

## SECTION 101400 - SIGNAGE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Field-applied, vinyl-characters on exterior signage panels.
  - 2. Illuminated, fabricated channel dimensional characters.
- B. Owner's Sign Shop will provide the following:
  - 1. Panel signs.

#### 1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of sign.
- B. Shop Drawings: For dimensional letter signs.
  - 1. Include fabrication and installation details and attachments to other work.
  - 2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
  - 3. Show characters, typestyles, graphic elements, and layout for each sign at least half size.
  - 4. Show locations of electrical service connections.
- C. Samples for Verification:
  - 1. Field-Applied, Vinyl-Character Signs: Full-size Sample of characters on exterior ACM signage panel.
  - 2. Dimensional Characters: Full-size Sample of dimensional character.
- D. Sign Schedule: Use same designations indicated on Drawings.

#### 1.4 FIELD CONDITIONS

- A. Field Measurements: Verify locations of electrical service embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

#### 1.5 COORDINATION

- A. For signs supported by or anchored to permanent construction, advise installers of anchorage devices about specific requirements for placement of anchorage devices and similar items to be used for attaching signs.

## PART 2 - PRODUCTS

### 2.1 FIELD-APPLIED, VINYL-CHARACTER SIGNS

- A. Field-Applied, Vinyl-Character Signs: Prespaced characters die cut from 3- to 3.5-mil thick, weather-resistant vinyl film with release liner on the back and carrier film on the front for on-site alignment and application.
  - 1. Size: As indicated on Drawings.
  - 2. Substrate: Aluminum-faced composite material (ACM), formed with 0.020-inch- thick, coil-coated aluminum sheet facings.
    - a. Panel Thickness: 0.118 inch.
    - b. Core: Standard.
    - c. Exterior Finish: Two-coat fluoropolymer; color to match existing panels.
  - 3. Text and Font: As indicated on Drawings.

### 2.2 DIMENSIONAL CHARACTERS

- A. Fabricated Channel Characters: Metal face and side returns, formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners; and as follows.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. A.R.K. Ramos.
    - b. APCO Graphics, Inc.
    - c. ASI Sign Systems, Inc.
    - d. Big Mouth Signs.
    - e. Gemini, Inc.
    - f. Metal Arts.
    - g. Metallic Arts.
  - 2. Character Material: Sheet or plate aluminum channel with 3/16-inch thick acrylic face.
  - 3. Material Thickness: Manufacturer's standard for size and design of character.
  - 4. Character Font: As indicated on Drawings to match existing.
  - 5. Character Height and Depth: As indicated on Drawings to match existing.
  - 6. Illuminated Characters: Frontlighted character construction with LED lighting, including transformers, insulators, and other accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from character surfaces as needed to illuminate evenly.
    - a. Power: As indicated on electrical Drawings.

- b. Weeps: Provide weep holes to drain water at lowest part of exterior characters. Equip weeps with permanent baffles to block light leakage without inhibiting drainage.
7. Finishes: One of the following, as selected by Architect:
- a. Integral Aluminum Finish: Anodized color as selected by Architect from full range of industry colors and color densities.
  - b. Powder-Coat Finish: Manufacturer's standard, in color as selected by Architect from manufacturer's full range.
8. Mounting: As indicated on Drawings.

### 2.3 DIMENSIONAL CHARACTER MATERIALS

- A. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- C. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

### 2.4 ACCESSORIES

- A. Mounting Methods: Use concealed fasteners fabricated from materials that are not corrosive to sign material and mounting surface.
- B. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Verify that items, including anchor inserts, provided under other sections of Work are sized and located to accommodate signs.
- C. Verify that electrical service is correctly sized and located to accommodate signs.
- D. Examine supporting members to ensure that surfaces are at elevations indicated or required to comply with authorities having jurisdiction and are free from dirt and other deleterious matter.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Locate signs and accessories where indicated, using mounting methods of types described and in compliance with manufacturer's written instructions.
  - 1. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.
- B. Dimensional Characters: Mount characters using standard fastening methods recommended in writing by manufacturer for character form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.
  - 1. Projected Mounting: Mount characters at projection distance from wall surface indicated.
- C. Field-Applied, Vinyl-Character Signs: Clean and dry substrate. Align sign characters in final position before removing release liner. Remove release liner in stages, and apply and firmly press characters into final position. Press from the middle outward to obtain good bond without blisters or fishmouths. Remove carrier film without disturbing applied vinyl film.
  - 1. Install exterior signage panels using galvanized angles top and bottom. Attach ACM panels with self-tapping sheet metal screws top and bottom.

### 3.3 CLEANING AND PROTECTION

- A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

END OF SECTION 101400

## SECTION 102113 - TOILET COMPARTMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes solid-polymer toilet enclosure units.

#### 1.3 SUBMITTALS

- A. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
  - 1. Show locations of cutouts for compartment-mounted toilet accessories.
- B. Samples for Verification: Of each type of color and finish required for units, prepared on 6-inch- square Samples of same thickness and material indicated for Work.

#### 1.4 QUALITY ASSURANCE

- A. Comply with requirements in CID-A-A-60003, "Partitions, Toilets, Complete."

