  1. Cold-Formed Steel Tubing: ASTM A 500.
  2. Hot-Formed Steel Tubing: ASTM A 501.
- C. Steel Pipe: ASTM A 53; standard weight (Schedule 40), unless otherwise indicated or required by structural loads.
- D. Carbon-Steel Sheet: Either cold- or hot-rolled, commercial-quality carbon steel.
  1. Cold Rolled: ASTM A 366 (ASTM A 366M).
  2. Hot Rolled: ASTM A 569 (ASTM A 569M).
- E. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653, G90 (ASTM A 653M, Z275) coating designation, commercial quality.
- F. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of alloy and temper designated below for each aluminum form required.
  1. Extruded Aluminum: ASTM B 221 (ASTM B 221M), 6063-T6.
  2. Aluminum Sheet: ASTM B 209 (ASTM B 209M), 5005-H15.
- G. Stainless-Steel Floor Plate: ASTM A 793.
- H. Acrylic Glazing: ASTM D 4802, Category A-1 (cell-cast) or Category A-2 (continuous cast), Finish 1 (smooth or polished), clear or tinted as indicated.
- I. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing structural members, guide rails, machines, and other lift components where installation of devices is specified in another Specification Section.
- J. Expansion Anchors: Anchor-bolt-and-sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 10 times the load imposed as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
  1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
- K. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

### 2.3 VERTICAL WHEELCHAIR LIFTS

- A. Systems and Machinery: Provide manufacturer's standard preengineered lift systems as indicated in published product literature and as follows:
  1. Rated Capacity: 750 lb (340 kg).



## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Vertical Wheelchair Lifts:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Access Industries, Inc.
    - b. Concord Elevator, Inc.
    - c. Inclinator Company of America.
    - d.

### 2.2 MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36 (ASTM A 36M).
- B. Steel Tubing: Either cold- or hot-formed steel tubing.
  - 1. Cold-Formed Steel Tubing: ASTM A 500.
  - 2. Hot-Formed Steel Tubing: ASTM A 501.
- C. Steel Pipe: ASTM A 53; standard weight (Schedule 40), unless otherwise indicated or required by structural loads.
- D. Carbon-Steel Sheet: Either cold- or hot-rolled, commercial-quality carbon steel.
  - 1. Cold Rolled: ASTM A 366 (ASTM A 366M).
  - 2. Hot Rolled: ASTM A 569 (ASTM A 569M).
- E. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653, G90 (ASTM A 653M, Z275) coating designation, commercial quality.
- F. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of alloy and temper designated below for each aluminum form required.
  - 1. Extruded Aluminum: ASTM B 221 (ASTM B 221M), 6063-T6.
  - 2. Aluminum Sheet: ASTM B 209 (ASTM B 209M), 5005-H15.
- G. Stainless-Steel Floor Plate: ASTM A 793.
- H. Acrylic Glazing: ASTM D 4802, Category A-1 (cell-cast) or Category A-2 (continuous cast), Finish 1 (smooth or polished), clear or tinted as indicated.
- I. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing structural members, guide rails, machines, and other lift components where installation of devices is specified in another Specification Section.
- J. Expansion Anchors: Anchor-bolt-and-sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 10 times the load imposed as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
  - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
- K. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

### 2.3 VERTICAL WHEELCHAIR LIFTS

- A. Systems and Machinery: Provide manufacturer's standard preengineered lift systems as indicated in published product literature and as follows:
  - 1. Rated Capacity: 750 lb (340 kg).

2. Rated Speed: 14 fpm (0.08 m/s).
- B. Power Supply: 120 V, 60 Hz, 1 phase.
- C. Control System: Provide key-operated control complying with ASME A17.1.
  1. System Control Voltage: 24 VAC.
- D. Manual Lowering: Provide means to manually lower units in case of malfunction or power loss.
- E. Concealed Wiring: Enclose wiring within housings of units. Do not use conduit exposed to view.
- F. Self-Supporting Units: Support vertical loads of units only at base, with lateral support only at landing levels.
- G. Runway Enclosure: Rectangular steel-tube frame with flush steel-sheet panels.
  1. Gates: Rectangular steel-tube frames glazed with clear acrylic glazing and with 12 inch (300 mm) high, steel kick panels.
- H. Platform: 0.123-inch- (3.1-mm-) thick, galvanized steel sheet with black rubber flooring.
- I. Platform Sides: Rectangular steel-tube frames with flush steel-sheet panels.
- J. Automatic Ramps: Provide ramps matching platforms to transition from floor to lift platform. Ramps lower to floor automatically when lifts reach lower landing and enclosure gates open. Ramps raise automatically when lift control is activated for lift to leave lower landing.

