



LIC: AR94778

### **Addendum No. 3**

**Date:** August 09, 2024

**Project:** Hillsborough County Sheriff's Office Regional Canine Training Facility

**Owner:** Hillsborough County Sheriff's Office  
2214 North Falkenburg Road  
Tampa, FL 33619

**Architect:** The Lunz Group  
58 Lake Morton Drive  
Lakeland, Florida 33801-5344

**Architect's Project Number:** 23164.01

The purpose of this addendum is to advise all interested parties of the following revisions and/or clarifications and to transmit the information as noted below. The addendum constitutes a part of the Contract Documents. Acknowledge receipt of this addendum on the Bid Proposal Form.

#### **PART 1 GENERAL:**

1. Please reference the attached bid RFI responses numbered 1-18 (Q&A list).
2. Roofing to be equivalent to GAF 6 mil minimum TPO with ½" high density polyiso protection board with "ultra-facer" reinforcement installed over insulation and attached with the "Rhino Bond" system. All products are to be installed according to roofing manufacturer's recommendations (see attached Q&A list, item 18).
3. The HVAC main duct running down the center of the dog kennel room number 106 shall be round in lieu of rectangular as indicated. Duct work in kennel to be painted.
4. Reference the revised door hardware specification section 087100 (attached).
5. Refer to attached specification section 323113 for chain link fence and gates.

Enclosures:  
Q&A List numbered 1 - 18  
Specification Section 087100  
Specification Section 323113

End of Addendum No. 3

#	Relevant Specification	Questions	Answers
1		Please provide the specs for fences and gates scope. what color the fence, the design build of the fence, post size requirements, framework requirements, chain link mesh requirements, footer size requirements. All of these items were not in the specifications or drawings. Please advise.	Reference attached fence specification 323113.
2		Please provide the specs for the roof penetration plans that show a roof hydrant and a RTU1. Please advise.	There are no roof hydrants - refer to drawings submitted as addendum no. 2. Reference details 2/S-05, A-550, A-551, A-552, M-501 and M-502.
3		Sheet E-001 (Site Lighting) shows (2) S1 fixtures and (5) S2 fixtures. Sheet E-002 (Photometric Plan) shows (2) S1 fixtures and (6) S2 fixtures. Which one is correct?  Sheet E-101 (Lighting) shows (5) W fixtures and (7) WE fixtures. Sheet E-002 (Photometric Plan) shows (7) W fixtures, (4) WE fixtures, (3) W1 fixtures and (3) W1E fixtures. Which one is correct	See answers 24 and 25 on Q&A 1 issued in addendum no. 1.
4		Fixtures W1 and W1E are not listed on the lighting schedule (sheet E-702). They are listed in the schedule on the photometric plan (sheet E-002) but vague.	See answer 26 on Q&A 1 issued in addendum no. 1. Refer to revised electrical plans issued with addendum no.2, see sheets E-101 & E-702 for placement and schedule of W1 & W1E fixtures.
5		Please provide spec for sheet E-001 KN#2 call for a pull box /vault for communications.	Use Hand Hole Enclosure, Quazite PG2436Z80712 as a basis of design specs for communication pullbox/vault. However final coordination shall be made with the communication service provider to ensure proper requirements are met for service to the building prior to purchase and installation. Reference drawings issued with addendum no. 2
6		Please provide spec for the floor boxes and finishes for the covers on sheet E-201 that shows several quadruplex floor outlets.	Refer to keynote# 8 on sheet E-201 for a spec part no. Basis of Design is the Legrand Evolution series Eight gang floor box. This can include 4 gang for power and 4 gang for data. Finishes shall be selected by architect/owner during shop drawing submittal phase. Reference drawings issued with addendum no. 2
7		Please clarify the location of the data floor boxes are shown on sheet E-301, their locations do not match up with the locations of the quadruplex floor boxes on sheet E-201. Are these to be combined with boxes on E-201 or separate boxes?	Refer to revised electrical plans addendum #2, see sheet E-301 where location of data floor boxes matches with power floor boxes location on sheet E-201. So, to conclude data floor boxes are combined with power floor boxes, not separate boxes.
8		Please provide the spec for the flat shutters and sunshades, including size, framing, color for power coating, etc.	Refer to addendum no. 2 for vertical blinds and bahama shutters. All colors to be selected by owner/architect during shop drawing phase of construction.
9		Please clarify if project is Davis Bacon and Buy American?	It is neither Davis Bacon nor Buy American
10		Please clarify if this is an ODP Project?	No
11		Please clarify for the return duct, what note do we need to apply? Will it be Ductboard or sheetmetal?	Metal ductwork is specified.
12		Plan page P-601 shows the water closet to be flush valve type. These require a 1" water line. Plan pages P-401 and P-201 show pipe sizing to all the water closets to be 1/2". Please clarify. If flush valve water closets are to be used, please provide new drawings showing the increase in all pipe sizing. (This question was answered(#39 in Addendum 1) but I think there was a mistake with the previous answer).	Water supply lines to water closets were revised to 3/4" diameter in the plumbing schedule in addendum no. 2, see drawing P--601 issued in addendum no. 2.
13		Please clarify on the door schedule, openings 100B, 100C and 102A are indicated to be metal doors. On the hardware specs, they are listed as exterior aluminum openings (hardware sets 2 & 3).	Doors are hollow metal. See revised specification section 087100 Door Hardware for revisions.
14		Please clarify on the door schedule, opening 101 is a SCW door but on the hardware specs, it is listed as an aluminum door (hardware set 8).	See revised specification section 087100 Door Hardware for revisions.
15		Please clarify on the door schedule, opening 101A is a metal door, but on the hardware specs, it is listed as an aluminum door (hardware set 8).	Door is hollow metal. See revised specification section 087100 Door Hardware for revisions.
16		Please clarify on the door schedule, the following openings are listed as metal doors, but on the hardware specs, they are listed as aluminum (hardware set 9): 204A, 204B, 205, 206, 207A, 207B, 208A, 208B.	Doors are hollow metal. See revised specification section 087100 Door Hardware for revisions.
17		Please clarify where the 1/4" tapered insulation goes. Our understanding is " base layer everywhere with tapered insulation at the red section of the attached drawing markup. Please advise.	Reference revised drawings A-150, A-501 thru A-505, and A-550 thru A-552 that was issued in Addendum no 2
18		One of our roof subcontractors asks the design team to consider to shop fabricate the metal, it will be a lower cost overall for HCSO. And it can all be covered under the Carlisle warranty.	Shop fabricated roof curbs, flashing, etc are acceptable provided they meet the specified standards and do not void warranties. TPO roof to be equivalent to GAF 6 mil minimum with 1/2" high density polyiso protection board w/ ultra-facer reinforcement installed over insulation and attached with the "Rhino Bond" system. All products are to be installed according to roofing manufacturer's recommendations.