#### 1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication and indicate measurements on Shop Drawings.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **Hiny Hiders Metallic Collection Toilet Partitions by Scranton Products** or Architect approved comparable product by one of the following:
  - 1. Ampco.
  - 2. Bobrick.
  - 3. Columbia Partitions, a Division of PSiSC.
  - 4. Santana Products, Inc.

## 2.2 ENCLOSURE UNITS

- A. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than 1 inch thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of material.
  - 1. Color and Pattern: As indicated on Finish Schedule.
- B. Pilaster Shoes: Stainless steel, ASTM A 666, Type 302 or 304, 3 inches high.
- C. Full-Height (Continuous) Brackets: Manufacturer's standard design.

## 2.3 ACCESSORIES

- A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.
  - 1. Material: Stainless steel.
- B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.
- C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use hot-dip galvanized or other rust-resistant, protective-coated steel.

## 2.4 FABRICATION

- A. Overhead-Braced-and-Floor-Anchored Compartments: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, fasteners, and anchors at pilasters to suit floor conditions. Make provisions for setting and securing continuous head rail at top of each pilaster. Provide shoes at pilasters to conceal supports and leveling mechanism.
- B. Doors: Unless otherwise indicated, provide 24-inch- wide in-swinging doors for standard toilet compartments and 36-inch- wide out-swinging doors with a minimum 32-inch- wide clear opening for compartments indicated to be accessible to people with disabilities.
  - 1. Continuous Hinges: Continuous, full-height stainless steel hinge that swings to a closed position.
  - 2. Latch and Keeper: Manufacturer's standard surface-mounted latch unit designed for emergency access and with combination rubber-faced door strike and keeper. Provide units that comply with accessibility requirements of authorities having jurisdiction at compartments indicated to be accessible to people with disabilities.
  - 3. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent door from hitting compartment-mounted accessories.
  - 4. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.
  - 5. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with accessibility requirements of authorities having jurisdiction. Provide units on both sides of doors at compartments indicated to be accessible to people with disabilities.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
  - 1. Maximum Clearances:
    - a. Pilasters and Panels: 1/2 inch.
    - b. Panels and Walls: 1 inch.
- B. Overhead-Braced-and-Floor-Anchored Compartments: Secure pilasters to floor and level, plumb, and tighten. Secure continuous head rail to each pilaster with not less than 2 fasteners. Hang doors and adjust so tops of doors are parallel with overhead brace when doors are in closed position.
- C. Secure toilet partitions with vandal resistant stainless steel machine screws with expansion anchors at masonry and tile walls, with toggle bolts at hollow walls, and expansion anchors at other walls. Provide stainless steel or polymer resin base trim to conceal floor anchorage and leveling devices

### 3.2 ADJUSTING

- A. Hardware Adjustment: Adjust and lubricate hardware according to manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

END OF SECTION 102113

## SECTION 102600 - WALL AND DOOR PROTECTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Corner guards.
  - 2. Impact-resistant wall coverings.

#### 1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, impact strength, fire-test-response characteristics, dimensions of individual components and profiles, and finishes for each impact-resistant wall-protection unit.
- B. Shop Drawings: For each impact-resistant wall-protection unit showing locations and extent. Include sections, details, and attachments to other work.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
  - 1. Corner Guards: 12 inches long.
  - 2. Impact-Resistant Wall Covering: 6 by 6 inches square.
- D. Material Certificates: For each impact-resistant plastic material, signed by manufacturer.
- E. Maintenance Data: For each impact-resistant wall-protection unit to include in maintenance manuals.
- F. Warranty: Special warranty specified in this Section.

#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain impact-resistant wall-protection units through one source from a single manufacturer.
- B. Fire-Test-Response Characteristics: Provide impact-resistant, plastic wall-protection units with surface-burning characteristics as determined by testing identical products per ASTM E 84, NFPA 255, or UL 723 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."



## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store impact-resistant wall-protection units in original undamaged packages and containers inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

## 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install impact-resistant wall-protection units until building is enclosed and weatherproof, wet work is complete and dry, and HVAC system is operating and maintaining temperature at 70 deg F for not less than 72 hours before beginning installation and for the remainder of the construction period.
- B. Field Measurements: Verify actual locations of walls, columns, and other construction contiguous with impact-resistant wall-protection units by field measurements before fabrication and indicate measurements on Shop Drawings.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Plastic Materials: Chemical- and stain-resistant, high-impact-resistant plastic with integral color throughout; extruded and sheet material as required, thickness as indicated.
- B. Fasteners: Nonmagnetic stainless-steel, or other noncorrosive metal screws, bolts, and other fasteners compatible with items being fastened. Use security-type fasteners where exposed to view.

### 2.2 CORNER GUARDS

- A. Flush-Mounted, Plastic-Cover Corner Guards (CG-1): Manufacturer's standard assembly consisting of snap-on, resilient plastic cover that is flush with adjacent wall surface, installed over retainer; including mounting hardware; fabricated with 90- or 135-degree turn to match wall condition; full wall height.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide **FS-20N Acrovyn Flush Corner Guards by Construction Specialties, Inc.** or Architect approved comparable product by one of the following:
    - a. Arden Architectural Specialties, Inc.
    - b. Balco, Inc.
    - c. IPC Door and Wall Protection Systems; Division of InPro Corporation.
    - d. Korogard Wall Protection Systems; a division of RJF International Corporation.
    - e. Pawling Corporation.
  - 2. Wing Size: Nominal 3 by 3 inches.
  - 3. Mounting: Countersunk screws through factory-drilled mounting holes.
  - 4. Color and Texture: As selected by Architect from manufacturer's full range.