## 2.4 FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to application and designations of finishes.
- B. Steel and Iron Finishes: Prepare and finish iron and steel, including galvanized steel, as follows:
  1. Prepare uncoated ferrous-metal surfaces to comply with SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6, "Commercial Blast Cleaning," followed by a conversion coating of type suited to organic coating applied over it.
  2. Prepare galvanized steel surfaces by removing dirt, grease, and other contaminants followed by a conversion coating of type suited to organic coating applied over it. Clean welds, mechanical connections, and abraded areas; and apply galvanizing repair paint to comply with ASTM A 780.
  3. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard 2-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2.0 mils (0.05 mm).
- C. Aluminum Finishes: Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
  1. Color: As selected by Architect from the full range of industry colors and color densities.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
  1. Enclose wiring within housings of units or building construction. Do not use conduit exposed to view in finished spaces.

- B. Alignment: Coordinate runway gates with platform travel and positioning, for accurate alignment and minimum clearance between platforms, runway gates, sills, and gate frames.
- C. Position sills accurately, raised slightly above adjoining floor surfaces to minimize intrusion of dirt and spillage into runway. Fill space under sills solidly with nonshrink, nonmetallic grout.
- D. Adjust stops for accurate leveling at each landing, within specified tolerances.
  - 1. Leveling Tolerance: 1/4 inch (6 mm) up or down, regardless of load and direction of travel.
- E. Lubricate operating parts of lift, including drive mechanism, guide rails, gates, safety devices, and hardware.

### 3.2 FIELD QUALITY CONTROL

- A. Acceptance Testing: Upon nominal completion of each lift installation, and before permitting the use of lifts, perform acceptance tests as required and recommended by the "Code" and by authorities having jurisdiction.
- B. In addition to above testing, test operate lift continuously between lowest and highest landings served, lifting full-rated capacity load for a minimum period of 30 minutes. Readjust stops and other devices and signal equipment for accurate landings and operation of system.

### 3.3 DEMONSTRATION

- A. Instruct Owner's maintenance personnel in the proper use, operation, and maintenance of lifts. Review emergency provisions, including access and procedures to be followed in checking for sources of operational failures or malfunctions. Confer with Owner on requirements for a complete maintenance program.
- B. Check each lift operation with Owner's maintenance personnel present before time of Substantial Completion. Determine that control system, operating components, and safety devices are functioning properly.

END OF SECTION

- B. Alignment: Coordinate runway gates with platform travel and positioning, for accurate alignment and minimum clearance between platforms, runway gates, sills, and gate frames.
- C. Position sills accurately, raised slightly above adjoining floor surfaces to minimize intrusion of dirt and spillage into runway. Fill space under sills solidly with nonshrink, nonmetallic grout.
- D. Adjust stops for accurate leveling at each landing, within specified tolerances.
  - 1. Leveling Tolerance: 1/4 inch (6 mm) up or down, regardless of load and direction of travel.
- E. Lubricate operating parts of lift, including drive mechanism, guide rails, gates, safety devices, and hardware.

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- A. Acceptance Testing: Upon nominal completion of each lift installation, and before permitting the use of lifts, perform acceptance tests as required and recommended by the "Code" and by authorities having jurisdiction.
- B. In addition to above testing, test operate lift continuously between lowest and highest landings served, lifting full-rated capacity load for a minimum period of 30 minutes. Readjust stops and other devices and signal equipment for accurate landings and operation of system.

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- A. Instruct Owner's maintenance personnel in the proper use, operation, and maintenance of lifts. Review emergency provisions, including access and procedures to be followed in checking for sources of operational failures or malfunctions. Confer with Owner on requirements for a complete maintenance program.
- B. Check each lift operation with Owner's maintenance personnel present before time of Substantial Completion. Determine that control system, operating components, and safety devices are functioning properly.

END OF SECTION

## SECTION 14425

### LU/LA ELEVATORS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Limited use/limited application elevator, consisting of a rail structure with a steel car frame.
- B. Motor and pump, controllers, hoistway equipment, and accessories.