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
1. Swinging doors.
  2. Sliding doors.
  3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
1. Mechanical door hardware.
  2. Cylinders specified for doors in other sections.
- C. Related Sections:
1. Division 06 Section "Rough Carpentry".
  2. Division 06 Section "Finish Carpentry".
  3. Division 08 Section "Operations and Maintenance".
  4. Division 08 Section "Door Schedule".
  5. Division 08 Section "Door Hardware Schedule".
  6. Division 08 Section "Hollow Metal Doors and Frames".
  7. Division 08 Section "Flush Wood Doors".
  8. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
  2. ANSI/SDI A250.13 - Testing and Rating of Severe Windstorm Resistant Components for Swing Door Assemblies.
  3. ICC/IBC - International Building Code.
  4. NFPA 70 - National Electrical Code.
  5. NFPA 80 - Fire Doors and Windows.
  6. NFPA 101 - Life Safety Code.
  7. NFPA 105 - Installation of Smoke Door Assemblies.
  8. TAS-201-94 - Impact Test Procedures.

9. TAS-202-94 - Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components using Uniform Static Air Pressure.
10. TAS-203-94 - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.
11. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

### 1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:
  - a. Type, style, function, size, label, hand, and finish of each door hardware item.
  - b. Manufacturer of each item.
  - c. Fastenings and other pertinent information.
  - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
  - e. Explanation of abbreviations, symbols, and codes contained in schedule.
  - f. Mounting locations for door hardware.
  - g. Door and frame sizes and materials.
  - h. Warranty information for each product.
4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data,

Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

- C. Proof of Qualification: Provide copy of manufacturer(s) Factory Trained Installer documentation indicating proof of status as a qualified installer of tornado or hurricane storm shelter assemblies.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
  - 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during

the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
  - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
  
- F. Hurricane Resistant Exterior Openings (State of Florida including the High Velocity Hurricane Zone (HVHZ)): Provide exterior door hardware as complete and tested assemblies, or component assemblies, including approved doors and frames specified under Section 081113 "Hollow Metal Doors and Frames", to meet the design pressures, debris impact resistance, and glass and glazing requirements as detailed in the current State of Florida building code sections applicable to the Project.
  - 1. Each unit to bear third party permanent label in accordance with the Florida Building Code requirements.
  