### 2.3 IMPACT-RESISTANT WALL COVERINGS

- A. Impact-Resistant Sheet Wall Covering: Fabricated from plastic sheet wall-covering material.

1. Basis-of-Design Product: Subject to compliance with requirements, provide **Dimension Impact Wall DWP1907 by MDC Wallcoverings** or Architect approved comparable product.
2. Panel Material: High-impact thermoplastic.
3. Panel Size: 4 by 8 feet.
4. Color and Texture: As indicated on Finish Schedule.
5. Trim and Joint Moldings: Extruded rigid plastic that matches sheet wall covering color.
6. Mounting: Adhesive.

#### 2.4 FABRICATION

- A. Fabricate impact-resistant wall-protection units to comply with requirements indicated for design, dimensions, and member sizes, including thicknesses of components.
- B. Assemble components in factory to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.
- C. Fabricate components with tight seams and joints with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.

#### 2.5 METAL FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  1. Remove tool and die marks and stretch lines, or blend into finish.
  2. Grind and polish surfaces to produce uniform finish, free of cross scratches.
  3. Run grain of directional finishes with long dimension of each piece.
  4. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
- B. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and wall areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

#### 3.2 PREPARATION

- A. Complete finishing operations, including painting, before installing impact-resistant wall-protection system components.
- B. Before installation, clean substrate to remove dust, debris, and loose particles.

### 3.3 INSTALLATION

- A. General: Install impact-resistant wall-protection units level, plumb, and true to line without distortions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.
  - 1. Install impact-resistant wall-protection units in locations and at mounting heights indicated on Drawings.
- B. Impact-Resistant Wall Covering: Install top and edge moldings, corners, and divider bars as required for a complete installation.

### 3.4 CLEANING

- A. Immediately after completion of installation, clean plastic covers and accessories using a standard, ammonia-based, household cleaning agent.

END OF SECTION 102600

## SECTION 102800 – TOILET, BATH AND LAUNDRY ACCESSORIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Bathroom accessories.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include the following:
  - 1. Construction details and dimensions.
  - 2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
  - 3. Material and finish descriptions.
  - 4. Features that will be included for Project.
  - 5. Manufacturer's warranty.
- B. Samples: Full size, for each accessory item to verify design, operation, and finish requirements.
  - 1. Approved full-size Samples will be returned and may be used in the Work.
- C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
- D. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: For products listed together in the same articles in Part 2, provide products of same manufacturer unless otherwise approved by Architect.

#### 1.5 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

## 1.6 WARRANTY

- A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: 15 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.0312-inch minimum nominal thickness, unless otherwise indicated.
- B. Brass: ASTM B 19 flat products; ASTM B 16, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.
- C. Nickel Coating: ASTM B 151/B 151M, Alloy UNS No. C74500 or No. C77600.
- D. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- E. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

### 2.2 BATHROOM ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide accessories by one of the following:
  - 1. Toilet and Bath Accessories:
    - a. Bobrick Washroom Equipment, Inc. (Basis of Design)
    - b. ASI.
    - c. Bradley.
    - d. GAMCO.
- B. Products: Subject to compliance with requirements, provide one of the products indicated for each designation in the Toilet Accessory Schedule on the Drawings.

### 2.3 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET ACCESSORY SCHEDULE

| <u>Type</u> | <u>Description</u>       | <u>Bobrick No.</u>                                            |
|-------------|--------------------------|---------------------------------------------------------------|
| BCS-1       | Baby Changing Station    | Koala Kare KB200-SS                                           |
| BCS-2       | Baby Changing Station    | Koala Kare KB110-SSRE                                         |
| GB          | Grab Bar                 | B-550 series, in configurations indicated                     |
| HD          | Hand Dryer               | World Hand Dryer VERDEdri Q-973A<br>(brushed stainless steel) |
| CH          | Coat Hook                | B-2116                                                        |
| MH          | Mop Holder               | B-239 x 34                                                    |
| MF          | Mirror (framed)          | B-290, 18x36                                                  |
| PTD         | Paper Towel Dispenser    | Owner Furnished / Contractor Installed                        |
| SD          | Soap Dispenser           | Owner Furnished / Contractor Installed                        |
| SND         | Sanitary Napkin Disposal | Owner Furnished / Contractor Installed                        |
| TTD         | Toilet Tissue Dispenser  | Owner Furnished / Contractor Installed                        |

END OF SECTION 102800

## SECTION 104413 - FIRE EXTINGUISHER CABINETS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Portable fire extinguishers.
  - 2. Fire-extinguisher cabinets.

#### 1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire-protection cabinets.
  - 1. Fire Extinguishers: Include rating and classification.
  - 2. Fire-Protection Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style
- B. Maintenance Data: For fire extinguishers and fire-protection cabinets to include in maintenance manuals.

