PART 1 - GENERAL

1.1 Refer to "General and Special Conditions", and "Instructions to Bidders", Division 1 of Specifications. Requirements of these Sections and the project drawings shall govern work in this section.

1.2 Work Included:

A. Furnish all items of Finish Hardware specified, scheduled, shown or required herein except those items specifically excluded from this section of the specification.

B. Related work:

1. Division 00 00 00 – Procurement and Contracting Requirements
2. Division 01 00 00 – General Requirements
3. Division 06 00 00 – Wood, Plastics, and Composites
4. Division 08 00 00 – Openings
5. Division 10 00 00 – Specialties
6. Division 11 00 00 – Equipment
7. Division 26 00 00 – Electrical
8. Division 27 00 00 – Communications
9. Division 28 00 00 – Electronic Safety and Security

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere, unless specifically listed in the hardware sets:

1. Cabinet Hardware.
2. Signs, except as noted.
3. Folding partitions, except cylinders where detailed.
4. Sliding aluminum doors
5. Chain link and wire mesh doors and gates
6. Access doors and panels
7. Overhead and Coiling doors

1.3 Quality Assurance

A. Requirements of Regulatory Agencies:

1. Furnish finish hardware to comply with the requirements of laws, codes, ordinances, and regulations of the governmental authorities having jurisdiction where such requirements exceed the requirements of the Specifications.
2. Furnish finish hardware to comply with the requirements of the regulations for public building accommodations for physically handicapped persons of the governmental authority having jurisdiction and to comply with Americans with Disabilities Act.
3. Provide hardware for fire-rated openings in compliance with NFPA 80 and state and local building code requirements. Provide only hardware that has been tested and listed by UL for types and sizes of doors required and complies with requirements of door and door frame labels.

B. Hardware Supplier:
1. Shall be an established firm dealing in contract builders’ hardware. He must have adequate inventory, qualified personnel on staff and be located within 100 miles of the project. The distributor must be a factory-authorized dealer for all materials required. The supplier shall be or have in employment an Architectural Hardware Consultant (AHC).

C. Electrified Door Hardware Supplier:

1. Shall be an experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design, and extent to that indicated for this project, whose work has resulted in construction with a record of successful in-service performance, and who is acceptable to manufacturer of primary materials.
2. Shall prepare data for electrified door hardware, including shop drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this project.
3. Shall have experience in providing consulting services for electrified door hardware installations.

D. Pre-installation Meeting:

1. Before hardware installation, General Contractor/Construction Manager will request a hardware installation meeting be conducted on the installation of hardware; specifically that of locksets, closers, exit devices, overhead stops and coordinators. Manufacturer's representatives of the above products, in conjunction with the hardware supplier for the project, shall conduct the meeting. Meeting to be held at job site and attended by installers of hardware for aluminum, hollow metal and wood doors. Meeting to address proper coordination and installation of hardware, per finish hardware schedule for this specific project, by using installation manuals, hardware schedule, templates, physical product samples and installation videos.
2. When any electrical or pneumatic hardware is specified this meeting shall also include the following trades/installers: Electrical, Security, Alarm systems and Architect.
3. Convene one week or more prior to commencing work of this Section.
4. The Hardware Supplier shall include the cost of this meeting in his proposal.

E. Manufacturer:

1. Obtain each type of hardware (latch and locksets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.
2. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.

1.4 Submittals:

A. Hardware Schedule

1. Submit number of Hardware Schedules as directed in Division 1.
2. Follow guidelines established in Door & Hardware Institute Handbook (DHI) Sequence and Format for the Hardware Schedule unless noted otherwise.
3. Schedule will include the following:
   a. Door Index including opening numbers and the assigned Finish Hardware set.
   b. Preface sheet listing category only and manufacturer's names of items being furnished as follows:

   | CATEGORY | SPECIFIED | SCHEDULED |


<table>
<thead>
<tr>
<th></th>
<th>Manufacturer A</th>
<th>Manufacturer B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hinges</td>
<td>Manufacturer A</td>
<td>Manufacturer B</td>
</tr>
<tr>
<td>Lock sets</td>
<td>Manufacturer X</td>
<td>Manufacturer X</td>
</tr>
<tr>
<td>Kick Plates</td>
<td>Open</td>
<td>Manufacturer Z</td>
</tr>
</tbody>
</table>