- G. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
  
- H. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
  - 1. Function of building, purpose of each area and degree of security required.
  - 2. Plans for existing and future key system expansion.
  - 3. Requirements for key control storage and software.
  - 4. Installation of permanent keys, cylinder cores and software.
  - 5. Address and requirements for delivery of keys.
  
- I. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
  - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
  - 3. Review sequence of operation narratives for each unique access controlled opening.
  - 4. Review and finalize construction schedule and verify availability of materials.
  - 5. Review the required inspecting, testing, commissioning, and demonstration procedures

- J. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

#### 1.7 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

#### 1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 BUTT HINGES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
    - a. Two Hinges: For doors with heights up to 60 inches.
    - b. Three Hinges: For doors with heights 61 to 90 inches.
    - c. Four Hinges: For doors with heights 91 to 120 inches.
    - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
  2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
    - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
    - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
  3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
    - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
  4. Hinge Options: Comply with the following:
    - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
  5. Manufacturers:
    - a. Hager Companies (HA) - BB Series, 5-knuckle.
    - b. McKinney (MK) - TA/T4A Series, 5-knuckle.

### 2.2 CONTINUOUS HINGES

- A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
1. Where specified, provide modular continuous geared hinges that ship in two or three pieces and form a single continuous hinge upon installation.
  2. Manufacturers:.



- a. Pemko (PE).
- b. Select Hinges (SL).

## 2.3 DOOR OPERATING TRIM

### A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

- 1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
- 2. Furnish dust proof strikes for bottom bolts.
- 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
- 4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
- 5. Manufacturers:
  - a. Burns Manufacturing (BU).
  - b. Rockwood (RO).
  - c. Trimco (TC).

### B. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

- 1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
- 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
- 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
- 4. Pulls, where applicable, shall be provided with a 10" clearance from the finished floor on the push side to accommodate wheelchair accessibility.
- 5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- 6. Manufacturers:
  - a. Rockwood (RO).
  - b. Trimco (TC).

## 2.4 CYLINDERS AND KEYING

### A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

### B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Manufacturer's Standard.

C. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. New System: Key locks to a new key system as directed by the Owner.

D. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

## 2.5 MORTISE LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:
  - a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 8800FL Series.
  - b. Corbin Russwin Hardware (RU) - ML2000 Series.
  - c. Sargent Manufacturing (SA) - 8200 Series.

## 2.6 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

## 2.7 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
  - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
  - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:
  - a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 7000 Series.
  - b. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
  - c. Sargent Manufacturing (SA) - 80 Series.

## 2.8 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Large body cast iron surface mounted door closers shall have a 30-year warranty.
2. Manufacturers:
  - a. Corbin Russwin Hardware (RU) - DC8000 Series.
  - b. Norton Rixson (NO) - 9500 Series.
  - c. Sargent Manufacturing (SA) - 281 Series.

- C. Door Closers, Overhead Concealed (Narrow Profile): ANSI/BHMA 156.4 Grade 1 Certified Products Directory (CPD) listed door closers designed for narrow profile frames and doors. Closers to have fully concealed body in the frame head for offset hung applications, with separate and independent valves for closing speed and backcheck adjustments and a decorative cover plate.

- 1. Manufacturers:
  - a. Norton Rixson (RF) - 91DCP Series.

## 2.9 ARCHITECTURAL TRIM

### A. Door Protective Trim

- 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
- 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
- 3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
- 4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
  - a. Stainless Steel: 300 grade, 050-inch thick.
- 5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
- 6. Manufacturers:
  - a. Burns Manufacturing (BU).
  - b. Rockwood (RO).
  - c. Trimco (TC).

## 2.10 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
  - 1. Manufacturers:

- a. Hager Companies (HA).
  - b. Rockwood (RO).
  - c. Trimco (TC).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
1. Manufacturers:
    - a. Norton Rixson (RF).
    - b. Rockwood (RO).
    - c. Sargent Manufacturing (SA).