#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain fire extinguishers and fire-protection cabinets through one source from a single manufacturer.
- B. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.
- C. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
- D. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to fire protection cabinets including, schedules and coordination requirements.

#### 1.5 COORDINATION

- A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

#### 1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of portable fire extinguishers that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure of hydrostatic test according to NFPA 10.
    - b. Faulty operation of valves or release levers.
  - 2. Warranty Period: Six years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Fire Extinguisher Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:
  - 1. Ansul
  - 2. Badger
  - 3. Amerex
  - 4. Buckeye
- B. Cabinet Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:
  - 1. Cato
  - 2. JL Industries, Inc.
  - 3. FSP Industrial.
  - 4. Badger Fire Protection.
  - 5. Larsen's Manufacturing Company.
  - 6. Potter Roemer; Div. of Smith Industries, Inc.

### 2.2 MATERIALS

- A. Stainless-Steel Sheet: ASTM A 666, Type 304.

### 2.3 PORTABLE FIRE EXTINGUISHERS

- A. General: Provide fire extinguishers of type, size, and capacity for each fire-protection cabinet indicated.
  - 1. Valves: Nickel-plated polished brass body.
  - 2. Handles and Levers: Stainless steel.
  - 3. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.
- B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 4-A:80-B:C, 10-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.
- C. Wet-Chemical Type (K Class for Kitchen): UL-rated 2-A:K, 1.6-gal. nominal capacity, with potassium-based chemical in stainless-steel container; with pressure-indicating gage.



2.4 FIRE-PROTECTION CABINET (FEC-1)

- A. Basis-of-Design Product: "Chief Fire Extinguisher Cabinet 105-10" by CATO, Inc. or approved equal.
- B. Cabinet Type: Suitable for fire extinguisher.
- C. Cabinet Construction: Nonrated.
- D. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall with no trim.
- E. Material: Frame injection molded of white virgin high-impact crystal polystyrene of .110 wall thickness with ultra-violet inhibitors, virgin acrylic Plaskolite® panel of .080 thickness; white color.
- F. Door Style: Grid-scored, UV-resistant break panel for emergency access.
- G. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
  - 1. Provide cylinder lock with key.
  - 2. Provide white injection molded hammer with stainless steel, clear nylon-coated cable.
- H. Identification: Lettering and graphics complying with authorities having jurisdiction.

2.5 FIRE-PROTECTION CABINET (FEC-2)

- A. Basis-of-Design Product: "Architectural Series" by Larsen's Manufacturing Co. or approved equal.
- B. Cabinet Type: Suitable for fire extinguisher.
- C. Cabinet Construction: Nonrated.
- D. Semirecessed Cabinets: Cabinet box partially recessed in walls of shallow depth to suit style of trim indicated.
  - 1. Rolled-Edge Trim: 2-1/2-inch backbend depth.
- E. Door and Trim Material: Stainless steel sheet.
- F. Door Style: Solid opaque panel.
- G. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
  - 1. Provide projecting lever handle with cam-action latch.
  - 2. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.
- H. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.
  - 1. Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."

## 2.6 FIRE-PROTECTION CABINET (FEC-3)

- A. Basis-of-Design Product: "Occult Series" by Larsen's Manufacturing Co. or approved equal.
- B. Cabinet Type: Suitable for fire extinguisher.
- C. Cabinet Construction: Nonrated.
- D. Recessed Cabinet:
  - 1. Trimless with Concealed Flange: Surface of surrounding wall finishes flush with exterior finished surface of cabinet frame and door, without overlapping trim attached to cabinet. Provide recessed flange, of same material as box, attached to box to act as drywall bead.
- E. Door and Trim Material: Stainless steel sheet.
- F. Door Style: Solid opaque panel.
- G. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
  - 1. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.
- H. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.
  - 1. Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."

## 2.7 FABRICATION

- A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.
  - 1. Weld joints and grind smooth.
- B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected.
  - 1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum ½" thick.
  - 2. Miter and weld perimeter door frames.
- C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

## 2.8 STAINLESS-STEEL FINISHES

- A. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
  - 1. Run grain of directional finishes with long dimension of each piece.
  - 2. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
  - 3. Directional Satin Finish: No. 4.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine walls and partitions for suitable framing depth and blocking where semirecessed cabinets will be installed.
- B. Examine fire extinguishers for proper charging and tagging.
  - 1. Remove and replace damaged, defective, or undercharged units.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Prepare recesses for fire-protection cabinets as required by type and size of cabinet and trim style.

### 3.3 INSTALLATION

- A. General: Install fire-protection specialties in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.
- B. Fire-Protection Cabinets: Fasten fire-protection cabinets to structure, square and plumb.
  - 1. Fire-Protection Cabinets: 54 inches above finished floor to top of cabinet or 48 inches to the handle of the fire extinguisher.
- C. Identification: Apply decals or vinyl lettering at locations indicated.