c. Hardware Locations: Refer to Article 3.1 B.2 Locations.
d. Opening Description: Single or pair, number, room locations, hand, active leaf, degree of swing, size, door material, frame material, and UL listing.
e. Hardware Description: Quantity, category, product number, fasteners, and finish.
f. Headings that refer to the specified Hardware Set Numbers.
g. Scheduling Sequence shown in Hardware Sets.
h. Product data of each hardware item, and shop drawings where required, for special conditions and specialty hardware.
i. Electrified Hardware system operation description.
j. "Vertical" scheduling format only. "Horizontal" schedules will be returned "Not Approved."
k. Typed Copy.
l. Double-Spacing.
m. 8-1/2 x 11 inch sheets
n. U.S. Standard Finish symbols or BHMA Finish symbols.

B. Product Data:

1. Submit, in booklet form Manufacturers Catalog cut sheets of scheduled hardware.
2. Submit product data with hardware schedule.

C. Samples:

1. Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit one sample, if required, of each type of exposed hardware unit, finished as required and tagged with full description for coordination with schedule.
2. Samples will be returned to the supplier. Units, which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be used in the work, within limitations of keying coordination requirements.

D. Key Schedule:

1. Submit detailed schedule indicating clearly how the Owner's final keying instructions have been followed.
2. Submit as a separate schedule.

E. Electrified Hardware Drawings:

1. Submit elevation drawings showing relationship of all electrical hardware components to door and frame.
   a. Include wiring drawing showing point to point wire hook up for all components.
   b. Include system operations descriptions for each type of opening; describe each possible condition.

F. Submit to General Contractor/Construction Manager, the factory order acknowledgement numbers for the various hardware items to be used on the project. The factory order acknowledgement numbers shall help to facilitate and expedite any service that may be required on a particular hardware item. General Contractor/Construction Manager shall keep these order acknowledgement numbers on file in the construction trailer.
1.5 Product Delivery, Storage, and Handling:
   A. Label each item of hardware with the appropriate door number and Hardware Schedule heading number, and deliver to the installer so designated by the contractor.

1.6 Warranties:
   A. During the warranty period, replace defective work, including labor, materials and other costs incidental to the work. Replace work found to be defective as defined in the General Conditions.

PART 2 - PRODUCT

2.1 Furnish each category with the products of only one manufacturer unless specified otherwise; this requirement is mandatory whether various manufacturers are listed or not.

2.2 Provide the products of manufacturer designated or if more than one manufacturer is listed, the comparable product of one of the other manufacturers listed. Where only one manufacturer or product is listed, it is understood that this is the owner's Building Standard and "no substitution" is allowed.

A. Hinges:
   1. Furnish hinges of class and size as follows.
   2. Furnish Ives 5BB1 4.5" x 4.5".
   3. Equal products by Stanley, McKinney and Hager are acceptable.

B. Continuous Gear Hinge:
   1. 6063-T6 aluminum alloy, anodized finish (cap on entire hinge painted if specified). Manufacture to template, uncut hinges non-handed, pinless assembly, three interlocking extrusions, full height of door and frame, lubricated polyacetal thrust bearing, fasteners 410 stainless steel plated and hardened. All hinge profiles to be manufactured to template bearing locations, with standard duty bearing configurations at 5-1/8" spacing with a minimum of 16 bearings: and heavy duty at 2-9/16" spacing with a minimum of 32 bearings. Anodizing of material shall be done after fabrication of components so that all bearing slots are anodized.
   2. Length: 1" less than door opening height. Fastener 12-24 x 1/2" #3 Phillips keen form stainless steel self-tapping at aluminum and hollow metal doors, 12- 1/2" #3 Philips, flathead full thread at wood doors.
   3. Furnish fire rated hinges "FR" at labeled openings.
      a. For Wood and Hollow Metal frames;
         1) Ives 224HD
         2) Equal products by Hager & Select will also be accepted.
      b. For Aluminum frames;
         1) Ives 112HD
         2) Equal products by Hager & Select will also be accepted.