## 2.11 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Hurricane and Storm Shelter Compliance: Devices to be U.L. listed for windstorm assemblies where applicable. Provide the appropriate hurricane or storm shelter products that have been independently third party tested, certified, and labeled to meet state and local windstorm building codes applicable to project.
- G. Manufacturers:

1. National Guard Products (NG).
2. Pemko (PE).
3. Zero (ZE).

## 2.12 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

## 2.13 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- 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 by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

### 3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
  3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
  4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
  1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

### 3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to



operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

### 3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

### 3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

### 3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

- 1. Quantities listed are for each pair of doors, or for each single door.
- 2. The supplier is responsible for handing and sizing all products.
- 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
- 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

- B. Manufacturer's Abbreviations:

- 1. MK - McKinney
- 2. PE - Pemko
- 3. RO - Rockwood
- 4. SA - SARGENT
- 5. AD - Adams Rite
- 6. RF - Rixson

**Hardware Sets**

**Set: 1.0**

Doors: 100

Description: EXT LOBBY PR - ALUM

2 Continuous Hinge - Pemkonnct	CFMXXHD1-M		PE
1 Exit Device (nightlatch)	AD8410 106	US32D	SA
1 Concealed Vert Rod Exit, Exit Only	AD8410 EO	US32D	SA
2 Door Pull	BF168	US32D	RO
2 Concealed Closer	91NDCP 90N	626	RF
2 Door Stop	480	US26D	RO
1 Gasketing	by door / frame mfg		
1 Threshold	2005AT MSES25SS		PE

Notes:

Hardware listed for design criteria, confirm with specific door manufacturer the hardware requirements to meet specified windstorm rating - Provide 3rd party test results for confirmation.

**Set: 2.0**

Doors: 100B, 100C

Description: EXT CORR

3 Hinge, Full Mortise, Hvy Wt	T4A3386 X NRP 4-1/2" x 4-1/2"	US32D	MK
1 Exit Device (storeroom)	8804 ETP	US32D	SA
1 Door Closer	281 CPS	EN	SA
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO
1 Gasketing	303AS		PE
1 Rain Guard	346C x LAR		PE
1 Sweep	3452AV		PE
1 Threshold	2005AT MSES25SS		PE

Notes: Hardware listed for design criteria, confirm with specific door manufacturer the hardware requirements to meet specified windstorm rating - Provide 3rd party test results for confirmation.

**Set: 3.0**

Doors: 102A

Description: EXT BREAK

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TAMPA, FL

3 Hinge, Full Mortise, Hvy Wt	T4A3386 X NRP 4-1/2" x 4-1/2"	US32D	MK
1 Exit Lock	8225 LNP	US32D	SA
1 Cylinder	as required - Key to existing	US32D	SA
1 Door Closer	281 CPS	EN	SA
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO
1 Gasketing	303AS		PE
1 Rain Guard	346C x LAR		PE
1 Sweep	3452AV		PE
1 Threshold	2005AT MSES25SS		PE

Notes: Hardware listed for design criteria, confirm with specific door manufacturer the hardware requirements to meet specified windstorm rating - Provide 3rd party test results for confirmation.

**Set: 4.0**

Doors: 210, 210A, 210B

Description: EXT KENNEL PR

6 Hinge, Full Mortise, Hvy Wt	T4A3386 X NRP 4-1/2" x 4-1/2"	US32D	MK
1 Mullion	L980S	PC	SA
1 Exit Device (storeroom)	8804 ETP	US32D	SA
1 Exit Device (exit only)	8810 ETP	US32D	SA
1 Cylinder	980C1	US26D	SA
2 Surface Closer	281 CPSH	EN	SA
2 Kick Plate	K1050 10" X 2" LDW	US32D	RO
2 Astragal	S772BL [ mtg on mull ]		PE
1 Gasketing	303AS		PE
1 Rain Guard	346C x LAR		PE
2 Sweep	3452AV		PE
1 Threshold	2005AT MSES25SS		PE

Notes: Hardware listed for design criteria, confirm with specific door manufacturer the hardware requirements to meet specified windstorm rating - Provide 3rd party test results for confirmation.

**Set: 5.0**

Doors: 119, 120

Description: EXT MEP / STOR - PR

6 Hinge, Full Mortise	TA2314 x NRP 4-1/2" x 4-1/2"	US32D	MK
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2 Surface Bolt	988 / 580-8	Bright Zinc	SA
1 Storeroom Deadbolt Lock	8251 LNP	US26D	SA
2 Door Closer	281 CPS	EN	SA
2 Armor Plate	K1050 36" X 2" LDW	US32D	RO
1 Astragal	357SP X S88BL		PE
1 Gasketing	S88BL X LAR		PE
1 Rain Guard	346C x LAR		PE
2 Sweep	3452AV		PE
1 Threshold (Heavy Duty)	2715AK MSES25SS		PE

Notes: Hardware listed for design criteria, confirm with specific door manufacturer the hardware requirements to meet specified windstorm rating - Provide 3rd party test results for confirmation.