### 3.4 ADJUSTING AND CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as fire-protection specialties are installed, unless otherwise indicated in manufacturer's written installation instructions.
- B. Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.
- C. On completion of fire-protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.
- D. Touch up marred finishes, or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire-protection cabinet manufacturer.
- E. Replace fire-protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 104413

## SECTION 105113 - METAL LOCKERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Welded, open-front athletic lockers.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of metal locker.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal locker.
- B. Shop Drawings: For metal lockers.
  - 1. Include plans, elevations, sections, details, and attachments to other work.
  - 2. Show locker trim and accessories.
  - 3. Include locker identification system and numbering sequence.
- C. Samples for Verification: For the following products, in manufacturer's standard size:
  - 1. Lockers and equipment.
- D. Product Schedule: For lockers. Use same designations indicated on Drawings.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Sample Warranty: For special warranty.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver metal lockers until spaces to receive them are clean, dry, and ready for their installation.

- B. Deliver combination control charts to Owner by registered mail or overnight package service.

#### 1.7 FIELD CONDITIONS

- A. Field Measurements: Verify actual dimensions of recessed openings by field measurements before fabrication.

#### 1.8 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that metal lockers can be supported and installed as indicated.

#### 1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of metal lockers that fail in materials or workmanship, excluding finish, within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures.
    - b. Faulty operation of latches and other door hardware.
  - 2. Damage from deliberate destruction and vandalism is excluded.
  - 3. Warranty Period for Welded Metal Lockers: Lifetime from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain metal lockers and accessories from single source from single locker manufacturer.

#### 2.2 PERFORMANCE REQUIREMENTS

- A. Accessibility Requirements: For lockers indicated to be accessible, comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC A117.1.

#### 2.3 WELDED, OPEN-FRONT ATHLETIC LOCKERS

- A. Basis-of-Design Products: Subject to compliance with requirements, provide one of the following:
  - 1. List Industries.; All Star Sports Locker.
  - 2. Penco Products, Inc.; Welded Stadium Locker.
  - 3. Salsbury Industries; Open Access Standard Locker.
- B. Locker Arrangement: Open front, with seat/shelf upper shelf with security box.
  - 1. Overall Size: 24 inches wide by 18 inches deep by 72 inches high.

- C. Material: Cold-rolled steel sheet.
- D. Body: Assembled by welding body components together. Fabricate from unperforated steel sheet with thicknesses as follows:
  - 1. Tops and Bottoms: 0.060-inch nominal thickness, with single bend at edges.
  - 2. Backs: 0.048-inch nominal thickness.
  - 3. Shelves: 0.060-inch nominal thickness, with double bend at front and single bend at sides and back.
- E. Expanded-Metal Sides: Fabricated from 0.090-inch nominal-thickness expanded metal; welded to 0.105-inch nominal-thickness steel angles or 0.060-inch nominal-thickness steel channel frames.
- F. Frames: Channel formed; fabricated from 0.060-inch nominal-thickness steel sheet or 0.105-inch nominal-thickness steel angles; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames.
- G. Reinforced Bottoms: Structural channels, formed from 0.075-inch nominal-thickness steel sheet; welded to front and rear of side-panel frames.
- H. Seats/Shelves: Full width of metal locker; channel formed; fabricated from 0.075-inch nominal-thickness steel sheet; with stiffeners for reinforcement.
- I. Security Boxes: Consisting of partition extending from upper shelf to top of metal locker, fabricated from 0.060-inch nominal-thickness steel sheet; with channel-formed, 0.060-inch nominal-thickness, steel sheet door frame, and door fabricated from 0.075-inch nominal-thickness steel sheet with right-angle single bend at edges; with manufacturer's standard, steel continuous hinge that is completely concealed and tamper resistant when door is closed; fabricated to swing 180 degrees.
  - 1. Single-Point Latching: Stainless-steel strike plate with integral pull; with steel, nonmoving latch hook designed to engage bolt of built-in combination or cylinder lock.
- J. Identification Plates: Manufacturer's standard, etched, embossed, or stamped aluminum plates, with numbers and letters at least 3/8 inch high.
- K. Hooks: Manufacturer's standard ball-pointed type, aluminum or steel; zinc plated.
- L. Coat Rods: Manufacturer's standard.
- M. Recess Trim: Fabricated from 0.048-inch nominal-thickness steel sheet.
- N. Filler Panels: Fabricated from 0.048-inch nominal-thickness steel sheet.
- O. Materials:
  - 1. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B, suitable for exposed applications.
- P. Finish: Baked enamel or powder coat.
  - 1. Color: As selected by Architect from manufacturer's full range.

## 2.4 LOCKS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. American Locker Company; A Division of Master Lock Company, LLC.
  - 2. Master Lock Company, LLC.
  - 3. Zephyr Lock LLC.
- B. Combination Padlocks: Provided by User.
- C. Built-in Combination Locks: Key-controlled, three-number dialing combination locks; capable of at least five combination changes made automatically with a control key.
  - 1. Bolt Operation: Manually locking deadbolt or automatically locking spring bolt.