##### 1.2 SYSTEM DESCRIPTION

- A. The elevator assembly shall consist of a power unit, car, rail guide system, 1:2 cable hydraulic lifting device, hoistway doors, car doors, control system, signals and alarms, electrical wiring, and parts and accessories necessary to provide required performance, operation, code and safety requirements.
- B. Characteristics of elevator are as follows:
  - 1. Rated Net Capacity: 1,400 lbs.
  - 2. Rated Speed: 30 ft/min.
  - 3. Shaft Size: 6'-1" x 5'-1".
  - 4. Door Type: Double leaf.
  - 5. Door Operation: Side opening.
  - 6. Number of Stops: 3.
  - 7. Number of Openings: 3 Front.

##### 1.3 SUBMITTALS

- A. Product Data: Provide data on the following items:
  - 1. Signal and operating fixtures, operating panels, indicators.
  - 2. Cab design, dimensions, layout, and components.
  - 3. Cab and hoistway door and frame details.
  - 4. Electrical characteristics and connection requirements.
- B. Shop Drawings: show a complete layout of the elevator equipment detailing dimensions, clearances and location of machinery. Including, but not limited to, the following:
  - 1. Drawings showing the dimensions including plans, elevations, and sections to show equipment locations and their relationship to surroundings.
  - 2. Load and reaction drawings shall be provided by the elevator manufacturer and detailed on drawings.
- C. Samples: Submit two samples, illustrating cab interior finishes, cab and hoistway door and frame finishes, and handrail material and finish.
- D. Owner's Instruction and Maintenance Manuals: After installation is completed, the contractor shall instruct the owner in the proper use, operation and maintenance requirements of the elevator. Instructions to also include emergency procedures and safety rules and precautions. The contractor shall also supply the owner with an Owner's Manual detailing the operating, safety, and maintenance procedures of the elevator.

##### 1.4 QUALITY ASSURANCE

- A. The elevator shall meet or exceed applicable regulations of all governing agencies and be in conformance with ASME/ANSI A17.1a-1996 "Safety Code for Elevators and Escalators", Part XXV. Furthermore, materials and construction shall comply with the current edition of the following codes, standards, and guidelines.
  - 1. ANSI A117.1-1986 "Providing Accessibility and Usability for Physically Handicapped People."
  - 2. NFPA No. 70-93 National Electric Code (NEC).

3. ADAAG Americans with Disabilities Act Accessibility Guidelines.
  4. Applicable Local Building Code
- B. Requirements of the Regulatory Agencies
1. Fabricate and install Work in compliance with all applicable jurisdictional authorities.
  2. File shop drawings and submissions to local authorities as the information is made available. Company pre-inspection and jurisdictional authority inspections and permits are to be made on a timely basis as required. Work will include all inspections and re-inspections that are required to ensure licenses are issued.
- C. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten years experience.
- D. Installer: Company specializing in performing the work of this section and approved by elevator equipment manufacturer.
- E. Pre-Installation Meeting
1. Convene pre-installation meeting one week prior to start of Work.
  2. Require attendance of persons directly involved with the work of this section.
  3. Review schedule of installation, installation procedures and conditions, and coordination with related work.
  4. Review temporary use of elevator for construction purposes, hours of use, scheduling of its use, cleanliness of cab, employment of operator, maintenance of system.
- 1.5 WARRANTY

- A. The elevator contractor shall provide three (3) months free service from date of approval by local authorities. The entire elevator and all component parts shall carry a LIMITED WARRANTY for a period of One (1) Year. The warranty shall be for the replacement at no cost of defective parts but shall not include the labor costs required to replace the defective part or parts.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. FLEXI-LIFT® Elevator model manufactured by Access Industries, Inc.
- B. Horizon Commercial "Lula" Elevator manufactured by Concord Elevator Inc.
- C. Model EH by The National Wheel-O-Vator Co., Inc.

### 2.2 COMPONENTS

- A. Signage: The elevator shall have all necessary signs, capacity plates, and data signs as per the Local and national Codes and Standards. A capacity plate indicating the rated load in pounds and kilograms and operating instructions shall be furnished by the manufacturer and fastened in a conspicuous place at each landing and in the cab. The capacity plate and operating instructions will be engraved on non-glare, micro-surface, white letters on a blue background, self-adhesive, flexible plastic material. The letters and figures stating the capacity shall not be less than 1/4" in height.
- B. Fully Automatic Operation: The operation shall be single button collective. Each landing shall be equipped with a single light up button/digital floor indicator and audible arrival chime. Upon momentary pressure of the landing or car button, the call shall register in the control system and remain in memory until answered
- C. Car Enclosure:
  1. Walls: 1 1/2" Steel cab with 3/4" (13 mm) clip-on fire rated laminated panels. Colors to be manufacturer's standards.