**Set: 6.0**

Doors: 101B, 118

Description: EXT - MEP

3 Hinge, Full Mortise, Hvy Wt	T4A3386 X NRP 4-1/2" x 4-1/2"	US32D	MK
1 Exit Lock	8225 LNP	US32D	SA
1 Door Closer	281 CPS	EN	SA
1 Armor Plate	K1050 36" X 2" LDW	US32D	RO
1 Gasketing	S88BL X LAR		PE
1 Rain Guard	346C x LAR		PE
1 Sweep	3452AV		PE
1 Threshold (Heavy Duty)	2715AK MSES25SS		PE

Notes: Hardware listed for design criteria, confirm with specific door manufacturer the hardware requirements to meet specified windstorm rating - Provide 3rd party test results for confirmation.

**Set: 7.0**

Doors: 119A

Description: MEP PR

6 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
2 Flush Bolt	555 [12" / 72" AFF]	US26D	RO
1 Dust Proof Strike	570	US26D	RO
1 Storeroom Lock	8204 LNP	US26D	SA
2 Door Closer	281 Reg / PA	EN	SA

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2 Kick Plate	K1050 10" X 2" LDW	US32D	RO
2 Door Stop	409 / 446 as required	US26D	RO
1 Astragal	357SP X S88BL		PE
1 Gasketing	S88BL X LAR		PE

**Set: 8.0**

Doors: [100A](#), [101](#), [101A](#)

Description: ENTRY

3 Hinge, Full Mortise, Hvy Wt	T4A3386 X NRP 4-1/2" x 4-1/2"	US32D	MK
1 Classroom Lock	8237 LNP	US26D	SA
1 Cylinder	as required - Key to existing	US32D	SA
1 Door Closer	281 Reg / PA	EN	SA
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO
1 Door Stop	409 / 446 as required	US26D	RO
1 Gasketing	S88BL X LAR		PE

**Set: 9.0**

Doors: [204A](#), [204B](#), [205](#), [206](#), [207A](#), [207B](#), [208A](#), [208B](#)

Description: KENNEL

3 Hinge, Full Mortise, Hvy Wt	T4A3386 X NRP 4-1/2" x 4-1/2"	US32D	MK
1 Classroom Lock	8237 LNP	US26D	SA
1 Cylinder	as required - Key to existing	US32D	SA
1 Concealed Closer	91NDCP 90N	626	RF
1 Mop Plate	K1050 4" X 1" LDW	US32D	RO
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO
1 Door Stop	409 / 446 as required	US26D	RO
1 Gasketing	S88BL X LAR		PE

**Set: 10.0**

Doors: [113](#), [114](#)

Description: RESTROOM

3 Hinge, Full Mortise, Hvy Wt	T4A3786 4-1/2" x 4-1/2"	US26D	MK
1 Pull Plate	BF 110 x 70C	US32D	RO
1 Push Plate	70C	US32D	RO
1 Door Closer	281 Reg / PA	EN	SA
1 Mop Plate	K1050 4" X 1" LDW	US32D	RO
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO

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1 Door Stop	409 / 446 as required	US26D	RO
1 Gasketing	S88BL X LAR		PE

**Set: 11.0**

Doors: 105, 107, 109, 111, 116, 117  
Description: STOR

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Storeroom Lock	8204 LNP	US26D	SA
1 Door Stop	409 / 446 as required	US26D	RO
3 Silencer	608		RO

**Set: 12.0**

Doors: 112  
Description: JAN

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Storeroom Lock	8204 LNP	US26D	SA
1 Surf Overhead Stop	10-X36	689	RF
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO
1 Gasketing	S88BL X LAR		PE

**Set: 13.0**

Doors: 104, 106, 110, 115  
Description: OFFICE

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Office Lock	8205 LNP	US26D	SA
1 Door Stop	409 / 446 as required	US26D	RO
3 Silencer	608		RO

**Set: 14.0**

Doors: 102  
Description: BREAK

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Passage Latch	8215 LNP	US26D	SA
1 Door Closer	281 Reg / PA	EN	SA
1 Mop Plate	K1050 4" X 1" LDW	US32D	RO
1 Kick Plate	K1050 10" X 2" LDW	US32D	RO