## 2.5 FABRICATION

- A. Fabricate metal lockers square, rigid, without warp, and with metal faces flat and free of dents or distortion. Make exposed metal edges safe to touch and free of sharp edges and burrs.
  - 1. Form body panels, doors, shelves, and accessories from one-piece steel sheet unless otherwise indicated.
  - 2. Provide fasteners, filler plates, supports, clips, and closures as required for complete installation.
- B. Fabricate each metal locker with an individual door and frame; individual top, bottom, and back; and common intermediate uprights separating compartments. Factory weld frame members of each metal locker together to form a rigid, one-piece assembly.
- C. Equipment: Provide each locker with an identification plate, shelf and two single-prong wall hooks.
- D. Welded Construction: Factory preassemble metal lockers by welding all joints, seams, and connections; with no bolts, nuts, screws, or rivets used in assembly of main locker groups. Factory weld main locker groups into one-piece structures. Grind exposed welds flush.
- E. Accessible Lockers: Fabricate as follows:
  - 1. Locate bottom shelf no lower than 15 inches above the floor.
  - 2. Where hooks, coat rods, or additional shelves are provided, locate no higher than 48 inches above the floor.
- F. Continuous Base: Formed into channel or zee profile for stiffness, and fabricated in lengths as long as practical to enclose base and base ends of metal lockers; finished to match lockers.
- G. Continuous Sloping Tops: Fabricated in lengths as long as practical, without visible fasteners at splice locations; finished to match lockers.
  - 1. Sloping-top corner fillers, mitered.
- H. Recess Trim: Fabricated with minimum 2-1/2-inch face width and in lengths as long as practical; finished to match lockers.
- I. Filler Panels: Fabricated in an unequal leg angle shape; finished to match lockers. Provide slip-joint filler angle formed to receive filler panel.

- J. Boxed End Panels: Fabricated with 1-inch- wide edge dimension, and designed for concealing fasteners and holes at exposed ends of nonrecessed metal lockers; finished to match lockers.
    - 1. Provide one-piece panels for double-row (back-to-back) locker ends.
  - K. Finished End Panels: Designed for concealing unused penetrations and fasteners, except for perimeter fasteners, at exposed ends of nonrecessed metal lockers; finished to match lockers.
    - 1. Provide one-piece panels for double-row (back-to-back) locker ends.
  - L. Center Dividers: Full-depth, vertical partitions between bottom and shelf; finished to match lockers.
- 2.6 ACCESSORIES
- A. Fasteners: Zinc- or nickel-plated steel, slotless-type, exposed bolt heads; with self-locking nuts or lock washers for nuts on moving parts.
  - B. Anchors: Material, type, and size required for secure anchorage to each substrate.
    - 1. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls for corrosion resistance.
    - 2. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine walls and floors, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. General: Install lockers level, plumb, and true; shim as required, using concealed shims.
  - 1. Anchor locker runs at ends and at intervals recommended by manufacturer, but not more than 36 inches o.c. Using concealed fasteners, install anchors through backup reinforcing plates, channels, or blocking as required to prevent metal distortion.
  - 2. Anchor single rows of metal lockers to walls near top and bottom of lockers.
  - 3. Anchor back-to-back metal lockers to floor.
- B. Welded Lockers: Connect groups together with standard fasteners, with no exposed fasteners on face frames.
- C. Equipment:
  - 1. Attach hooks with at least two fasteners.
  - 2. Attach door locks on doors using security-type fasteners.
  - 3. Identification Plates: Identify metal lockers with identification indicated on Drawings.



- a. Attach plates to each locker door, near top, centered, with at least two aluminum rivets.
  - b. Attach plates to upper shelf of each open-front metal locker, centered, with a least two aluminum rivets.
- D. Trim: Fit exposed connections of trim, fillers, and closures accurately together to form tight, hairline joints, with concealed fasteners and splice plates.
- 1. Attach recess trim to recessed metal lockers with concealed clips.
  - 2. Attach filler panels with concealed fasteners. Locate filler panels where indicated on Drawings.
  - 3. Attach sloping-top units to metal lockers, with closures at exposed ends.
  - 4. Attach boxed end panels using concealed fasteners to conceal exposed ends of nonrecessed metal lockers.
  - 5. Attach finished end panels using fasteners only at perimeter to conceal exposed ends of nonrecessed metal lockers.

### 3.3 ADJUSTING

- A. Clean, lubricate, and adjust hardware. Adjust doors and latches to operate easily without binding. Verify that integral locking devices operate properly.

### 3.4 PROTECTION

- A. Protect metal lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit use during construction.
- B. Touch up marred finishes, or replace metal lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 105113

## SECTION 107116 – STORM PROTECTION SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Modular polycarbonate storm panel system.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 08 Section "Aluminum-Framed Entrances and Storefronts" for sliding windows to receive storm protection panels.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Plastic sheets shall withstand normal temperature changes, wind, and impact loads without failure, including loss or breakage of plastic sheets attributable to the following: deterioration of plastic sheet and glazing materials, or other defects in materials and installation.
- B. Windborne-Debris-Impact Resistance: Exterior plastic sheet shall comply with basic-protection testing requirements in ASTM E 1996 for Wind Zone 4 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than plastic sheet indicated for use on Project and shall be installed in same manner as indicated for use on Project.
  - 1. Large-Missile Test: For plastic glazing located within 30 feet of grade.
  - 2. Small-Missile Test: For plastic glazing located more than 30 feet above grade.