C. Flush Bolts:
   1. Automatic - metal doors:
      a. Allegion-Ives FB30 Series

2. Automatic - wood doors:
   a. Allegion-Ives FB40 Series

3. Constant Latching: metal doors:
   a. Allegion-Ives FB50 Series

4. Constant Latching: wood doors:
   a. Allegion-Ives FB60 Series

5. Manual – wood and metal doors:
   a. Allegion-Ives FB458 Series

6. Dust Proof Strikes - furnish with all flush bolts, except at openings having thresholds:
   a. Allegion-Ives DP2

D. Locksets and Latch sets - Mortise Type:

1. Mortise type not acceptable without approval from DTMB Office of Infrastructure Protection, Security Program Coordinator

E. Locksets and Latch sets – Heavy Duty Cylindrical Type:

1. Function numbers listed are Stanley-Bes.
3. Provide strikes with extended lips where required to protect trim from being marred by latch bolt. Provide strike lips that do not project more than 1/8” beyond doorframe trim at single doors and have 7/8” lip to center at pairs of 1-3/4” doors.
4. Locksets and Latch sets:
   a. Stanley-Best 9K series
5. Lockset Trim:
   a. Stanley-Best 14 – Curved Return

F. Roller Latches:
   a. Allegion-Ives RL30

G. Exit Devices:

1. Exit devices shall be touchpad style, fabricated of brass, bronze, stainless steel, or aluminum, plated to the standard architectural finishes to match the balance of the door hardware.
2. All exit devices shall incorporate a fluid damper, which decelerates the touchpad on its return stroke and eliminates noise associated with exit device operation. Touchpad shall extend a minimum of one half of the door width. All latch bolts to be dead latching type, with a self-lubricating coating to reduce wear.
3. End-cap will be sloped to deflect any impact from carts and they shall be flush with the external mechanism case. End caps that overlap and project above the mechanism case are unacceptable. End cap shall utilize a two-point attachment to the mounting bracket.
4. Touchpad shall match exit device finish, and shall be stainless steel for US26, US26D, US28, US32, and US32D finishes. Only compression springs will be used in devices, latches, and outside trims or controls.
5. Plastic templates shall be included with each exit device to facilitate a quick, easy and accurate installation.
6. Strikes shall be roller type and come complete with a locking plate to prevent movement.
7. All rim and vertical rod exit devices shall have passed a 5 million(5,000,000) cycle test based on ANSI A156.3, 1994, Grade 1 test standards and certified by an independent testing lab.

8. All mortise exit devices shall have passed a 10 million(10,000,000) cycle test based on ANSI A156.3, 1994, Grade 1 test standards and certified by an independent testing lab.

9. Exit devices shall be UL listed panic exit hardware. All exit devices for fire rated openings shall be UL labeled fire exit hardware.

10. Lever trim for exit devices shall be vandal-resistant type, which will travel to a 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set.

11. IR-Von Duprin 98/99 and 33A/35A Series. Series and function numbers as listed in sets.

12. Trim:
   a. Levers to match lockset design.


14. Schlage PS902 with a Von Duprin 900-4RL is a 4-relay distribution board is a 2-amp 12/24 VDC output power supply for connection of electrified devices such Von Duprin exit devices equipped with the (QELA Baseplate Conv. Kit series.)

H. Recessed Exit Devices:

1. Recessed exit devices shall be of the push pad design with straight or horizontal motion to eliminate pinch points. The push pad shall project a maximum of 1-3/4" from the face of the door in the closed position. The push pad shall project a maximum of 1-1/4" from the face of the door in the open position.

2. Latch bolts shall have a self-lubricating coating to reduce friction and wear.

3. Endcaps shall be die cast aluminum and be of a sloping design to deflect impact from carts.

4. Exit devices shall have compression springs, and all internal parts shall be zinc dichromate coated to prevent corrosion.

5. Outside trim shall be heavy-duty type and fasten by means of concealed studs and through-bolt from the inside. Lever trim shall be cast brass with a minimum average thickness of .130”.