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1 Door Stop	409 / 446 as required	US26D	RO
1 Gasketing	S88BL X LAR		PE
3 Silencer	608		RO

**Set: 15.0**

Doors: 108

Description: COPY

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Passage Latch	8215 LNP	US26D	SA
1 Door Stop	409 / 446 as required	US26D	RO
3 Silencer	608		RO

END OF SECTION 087100

## SECTION 323113 – CHAIN LINK FENCES AND GATES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Chain link fence framework, fabric, and accessories.
  - 2. Excavation for post bases, concrete footings for posts, and center drop for gates.
  - 3. Chain link manual and motorized gates and related hardware.
  
- B. Related Sections:
  - 1. Section 033000 - Cast-In-Place Concrete: Post footings.
  - 2. Section 281304 – Physical Access Control System
  - 3. Section 270500 - Common Work Results for Communications.
  - 4. Section 271500 – Communications Horizontal Cabling.

#### 1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM A 90 - Tests for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
  - 2. ASTM A 116 - Specification for Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.
  - 3. ASTM F 1184 - Specification for Industrial and Commercial Horizontal Slide Gates, Type II, Class 2.
  - 4. ASTM A 123 - Specification for Zinc (Hot- Dip Galvanized) Coatings on Iron and Steel Products.
  - 5. ASTM A 392 - Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
  - 6. ASTM F 567 - Standard Practice for Installation of Chain Link Fence.
  - 7. ASTM A 824 - Specification for Metallic-Coated Steel Marcellled Tension Wire Use with Chain Link Fence.
  - 8. ASTM F 1043 - Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework.
  - 9. ASTM F 668 - Specification for Poly (Vinyl Chloride) (PVC) Coated Steel Chain Link Fence Fabric.
  - 10. ASTM F 900 - Specification for Industrial and Commercial Swing Gates.
  - 11. ASTM F 1083 - Specification for Pipe, Steel, Hot-Dipped Zinc Coated (Galvanized) Welded, For Fence Structures.
  - 12. ASTM F 2200 – Specification for gates to be automated.
  
- B. Underwriter's Laboratories (UL):
  - 1. UL325, Door, Drapery, Gate, Louver, Window Operators, and Systems.
  
- C. Chain Link Fence Manufacturer's Institute (CLFMI):
  - 1. CLF-PM0610 (July 2011) - Product Manual.

#### 1.3 SUBMITTALS

- A. Procedures for submittals.
  - 1. Product Data: Submit product data for fabric, posts, accessories, fittings, and hardware.
  - 2. Shop Drawings: Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorage's, and schedule of components.
  - 3. Assurance/Control Submittals:
    - a. Certificates: Manufacturer's certificate certifying that Products meet or exceed specified requirements.
    - b. Qualification Documentation: Submit documentation of experience indicating compliance with specified qualification requirements.



#### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with CLFMI PM.
- B. Installer Qualifications: Company specializing in performing the Work of this Section with minimum 5 years documented experience.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site, store, and protect products.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Subject to compliance with project requirements, manufacturers offering Products which may be incorporated in the Work include the following:
  - 1. Allied Tube & Conduit, Harvey, IL (800) 882-5543.
  - 2. Anchor Fence Division, Master-Halco, Incorporated, Baltimore, MD (800) 229-5615.
  - 3. Merchant's Metals, Houston, TX (800) 254-0080.
  - 4. The Tymetal Corporation, Fort Miller, NY (518) 695-9000.
  - 5. HySecurity, Kent, Washington, (800) 321-9947.
- B. Product Requirements: Product options and substitutions. Substitutions: Permitted.

#### 2.2 MATERIALS

- A. Conform to CLFMI Product Manual.
- B. Steel Framing:
  - 1. Type I: ASTM F 1083 Schedule 40, standard weight galvanized steel pipe, welded construction, minimum yield strength of 25 ksi; coating conforming to ASTM F 1043 Group IA on pipe exterior and interior.
  - 2. Type II: ASTM F 1043, cold-formed and welded galvanized steel pipe with minimum yield strength of 50 ksi; coating conforming to ASTM F 1043 Group IC on pipe exterior and Group ID on pipe interior.
  - 3. Type III (Roll-formed "C" sections): ASTM F 1043, cold-formed galvanized steel post cold-formed and welded galvanized steel pipe with minimum yield strength of 45 ksi; coating conforming to ASTM F 1043 on post exterior and interior.
- C. Fabric: ASTM A 392; Class 2: 2 ounce zinc 9 gage (0.148 inch diameter) galvanized steel wire, 2 inch diamond mesh interwoven wire, twisted top and knuckled bottom.