3. ADAAG Americans with Disabilities Act Accessibility Guidelines.
  4. Applicable Local Building Code
- B. Requirements of the Regulatory Agencies
1. Fabricate and install Work in compliance with all applicable jurisdictional authorities.
  2. File shop drawings and submissions to local authorities as the information is made available. Company pre-inspection and jurisdictional authority inspections and permits are to be made on a timely basis as required. Work will include all inspections and re-inspections that are required to ensure licenses are issued.
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- C. Car Enclosure:
  1. Walls: 1 1/2" Steel cab with 3/4" (13 mm) clip-on fire rated laminated panels. Colors to be manufacturer's standards.

2. Ceilings: Non-removable Hi Gloss White Painted Baked Enamel Steel Ceiling with four (4) stainless steel pot lights.
  3. Floor: Steel flooring with plywood sheeting covered with a non-skid rubber flooring.
  4. Handrail: One (1) stainless steel handrail shall be located on control wall of the cab.
  5. Emergency Operation: The car will be equipped with a battery powered emergency lowering and door opening device and alarm which is automatically actuated in the event of failure of the normal building power supply. Battery will be rechargeable type with an automatic recharging system.
  6. Emergency Lighting: In the event of a main power supply failure, an integral, battery powered emergency light will provide cab lighting.
  7. Car Operating Panel: Car operating panel shall consist of illuminated buttons for each landing, mounted on a removable stainless steel panel (Type 304 #4 stainless steel finish).
  8. Floor Indicator: A floor indicator located in the control panel will display the location (floor number) of the elevator in the shaft.
  9. Lighting: The car lighting shall consist of four (4) low voltage stainless steel pot lights. The failure of one lamp shall not cause the remaining lamps to extinguish.
  10. Automatic Lights: Overhead lights in the car compartment shall turn ON automatically when the elevator door is opened and stay ON while the elevator is in use. The elevator lights will shut OFF by a timer when the elevator is not in use.
- D. Platform Toe Guard: A platform toe guard shall be provided at each car entrance opening to extend below car entrance opening for safety.
- E. Leveling Device:
1. The elevator shall be provided with a 2 way leveling device which will maintain the car within 1/2" (13 mm) of the landing by optical sensor.
  2. Leveling device switches shall be located in a position to be inaccessible to unauthorized persons.
  3. Hoistway car position signals shall be optically sensed for quiet operation.
- F. Sliding Hoistway Door/Cab Gate:
1. Cab Door Operation
    - a. Power operated, two speed horizontal sliding, zinc wipe coated, steel panels providing a clear opening of 36" x 80" (914 mm x 2032mm) shall be provided.
    - b. Doors on the car and at the hoistway entrances shall be power operated by means of a solid state 24 volt D.C. operator with smooth quiet belt drive transmission, operable during power failure.
    - c. Door operation shall be automatic at each landing with door opening being initiated as the car arrives at the landing and closing taking place after expiration of an adjustable time interval.
    - d. All control adjustments shall be potentiometer regulated.
    - e. The door shall be equipped with obstruction sensitivity that will stop and reverse the doors should it come in contact with an obstacle.
    - f. The car doors shall be equipped with a master door clutch to control the individual landing door electrical mechanical interlocks.
    - g. The car door electric contact shall prevent the elevator from moving away from the landing unless the car door is in the closed position.
    - h. The car door sill shall be extruded aluminum.
  2. Hoistway Doors
    - a. Two speed horizontal sliding, zinc wipe coated, steel panels providing a clear opening of 36" ( 914 mm) x 80" (2032 mm) shall be provided at each landing.
    - b. Frames shall be of bolted construction for a one piece unit assembly comprised of head and side jamb sections.
    - c. The doors assembly shall be 1 1/2 UL/ULC labeled and provided with approved electrical mechanical interlocks.
    - d. The landing door sill shall be extruded aluminum with non-slip wearing surfaces and grooves for door guides.