#### 1.4 SUBMITTALS

- A. Product Data for each type of storm protection panel system required, including construction details, dimensions of components, profiles, and finishes.
- B. Shop Drawings for each type of storm protection panel system required showing fully dimensioned plans, elevations, sections, and details. Show anchors, grounds, and reinforcement for items attached to permanent construction. Include information not fully detailed in Product Data.
  - 1. Include Setting Drawings, templates, and installation instructions for anchor bolts and other anchorages.
  - 2. Provide drawing for each opening.
- C. Samples for verification of the following:

1. Panel frame material, indicating color required.
2. Fastener system components, one of each component.

D. Performance Test Reports:

1. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
2. ASTM E1886: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
3. ASTM E1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten (10) consecutive years and which can show evidence of those materials being satisfactorily used on at least six (6) projects of similar size, scope and location.
- B. Installer Qualifications: Engage an experienced Installer who has completed installation of storm protection panel system similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- C. Code Standard: Provide storm protection panel systems designed and installed to withstand the effects of wind pressures according to the International Building Code.
- D. Single-Source Responsibility: Provide each type of storm protection panel system as a complete unit produced by a single manufacturer, including necessary mounting accessories, fittings, and fastenings.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver storm protection panel systems until construction is ready for their installation. Protect units from damage during delivery, storage, handling, and installation.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Where components are indicated to be fitted to other construction, verify dimensions of other construction by field measurements before fabrication and show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.8 WARRANTY

- A. Warranty: Manufacturer agrees to repair or replace components of storm protection system that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
  1. Warranty Period: Ten years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Gallina USA, LLC.
  2. Guardian Storm Protection.
  3. Shade & Shutter Systems, Inc.
  4. Hurricane Shutters Florida (Basis of Design).

### 2.2 MATERIALS

- A. Polycarbonate Sheet: ASTM C 1349, Appendix X1, Type I (standard, UV stabilized), with a polished finish.
- B. 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, 6063-T6.
  2. Aluminum Sheet: ASTM B 209, 5005-H15.

### 2.3 STORM PROTECTION PANELS

- A. Provide corrugated polycarbonate panels in manufacturer's standard configuration. Panels shall be factory pre-cut to length and key hole punched top and bottom at 6.134 inch intervals. Panel spans shall not exceed values established by the manufacturer or as established by approved test reports. Clear panels to have consistent visual transparency with minimal optical distortion.
1. Panel Wall Thickness: .110inches.
  2. Panel Clips made of fiber/nylon and affixed to each panel per manufacturers requirements.
  3. Corrugation peaks and valleys must match for efficient stacking and storage.
  4. No center storm bracing. Panels shall affix at top and bottom in accordance with manufacturers tested and approved attachment guidelines.
  5. Panels shall bear permanent markings specifying testing compliance in accordance with ASTM E330, E1886 and E1996.
  6. Number panels to corresponding window location number.

### 2.4 ACCESSORIES

- A. Inserts and Anchorages: Furnish inserts and anchoring devices for installing units. Coordinate delivery of inserts and anchoring devices with other work to avoid delaying installation.
- B. Fasteners: Provide suitable screws, bolts, and other fastening devices of same material as items being fastened. Fasteners applied to exterior and exposed to weather to be stainless steel or aluminum. Use tamperproof fasteners where exposed to view.

### 2.5 FABRICATION

- A. Fabricate units to be square, rigid, and free of dents or distortion, with edges flat. Weld metal members together to form rigid, one-piece structures. Grind, fill, and dress welds to produce smooth, flush, exposed surfaces in which welds are not visible after final finishing is completed. Ease exposed metal edges unless hemmed and ground smooth.
- B. Assemble units in shop to greatest extent practical, to minimize field assembly. Disassemble units only to extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

## 2.6 FINISHES

- A. General: Comply with NAAMM AMP 501, NAAMM AMP 502, and NAAMM AMP 503 for recommendations relative to applying and designating finishes.
- B. Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
  - 1. Color: Custom color as selected by Architect.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, supporting structure and installation conditions. Do not proceed with channel installation until unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Metal Protection:
  - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
  - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.
  - 3. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods recommended by manufacturer.

### 3.3 INSTALLATION

- A. Install the panel system in accordance with the manufacturer's installation recommendations and approved engineering and/or shop drawings.
  - 1. Anchor component parts securely in place by permanent mechanical attachment system.
  - 2. Verify the fit of pre-cut panels to corresponding channels at each window and door location to be protected.
  - 3. All openings are to be marked and numbered by location.

3.4 ADJUST AND CLEAN

- A. Adjust storm protection panel systems to be easily installable by building Owner.
- B. Repair damaged finishes so no evidence remains of corrective work. Use only materials and procedures recommended by manufacturer. Replace units that cannot be restored to factory-finished appearance.

END OF SECTION 107116

## SECTION 107313 – MANUFACTURED METAL CANOPIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Wall-mounted pre-engineered aluminum metal canopies.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Metal canopies shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Structural Performance: Provide metal canopy assemblies capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, based on testing according to ASTM E 1592:
  - 1. Wind Loads: Determine loads based on the minimum design wind pressures as indicated on Drawings.
  - 2. Snow Loads: 10 lbf/sq. ft.
  - 3. Deflection Limits: Metal canopy assemblies shall withstand wind and snow loads with vertical deflections no greater than 1/180 of the span.
- C. Seismic Performance: Provide metal canopies capable of withstanding the effects of earthquake motions determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."
- D. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

#### 1.4 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal canopy.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Canopy supplier to furnish complete canopy CAD drawings signed and sealed by a professional engineer licensed in the state where the canopy will be installed.