#### 2.3 MIXES

- A. Footing Concrete: 3,000 psi Portland cement concrete.
- B. Grout: Premixed, factory-packaged, non-staining, non-corrosive grout. Provide type formulated for exterior application.

#### 2.4 COMPONENTS

- A. End, Corner, and Pull Posts: Minimum sizes and weights as follows:
  - 1. Up to 6 Foot Fabric Height:

- a. Type I Posts: 2.375 inch outside diameter pipe, 3.65 pounds per lineal foot.
      - b. Type II Posts: 2.375 inch outside diameter pipe, 3.12 pounds per lineal foot.
    2. Over 6 Foot to 13 Foot Fabric Height:
      - a. Type I Posts: 2.875 inch outside diameter pipe, 5.79 pounds per lineal foot.
      - b. Type II Posts: 2.875 inch outside diameter pipe, 4.64 pounds per lineal foot.
    3. 13 Foot and Over Fabric Height (If required):
      - a. Type I Posts: Round; 4.0 inch outside diameter pipe, 9.10 pounds per lineal foot.
      - b. Type II Posts: 4.0 inch outside diameter pipe, 6.56 pounds per lineal foot.
  - B. Line (Intermediate) Posts: Minimum sizes and weights as follows:
    1. Up to 6 Foot Fabric Height:
      - a. Type I Posts: Round; 1.90 inch outside diameter pipe, 2.72 pounds per lineal foot.
      - b. Type II Posts: 1.90 inch outside diameter pipe, 2.28 pounds per lineal foot.
      - c. Type III Posts: 1.875 inch x 1.625 inch, 2.28 pounds per lineal foot.
  - C. Swinging Gate Posts: For leaf widths, as follows:
    1. Up to 4 Feet Width:
      - a. Type I Posts: 2.875 inch outside diameter pipe, 5.79 pounds per lineal foot.
      - b. Type II Posts: 2.875 inch outside diameter pipe, 4.64 pounds per lineal foot.
    2. Between 4 Feet and 10 Feet Width:
      - a. Type I Posts: Round; 4.00 inch outside diameter pipe, 9.10 pounds per lineal foot.
      - b. Type II Posts: 4.00 inch outside diameter pipe, 6.56 pounds per lineal foot.
    3. Between 10 Feet and 15 Feet Width:
      - a. Type I Posts: 6.625 inch outside diameter pipe, 8.97 pounds per lineal foot.
  - E. Bottom Rail: Manufacturer's longest lengths.
    1. Typical:
      - a. Type I: Round; 1.66 inch outside diameter pipe, 2.27 pounds per lineal foot.
      - b. Type II: 1.66 inch outside diameter pipe 1.83 pounds per lineal foot.
      - c. Type III Posts: 1.625 inch x 1.25 inch, 1.37 pounds per lineal foot.
    2. Couplings: Expansion type, approximately 6 inches long.
    3. Attaching Devices: Means of attaching bottom rail securely to each gate, corner, pull, and end post.
  - F. Swinging Gate Hardware:
    1. Hinges: Size and material to suit gate size; offset to permit 180 degree gate opening. Provide 1-1/2 pair of hinges for each leaf over 6 foot 0 inch nominal height.
    2. Latch: Electronic
- 2.5 ACCESSORIES
- A. Sleeves: Galvanized steel pipe with inside diameter not less than 1/2 inch greater than outside diameter of fence posts. Provide steel plate closure welded to bottom of sleeves of width and length not less than 1 inch greater than outside diameter of sleeve.
    1. Up to 6 Foot Fabric Height: Provide sleeve not less than 12 inches long.
  - B. Tension Wire: 7 gage steel, metallic-coated coil spring wire, in accordance with ASTM A 824, located at the top of fence fabric.
  - C. Wire Ties: 11 gage galvanized steel.
  - D. Post Brace Assembly: Manufacturer's standard adjustable brace at end and gate posts and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric. Use same materials as top rail for brace, and truss to line posts with 0.375 inch diameter rod and adjustable tightener.