3. Photo Eyes Provide a photo eye electric system consisting two (2) photo electric eyes on the leading edge of the sliding door and reflectors on the slam side of the door frame to stop the door should they encounter an obstruction. Locate one (1) photo eye 5" (127 mm) above the sill level and the second photo eye 29" (737 mm) above the sill level.
- G. Hydraulic Power Unit
1. The pump and motor shall be the submersible type installed inside the oil tank.
  2. The controller shall be integrally mounted on the power unit frame.
  3. Control circuitry to be "solid state" and located in car control station panel.
  4. The power unit control valve shall be a two speed proportional valve type that includes all hydraulic control valving inherently.
- H. Negative Pressure Switch: In addition to the standard operating features of the hydraulic control valve, there shall be a pressure sensitive check valve that will activate when negative pressure is sensed in the hydraulic system. The check valve will close and stop the hydraulic jack from descending immediately on sensing negative pressure.
- I. Cylinder and Plunger: The cylinder shall be constructed of steel pipe of a sufficient thickness and suitable safety margin. The top of the cylinder shall be equipped with a cylinder head with an internal guide ring and self adjusting packing. The plunger shall be constructed of a steel shaft of a proper diameter machined true and smooth. The plunger shall be provided with a stop electrically welded to the bottom to prevent the plunger from leaving the cylinder.
- J. Cable: Minimum of two 3/8" (10 mm).
- K. Safety Device: A "slack/broken cable" safety device shall be supplied which will stop and sustain the elevator and its rated load, if either of the hoisting cables becomes slack or breaks. The safety device shall be resettable by the operation of the elevator in the upward direction. A switch shall be mounted in such a position to sense the operation of the safety device, and will open the safety circuit to the controller to prevent operation of the elevator in either direction.
- L. Guide Yolk: The 1:2 guide yoke/sheave arrangement shall be supplied with a sheave, guide shoes, roller bearings and adjustable cable guards. The sheave shall be finished with rounded grooves to fit the cables.
- M. Normal Terminal Stopping Devices: Normal terminal stopping devices shall be optically sensed at the top and bottom of runway to stop the car automatically.
- N. Guide Rails and Brackets:
1. Steel "T" guide rails and brackets shall be securely fastened to the building structure.
  2. Brackets shall securely hold the guides in a plumb and true position regardless of car loading.
  3. Guides shall be bolted through the hoistway enclosure with "back-up" plates, washers and nuts. Subject to architects' alterations and approvals.
- O. Car Sling:
1. Car sling shall be fabricated from steel members with adequate bracing to support the platform and cab.
  2. The buffer striking member on the underside of the car must stop the elevator before the plunger reaches its down limit of travel.
  3. Guide shoes to be slip type or rollers.
- P. Overspeed Governor: Elevator to be equipped with an overspeed governor complete with tension weight and brackets; high strength wire rope and attachment fittings, all in conformance with the applicable code sections. The governor shall be traction driven, self-resetting, field adjustable and be provided with a means to seal the tripping speed.
- Q. Car Top Inspection Station: Provide a car top inspection station consisting of a stop button and constant pressure Up and DOWN button. The car top control will override all other controls. Also provide a 110 volt outlet socket and light.

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- P. Overspeed Governor: Elevator to be equipped with an overspeed governor complete with tension weight and brackets; high strength wire rope and attachment fittings, all in conformance with the applicable code sections. The governor shall be traction driven, self-resetting, field adjustable and be provided with a means to seal the tripping speed.
- Q. Car Top Inspection Station: Provide a car top inspection station consisting of a stop button and constant pressure Up and DOWN button. The car top control will override all other controls. Also provide a 110 volt outlet socket and light.

- R. Wiring: All wiring and electrical connections shall comply with applicable Codes, insulated wiring shall have flame retardant and moisture proof outer covering and shall be run in a conduit or electrical wire ways. Traveling cables shall be flexible and suitably suspended to relieve strain.
- S. Finish: Electrostatically applied baked polyester gloss powder coating paint finish.