1. Design Data: Design calculations bearing the seal of a Registered Professional Engineer, licensed in the state where the project is located. Design calculations shall state that the canopy system design complies with the wind requirements of ASCE 7, the stability criteria of applicable building code, and all other governing criteria.

C. Samples for Verification: For each type of exposed finish required, prepared on 6-by-6-inch square Samples.

D. Maintenance Data: For metal canopies and finishes to include in maintenance manuals.

#### 1.5 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of metal canopies and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements."

1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

B. Welding: Qualify procedures and personnel according to the following:

1. Perform welding in accordance with ANSI/AWS D1.2, Structural Welding Code - Aluminum.
2. Provide an all welded extruded aluminum system complete with internal drainage. Non-welded systems are not acceptable.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

#### 1.6 PROJECT CONDITIONS

A. Field Measurements: Contractor shall verify actual locations of walls and other construction contiguous with pre-engineered metal canopy by field measurements before fabrication and indicate measurements on Shop Drawings.

1. Established Dimensions: Contractor shall, where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal canopy without field measurements. Coordinate wall, floor, and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

#### 1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal canopies that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Structural failures.
- b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: One year from date of Substantial Completion.



- B. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal canopies that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Mapes Industries, Inc.
  - 2. Peachtree Protective Covers, Inc.
  - 3. Dittmer Architectural Aluminum.
  - 4. Avadek Walkway Cover Systems.

### 2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

### 2.3 NONFERROUS METALS

- A. Aluminum Extrusions: ASTM B 221, Alloy 6063-T6.
- B. Aluminum Flashing: ASTM B 209, Type 3003 H14, 0.040 inch, minimum.

### 2.4 FASTENERS

- A. Fasteners: Aluminum, 18-8 stainless steel, or 300 series stainless steel.

### 2.5 MISCELLANEOUS MATERIALS

- A. Gaskets: Neoprene "O" ring beneath conical washers.
- B. Gaskets: Dry seal santoprene pressure type.
- C. Aluminum Flashing: ASTM B 209, Type 3003 H14, 0.040 inch, minimum.
- D. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for exterior applications.

## 2.6 FABRICATION

- A. General: Assemble components in shop to greatest extent possible to minimize field assembly. Pre-engineered metal canopy shall be capable of withstanding structural and other loads indicated, thermally induced movement, and exposure to weather without failure or infiltration of water.
- B. Form metal canopies to required shapes and sizes, with true lines and angles, square, rigid, and without warp, with metal faces flat and free of dents or distortion. Make exposed metal edges and corners free of sharp edges and burrs, and safe to touch.
- C. Deck Construction: Fabricate from extruded modules that interlock in a self-flashing manner. Positively fasten interlocking joints creating a monolithic structural unit capable of developing the full strength of the sections. The fastenings must have minimum shear strength of 350 pounds each. Assemble deck with sufficient camber to offset dead load deflection.
- D. Beams: Provide open-top tubular extrusion, top edges thickened for strength and designed to receive deck members in self-flashing manner.
- E. Deck: Extruded self-flashing sections interlocking into a composite unit. Provide welded plate closures at deck ends.
- F. Fascia: Manufacturer's standard shape. Provide fascia splices where continuous runs of fascia are jointed. Locate splices to be in line with bents and fasten in place on hidden or non-vertical surfaces.
- G. Hanger Rods: Extruded aluminum, 6063-T6 alloy and temper; pre-finished; color as selected by Architect.
- H. Drainage: Allow water to drain from covered surfaces into intermediate trough and be directed to front scupper.
- I. Comply with ANSI/AWS D1.2 for recommended practices in shop welding. Provide welds behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded joints of flux, and dress exposed and contact surfaces.
- J. Where dissimilar metals will contact each other, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturers of dissimilar metals.

## 2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.8 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, roughing-in openings, clearances, and other conditions affecting performance of work.
  - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Install metal canopies level and plumb, according to manufacturer's written instructions and roughing-in drawings.
  - 1. Metal Protection: Where metals will contact grout, concrete, masonry, wood, or dissimilar metals, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturers of dissimilar metals.
- B. Bolted Connections:
  - 1. All structural erection bolts to conform to ASTM A325.
  - 2. Flat structural washers (minimum of one) shall be used on all bolted connections
  - 3. All bolts shall be tightened using AISC turn-of-the-nut method (unless otherwise specified).
- C. Screws:
  - 1. Fastening shall be performed per installation prints provided by the manufacturer.
  - 2. Installation screws shall be furnished with electrode deposited cadmium coating unless otherwise noted.
  - 3. Self-drilling and self-tapping screws shall have a sufficient cut point and a ½-inch O.D. dished tapping metal backed neoprene washer.
- D. Erect protective cover true to line, level, and plumb.
- E. Provide hairline miters and fitted joints.

3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal canopies are installed, unless otherwise indicated in manufacturer's written installation instructions.
- B. Touch up marred finishes, or replace metal canopies that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by metal canopy manufacturer.
- C. Replace metal canopies that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 107313