- E. Post Tops: Galvanized steel, weather tight closure cap for tubular posts, one cap for each post. Furnish cap with openings to permit passage of top rail.
- F. Stretcher Bars: Galvanized steel, one piece lengths equal to full height of fabric; with minimum cross section of 3/16 inch x 3/4 inch. Provide one stretcher bar for each gate and end post, one for each bottom rail, and two for each corner and pull post.
- G. Stretcher Bar Bands: Manufacturer's standard.

## 2.6 FABRICATION

- A. Fabricate swing gate perimeter frames of 1.90 inch outside diameter galvanized steel pipe. Provide horizontal and vertical members to ensure proper gate operation and for attachment of fabric, hardware, and accessories. Space frame members maximum 8 feet apart.
- B. Assemble gate frames rigidly by welding or with special fittings and rivets. Use same fabric as for fence. Install fabric with stretcher bars at vertical edges. Bars may also be used at top and bottom edges. Attach stretchers to frame at not more than 15 inches on center. Install diagonal cross-bracing on gates as required to ensure frame rigidity without sag or twist.
- C. Attach hardware to provide security against removal or breakage.

## 2.7 FINISHES

- A. All fence posts, fabric, and accessories shall be galvanized.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Execution Requirements: Verification of existing conditions before starting work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- C. Report in writing to Contracting Officer prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the United States Postal Service.

### 3.2 INSTALLATION

- A. Install fence in accordance with ASTM F 567 and manufacturer's published instructions.
- B. Install gates in accordance with ASTM F 900, ASTM F2200 or ASTM 1184 as applicable and to manufacturer's published instructions.
- C. Space line posts 10 feet on center maximum, unless otherwise indicated on Drawings.
- D. Grade-set Posts:
  - 1. Drill or hand excavate.
  - 2. Excavate each post hole to 12 inch diameter, or not less than four times diameter of post.

3. Excavate approximately 3 inches lower than post bottom; set post bottom not less than 36 inches below finish grade.
  4. Hold post in position while placing, consolidating, and finishing concrete.
- E. Sleeve-set Posts: Anchor posts in concrete by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with grout, mixed and placed to manufacturer's recommendations.
- F. Rails: Run rail between post, bending smoothly for curved runs located at the bottom of the fence fabric. Provide expansion couplings as recommended by fencing manufacturer.
- H. Brace Assemblies: Install braces so posts are plumb with rod in tension.
- I. Tension Wire: Install tension wires through post cap loops before stretching fabric and tie to each post cap with not less than 6 gage galvanized wire. Fasten fabric to tension wire using 11 gage galvanized steel hog rings spaced 24 inches on center.
- J. Fabric: The fence fabric must be installed within 2 inches between finish grade and bottom selvage. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on the exterior side of the fence, and anchor to framework so fabric remains in tension after pulling force is released.
- K. Stretcher Bars: To secure end, corner, pull, and gate posts, thread through or clamp to fabric 4 inches on center and secure to posts with metal bands spaced 15 inches on center.
- L. Tie Wires:
1. Use U-shaped wire conforming with diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted two full turns. Bend wire ends to minimize hazards to persons or clothing.
  2. Tie fabric to line posts with wire ties spaced 12 inches on center. Tie fabric to rails and braces with wire ties spaced 24 inches on center. Manufacturer's standard procedure will be accepted if of equal strength and durability.
- M. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- N. Gates: Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

### 3.3 CONSTRUCTION

- A. Site Tolerances:
1. Maximum Variation from Plumb: 1/4 inch.
  2. Maximum Offset from True Position: 1 inch.
  3. Locate fencing components completely within site boundaries. Do not infringe adjacent property lines.
  4. Maximum Fence Distance from Ground: 1 1/2 inches.
  5. Maximum Gate Distance from Ground: 4 inches.
- B. Gate Operator:
1. Coordinate conduit runs and electrical connections with Access Control Section 281304, Common Work Results for Communications Section 270500, and Communications Horizontal Cabling Section 271500.

### 3.4 FIELD QUALITY CONTROL

- A. Test gate operator through ten full cycles and adjust for operation without binding, scraping or uneven motion. Test limit switches for proper "at rest" gate position.

- B. All anchor bolts shall be fully concealed in the finished installation.

3.5 CONTINUED SERVICE AND DOCUMENTATION

- A. Train owner's personnel on how to safely shut off electrical power, release and manually operate the gates. Additionally, demonstrate the general maintenance of the gate operator and accessories.
- B. Provide copy of installation manual for the owner's use.

END OF SECTION 323113