6. Exit devices shall be tested in accordance to ANSI/BHMA A156.3 Grade 1 by a BHMA certified testing laboratory.

7. A written certification showing successful completion of a minimum of one million cycles must be also provided.

8. Recessed exit devices shall be as manufactured by Von Duprin. Exit device series shall be 94/95 series.

9. Trim:
   a. Levers to match lockset design.

I. Removable Mullion:

a. Interior/Exterior doors, mullion is removable only through the use of building keys.
   1) IR-Von Duprin KR4954

b. Interior Doors - UL listed, Mullion is removable only through the use of building keys.
   1) IR-Von Duprin KR9954

J. Push and Pull Hardware:

1. Push Plates: Ives 8200 Series 6 x 16 x .050 inches. If stile widths will not accept 6 inches, provide stile width less two inches.

2. Push Bars: IR-Von Duprin 330/350

3. Push-Pull Units: One inch round rod. Push: Straight push bar, Pull: 90 degree offset, 12 inch centers. Attach top post of pull back to back with latch stile end of push bar, bottom post of pull and hinge stile end of push bar with end caps.

4. Pull, Offset: One inch round rod, 90 degree offset, 12 inch centers.

5. Pulls: One inch round rod, straight 12 inch centers.

6. Pull Plates: Allegion-Ives 8303-8 4 x 16 x .050 inches. 8” center.
7. Pull, Bi-Fold: Dummy Lever Trims. Levers to match lockset lever design.
9. Vandal Resistant Pulls: Allegion-Ives VR900 Series. Stainless steel construction 0.120 inches thick.
10. Manufacturer: Provide push and pull hardware from any member of B.H.M.A.

K. Coordinator – Frame Stop Mounted:

1. Door coordinator shall prevent the active door from closing before inactive door. Stop mounted channel 1-5/8" x 5/8" steel tubing x length to suit door opening. Coordinator shall be UL listed. Furnish filler bars to fill gap between end of coordinator and inactive door frame. Furnish mounting brackets for all stop mounted hardware such as exit device strikes, door closer PA shoes, etc. Coordinators shall be prepared (cutout) at the factory for surface applied or concealed vertical rod panic devices if required.
2. Furnish with carry bar CB1 when required for proper operation.
   a. Allegion-Ives COR x length to suit.

L. Electric Strike:

1. Electric strikes shall provide remote release of latch bolts. They shall be designed for use with the type locks shown at each opening where required. Strikes will be UL Listed for Burglary-Resistant Electric Door Strike, and where required, shall be UL listed as electric strikes for Fire Doors or Frames. Faceplates shall be stainless steel with finish as specified for each opening. The locking components shall be stainless steel to resist damage and abuse.
2. Solenoids shall be of the continuous duty type for the voltage specified. Plug connectors will be furnished. Strikes shall have an adjustable backbox to compensate for misalignment of door and frame.
3. Furnish strikes manufactured by Rutherford Controls.
   a. Dormakaba RCI 6 series
   b. Dormakaba RCI F2 series Part # F2164
   c. Alternative subject to approval from DTMB Office of Infrastructure Protection, Security Program Coordinator
4. Von Duprin 6300 is a surface mount electric strike is specifically designed for Von Duprin 98/99 series rim exit devices.

M. Electric Power Transfer:

1. Transfer power from door frame to edge of door, UL listed R4504.
2. IR-Von Duprin EPT

N. Access control wire – Profusion Genesis series cable 22/6+22/4+22/2+18/4 – each shld. Plenum or FTS.

O. Closers:

1. Door closers shall have fully hydraulic, full rack and pinion action with a high strength cast iron cylinder. Cylinder body shall be 1 ½" in diameter, and double heat treated pinion shall be 11/16" in diameter with double D slab drive arm connection.
2. Hydraulic fluid shall be of a type requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to –30 degrees F.
3. Spring power shall be continuously adjustable over the full range of closer sizes, and allow for reduced opening force for the physically handicapped. Hydraulic regulation shall be by
tamper-proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed, and backcheck.

4. All closers shall have solid forged steel main arms (and forged forearms for parallel arm closers).

5. All surface mounted mechanical closers shall be certified to exceed ten million (10,000,000) full load cycles by a recognized independent testing laboratory.

6. Closers will have Powder coating finish certified to exceed 100 hours salt spray testing by ETL, an independent testing laboratory used by BHMA for ANSI certification.