### PART 3 EXECUTION

#### 3.1 PREPARATION

- A. Pre-inspect the construction and service requirements for "Work by Others." These requirements will be included in drawings, diagrams, engineering data sheets and special instructions before the work commences.
- B. Provide permanent power to operate the elevator. Provide a Lockable Fused/Cartridge Type Disconnect switch with auxiliary contact/switch for emergency battery lowering. Provide 110 volt lighting supply and Disconnect. Refer to architectural drawings for permanent power specifications and location of the disconnects.
- C. Provide appropriate sleeves for both the electrical conduit and hydraulic line from the power unit enclosure to the hoistway (as shown on drawings). Trenching may be required if the machine room is not adjacent to hoistway.
- D. Provide Machine Room light and light switch, located to comply with applicable Codes and Standards.
- E. Provide an enclosed, plumb and square hoistway with smooth interior surfaces. Include for fascias or furring of hoistway interior where applicable.
  - 1. Suitable lintels over landing entrances are to be provided and provide rough openings as per elevator contractors' shop drawings.
- F. Provide substantially level pit floor slab to support loads indicated on the elevator contractors' shop drawings.
- G. Provide adequate support for guide rail fastenings.
- H. Provide light, receptacle and switch in the pit, located to comply with applicable Code.
- I. Provide pit water proofing or sump pump, if required, as allowed by Code.
- J. Provide pit ladder for pits 3'-0" (914 mm) or more in depth.
- K. Provide finish grouting and masonry around door frames.
- L. Provide finish painting of landing entrances.

#### 3.2 INSTALLATION

- A. Install LU/LA elevator in accordance with these specification, drawings and items required by the local authority having jurisdiction. All installation work in this section to be performed by trained employees of the elevator contractor. Installation shall be in accordance with all regulatory agencies (ref. Part 1.2.3.).

#### 3.3 ADJUSTING

- A. Adjust for smooth acceleration and deceleration of car so not to cause passenger discomfort.
- B. Adjust automatic floor leveling feature at each floor to achieve 1/4 inch (6 mm) from flush.

3.4 CLEANING

- A. Remove protective coverings from finished surfaces.
- B. Clean surfaces and components ready for inspection.

3.5 PROTECTION OF FINISHED WORK

- A. Protect installed work.
- B. Do not permit construction traffic within cab after cleaning.

END OF SECTION

3.4 CLEANING

- A. Remove protective coverings from finished surfaces.
- B. Clean surfaces and components ready for inspection.

3.5 PROTECTION OF FINISHED WORK

- A. Protect installed work.
- B. Do not permit construction traffic within cab after cleaning.

END OF SECTION

**CITY OF PORTLAND, MAINE**  
**HISTORIC PRESERVATION COMMITTEE**

---

January 11, 2002

Geoffrey Rice  
658 Congress Street  
Room 206  
Portland, ME 04101

Edward Hobler, Chair  
Rick Romano, Vice Chair  
Susan Wroth  
Camillo Breggia  
Robert Parker  
Steve Sewall  
Cordelia Pitman

Re: Site alterations at 45-47, 51 State Street

Dear Mr. Rice:

On January 9, 2002, the City of Portland's Historic Preservation Committee reviewed your request for a Certificate of Appropriateness for site improvements to your adjoining properties at 45-47 and 51 State Street. As some of the proposed work had already been completed without historic preservation approval, the application was taken up as an after-the-fact review. Notwithstanding the fact that work had proceeded, the proposed alterations were evaluated for their impact on the property *in its pre-violation condition*.

Following deliberations, the Committee voted 5-0 (Breggia, Pitman absent) as follows:

- To deny the applicant's request to expand the area of pavement, based on the Committee's finding that the expansion failed to meet the Standards for Review of Alterations of the historic preservation ordinance.
- To approve the resurfacing of the existing gravel with bituminous pavement.
- To approve in concept the replication of the original cast iron fence in front of 51 State Street, subject to the condition that final design, specifications, and layout be submitted for staff review and approval.
- To recommend that the replicated cast iron fencing extend up to the northwest corner of the 51 State Street property, leaving an opening for the driveway on the north side of the house.

On January 11, 2002, your consulting engineer, Steve Doe, requested consideration of an amendment to the approved plan that would authorize the installation of pervious pavers at the southern edge of the original gravel drive. As requested, the pavers would be grassed over and would extend no more than 2 feet beyond the existing edge of driveway. Staff, in consultation with the Historic Preservation Committee Chairman, has approved this amendment.

All improvements shall be carried out as shown on the plans and specifications submitted for the January 9, 2002 public hearing, except as to conform with the conditions outlined above.

Changes to the approved plans and specifications and any additional work that may be undertaken must be reviewed and approved by this office prior to construction, alteration, or demolition. If, during the course of completing the approved work, conditions are encountered which prevent completing the approved work, or which require additional or alternative work, you must apply for and receive a Certificate of Appropriateness or Non-Applicability PRIOR to undertaking additional or alternative work.