7. Refer to door and frame details and furnish accessories such as drop plates, panel adapters, spacers and supports as required to correctly install door closers. State degree of door swing in the hardware schedule.

8. Furnish closers manufactured by LCN
   a. LCN Series 4000.

P. ADA Special Closers

1. Where “Low Energy Power Operated Door” as defined by ANSI Standard A156.19 is indicated for doors required to be accessible to the disabled, provide electrically powered operators complying with the ADA requirements for opening force and time to close standards.

2. Full closing force shall be provided when the power or assist cycle ends.

3. Modular design, adjustments easily accessible from the front, UL listed for use on labeled doors.

4. Shall have “Second Chance” function to accommodate momentary resistance, “Breakaway” function in the electronically controlled clutch, “Soft Start” motor control function and “Maintain Hold-Open Switch” to hold the door open at 90 degree.

5. Shall have built in 12V and 24V power supply for actuators, card readers, electric strikes and magnetic door locks, inputs for both swing and stop side sensors and available to accept either 120VAC or 220VAC input power. All wiring connections between operator modules made by easy-to-handle electrical connectors. Shall comply with both UL and NEC requirements for Class 1 and Class 2 wiring by providing separate conduits for each.

6. Shall have seven independent electronic adjustments to tailor the operator for specific site conditions. Opening speed, holding force at 90 deg., sequential trigger and time delay, hold-open time at 90 deg., opening force, clutch “breakaway” force setting, electric strike trigger and time delay.

7. Shall have separate and independent adjustments for back check, main speed and latch speed.

8. Furnish actuators and other controls as shown in Hardware Sets.

9. Furnish operators manufactured by:
   a. Stanley Magic Force
   b. LCN-IR-LCN Series 4600.

Q. Overhead Holders and Stops:

1. Type, function and fasteners must be same as Glynn-Johnson specified. Size per manufacturer's selector chart. Plastic end caps, hold open mechanisms and shock blocks are not allowed. End caps must be finished same as balance of unit.


3. Type, function, and fasteners must be the same as Glynn-Johnson specified. Size per manufacturer's selector chart.
   a. IR-Glynn-Johnson

R. Kick Plates:
1. Furnish .050 inches thick, beveled three sides, 10" high x door width less 2" at single doors and less 1" at pairs. Where glass or louvers prevent this height, supply with height equal to height of bottom rail less 2".
2. Any BHMA manufacturing product meeting above is acceptable.

S. Bumpers:
1. Wrought, forged, or cast, approximately 2-1/2 inch diameter, convex or concave rubber center, concealed fasteners.
   a. Allegion-Ives WS407CCV
   b. BHMA L02101.

T. Wall Stops:
1. Length to exceed projection of all other hardware. Provide with threaded studs and expansion shields for masonry wall construction. Install with slope at top.
   a. Allegion-Ives WS33
   b. BHMA L12011 or L12021

U. Floor Stops:
1. Half dome. Furnish height to suit undercut.
   a. Allegion-Ives FB430 series
   b. BHMA L12141

V. Wall Holders:
1. Products specified by series only; furnish strike length to exceed projection of all other hardware.
   a. Allegion-Ives WS40
   b. Equal products of any BHMA manufacturer

W. Door Holding Magnets:
1. Electrically controlled, fail-safe, holds door open until current is interrupted.
2. Units will have 35 lbs. of holding force.
3. Units will be “tri-voltage”, 12VDC, 24VAC/DC & 120VAC.
4. Furnish model to hold door away from wall to allow for any trim or levers on pull side of door.
   a. IR-LCN SEM 7800 series

X. Thresholds:
1. 1/2" high - 5" wide. Cope at jambs.
2. Furnish full wall opening width when frames are recessed.
3. Cope in front of mullions if thresholds project beyond door faces.
4. Furnish with non-ferrous Stainless Steel Screws and Lead Anchors.
   a. National Guard as listed in sets
   b. Equal of Zero or Reese

Y. Door Sweeps:
1. Surface Sweeps:
   a. National Guard as listed in sets
   b. Equal by Zero or Reese
Z. Weather-stripping:
   1. Apply to head and jamb stops.
   2. Solid Bar stock all sides
      a. National Guard as listed in sets
      b. Equal by Zero or Reese