This Certificate is granted upon condition that the work authorized herein is commenced within twelve (12) months after the date of issuance. If the work authorized by this Certificate is not commenced within twelve (12) months after the date of issuance or if such work is suspended in significant part for a period of one year after the time the work is commenced, such Certificate shall expire and be of no further effect; provided that, for cause, one or more extensions of time for periods not exceeding ninety (90) days each may be allowed in writing by the Department.

Sincerely,

A handwritten signature in cursive script, appearing to read "Deborah G. Andrews".

Deborah G. Andrews  
Historic Preservation Program Manager

Cc: Stephen Doe, Sebago Technics  
David Lourie, esq.  
Approval File

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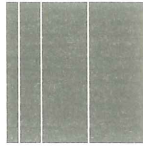
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A handwritten signature in cursive script, appearing to read "Deborah G. Andrews".

Deborah G. Andrews  
Historic Preservation Program Manager

Cc: Stephen Doe, Sebago Technics  
David Lourie, esq.  
Approval File





**Sebago Technics**  
*Engineering & Planning for the Future*

December 28, 2001  
01496

Deborah Andrews, Historic Preservation Program Manager  
Department of Planning & Urban Development  
City of Portland  
389 Congress Street  
Portland, ME 04101

**Amended Site Plan Application, 51 State Street**

Dear Deb:

On behalf of Geoffrey Rice, I am enclosing ten (10) copies of a Historic Preservation Application for Certificate of Appropriateness and nine (9) copies of an Amended Site Plan Application for an after-the-fact parking lot expansion for work performed at 51 State Street. This expansion involved placement of gravel on the abutting parcel (45-47 State Street) owned by High State Apartments which is owned by Mr. Rice. This application request is to allow some of the gravel placed to remain for improved on-site vehicle movement. Currently, the site is very restrictive for off-street parking as well as for snow removal and maintenance operations. The proposed expansion, while minimal in area, will allow the current users to have better maneuverability on site without backing onto State Street or damaging parked vehicles.

The attached Amended Site Plan shows the location of the original limits of gravel, where it is currently, and where we propose the new limit. The current limit of gravel was placed with the intent to park cars at 90° on the 45-47 State Street property, with the travel lane to occur on 51 State Street. Understanding that parking is not permitted in the front yard, this gravel material will be removed and the existing grade and lawn area re-established. A portion of the original drive as well as the proposed line lie within the boundary of 45-47 State Street. Mr. Rice will establish the appropriate access easement language for his properties to allow this activity to occur if so approved.

Other potential improvements proposed which we would like the Historic Preservation Committee to consider are as follows:

1. Restore the original iron fence work along the front of 51 State Street. This fence can be seen in the Historic Preservation documents for this property. Some of the granite bases remain as shown on the attached photos; however, these will need to be replaced given the broken nature of the stones.
2. We also wish to place bituminous pavement over the gravel areas on site.


Attached for your review and consideration are the following documents:

1. Historic Preservation Application for Certificate of Appropriateness (HPA).
2. Photographs of the properties taken on December 21, 2001.
3. City of Portland Site Plan Application (SP) and an application fee of \$400.00 for a minor development.
4. Nineteen (19) copies of a site plan of the property at a scale of 1"=10' showing existing and proposed conditions (10 copies for HPA; 9 copies for SP).
5. In addressing the financial capacity requirement, given the minor nature of this work, Mr. Rice will be funding this project with his own resources.

I trust this package is complete for your review. If you find you need additional information or have questions, please call me. I understand you have placed this project on the January 9<sup>th</sup> hearing with the Historic Preservation Committee.

Sincerely,

SEBAGO TECHNICS, INC.

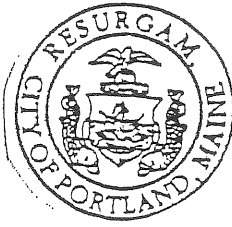


Stephen G. Doe, R.L.A.  
Landscape Architect

SGD:jc  
Enc.

cc: Geoffrey Rice  
David Lourie





Date: \_\_\_\_\_

**HISTORIC PRESERVATION  
APPLICATION FOR CERTIFICATE OF APPROPRIATENESS**

Pursuant to review under the City of Portland's Historic Preservation Ordinance (Chapter 14, Article IX of the Portland City Code), application is hereby made for a Certificate of Appropriateness for the following work on the specified historic property:

Property Name and Address: 51 STATE STREET

APPLICANT

Name: GEOFFRY RICE Telephone <sup>(207)</sup> 772-6788

Company, if applicable: \_\_\_\_\_

Address: 650 CONGRESS ST RM 206  
PORTLAND, ME 04101

PROPERTY OWNER, IF DIFFERENT

Name: SAME Telephone \_\_\_\_\_

Address: \_\_\_\_\_

ENGINEER  
Architect (if any): CONTACT STEVE DOE  
SEBAGO TECHNICS, INC. (207) 856-0277

Contractor or Builder (if any): \_\_\_\_\_

Local Designation:

\_\_\_\_ Landmark  Within Historic District \_\_\_\_ Historic Landscape District

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Owner's Signature (if different)

\*\* Note: No application fee is required. Applicant is responsible for costs of sending notices and placement of legal ad. Such costs shall be paid prior to issuance of Certificate/Building Permit or upon denial

I. DESCRIPTION OF PROJECT

Describe in a separate paragraph each type of proposed exterior architectural alteration, such as window replacement, roof replacement, porch alteration, repointing of masonry, or new addition/construction. Briefly describe the feature or materials affected by the work and give the approximate date that it was constructed, if known. Describe in detail the proposed work and how it will impact the existing feature. Use as many items as necessary to cover all aspects of the project. If more space is needed, continue on a separate page. Reference work items to accompanying drawings or photographs.

SEE ATTACHED LETTER & SITE PLAN  
PACKAGE.

II. ATTACHMENTS

Provide a copy of the plans, renderings, drawings and written specifications of the alteration. To supplement your application, it would be helpful to submit photographs or slides of current conditions, material samples, site plans, sketches, historical documentation, or anything else that will illustrate to the Committee and staff the effect of the proposed change.

The following information is enclosed:

- Exterior photographs
- Sketches, elevation drawings and/or annotated photographs
- Floor plans
- Site plan showing relative location of adjoining structures, if located within a district  
(10 COPIES of 24x36" plan PROVIDED)
- Specifications
- Other (explain) \_\_\_\_\_

Please note: In order to be photocopied by the City, plans or drawings should generally not exceed 11" x 17". If you wish to submit larger plans, please provide 10 copies for distribution.

If you have any questions or need assistance in completing this form, please contact the Historic Preservation staff at 874-8721 or 874-8719 (Deborah Andrews, ext. 8726).

Please return this form and related application materials to:

Department of Planning and Urban Development  
Portland City Hall  
4th Floor  
389 Congress Street  
Portland, ME 04101

Department of Planning & Development  
Lee D. Urban, Director



**CITY OF PORTLAND**

**Division Directors**  
Mark B. Adelson  
Housing & Neighborhood Services

Alexander Q. Jaegerman, AICP  
Planning

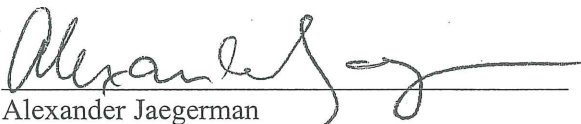
John N. Lufkin  
Economic Development

**TO:** Duane Kline, Finance Department  
**FROM:** Alexander Jaegerman, Planning Division Director  
**DATE:** November 21, 2002  
**SUBJECT:** Request for Release of Performance Guarantee  
Waynefleet School/ Morrill and Cook Hyde Buildings  
ID# 1999-0052 Lead CBL #061F002

Please release the Letter of Credit Account #53815-724 for the Morrill/Cook Hyde buildings at 360 Spring Street.

Current Balance \$ 4,000.00

Approved:

  
Alexander Jaegerman  
Planning Division Director

cc: Sarah Hopkins, Development Review Services Manager  
✓ Jay Reynolds, Development Review Coordinator  
Todd Merkle, Public Works  
Code Enforcement  
file

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Finance Department



Duane G. Kline  
Director

**CITY OF PORTLAND**

December 4, 2002

Mark V. Stasium, Vice President  
Peoples Heritage Bank  
P.O. Box 9540  
Portland, ME 04112-9530

Re: Waynflete School Letter of Credit No. 53815-724  
Morrill & Cook Hyde Buildings Project.

Dear Mr. Stasium:

This is to inform you that I am authorizing the release and return of the above-named letter of credit, which was dated July 13, 1999.

If you require any further information, please let me know.

Sincerely,

Duane G. Kline  
Finance Director

DGK.jlb

pc: Jay Reynolds, Development Review Coordinator