AA. Meeting Stile Weather-stripping:
   1. 2 Pc. Nylon brush type to seal gap between pairs of doors.
      a. National Guard as listed in sets
      b. Equal by Zero or Reese

BB. Astragal:
      a. National Guard as listed in sets
      b. Equal by Zero or Reese

CC. Astragal, Sound:
   1. Overlapping type.
      a. National Guard as listed in sets
      b. Equal by Zero or Reese
   2. Meeting stile type.
      a. National Guard as listed in sets
      b. Equal by Zero or Reese

DD. Sound Seal:
   1. Adjustable type perimeter seal.
      a. National Guard as listed in sets
      b. Equal by Zero by Reese

EE. Smoke and Draft Control Seals: (Use this section for hollow-metal ‘S’ labeled doors.)
   2. Perimeter Seals:
      a. National Guard 2525
      b. Zero
      c. Reese
   3. Meeting Stile Astragal Seals:
      a. National Guard 2525
      b. Zero
      c. Reese
   4. Smoke Seals for doors with overlapping astragals:
      a. National Guard 2525
      b. Zero
      c. Reese

FF. Fire and Smoke Seals: (Use this section for 20, 45, & 60 minute rated wood door with ‘S’ label)

2. Perimeter Seals:
   a. National Guard 9800 x 2525
   b. Zero
   c. Reese

3. Meeting Stile Astragal Seals:
   a. National Guard 9500 x 9605
   b. Zero
   c. Reese

4. Fire and Smoke Seals for doors with overlapping astragals:
   a. National Guard 9800 x 2525
   b. Zero
   c. Reese

GG. Fire and Smoke Seals: (Use this section for 90 minute rated wood doors with ‘S’ label)


2. Perimeter Seals:
   a. National Guard 9890 x 2525
   b. Zero
   c. Reese

3. Meeting Stile Astragal Seals:
   a. National Guard 9500 x 9605
   b. Zero
   c. Reese

4. Fire and Smoke Seals for doors with overlapping astragals:
   a. National Guard 9890 x 2525
   b. Zero
   c. Reese

HH. Lock Protector:

1. Lock protector shall eliminate gap between door and frame. No exposed fasteners on face of unit.
   a. Allegion-Ives LG series

II. Door Position Switches:

1. Coordinate voltage requirements with Electrical Drawings and Specifications.
2. Numbers used are IR-Schlage Electronics
   a. Surface 7766
   b. Concealed 7764

JJ. Key Control:

1. Key Cabinet
   a. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3 way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required for the project.
   b. Provide complete cross-index system set up by hardware supplier or Lockset manufacturer’s representative or Lockset Manufacturers authorized Service Center. Place keys on markers and hooks in the cabinet as determined by the final key
schedule. Provide hinged panel type cabinet for wall mounting. Provide one each wall mounted key cabinet.

c. Telkee WC Series with key loan record system.
d. Supplier shall include the cost of this service in their proposal.

KK. Fasteners:

1. Furnish fasteners of the proper type, size, quantity and finish. Use machine screws and expansion shields for attaching hardware to concrete or masonry, and wall grip inserts at hollow wall construction. Furnish machine screws for attachment to reinforced hollow metal doors and frames and reinforced aluminum doors and frames. Furnish full thread wood screws for attachment to solid wood doors and frames. “TEK” type screws are not acceptable.

2. Sex bolts will not be permitted on reinforced metal doors or wood doors where blocking is specified.

2.3 Finishes:

A. Generally, Dull Chrome, US26D / BHMA 626. Provide finish for each item as indicated in sets.

2.4 Templates and Hardware Location:

A. Furnish hardware made to template. Supply required templates and hardware locations to the door and frame manufacturers.

B. Furnish metal template to frame/door supplier for continuous hinge.

C. Refer to Article 3.1 B.2, Locations, and coordinate with templates.

2.5 Cylinders and Keying:

A. Locks Cylinders and keys will be furnished with Schlage standard core or Small Format Interchangeable Core (SFIC). Coordinate keying requirements with State of Michigan Department of Technology, Management and Budget, Office of Infrastructure Protection.

B. Provide cylinders with construction cores or keying for use during the construction period. When so directed, and in the presence of the Owner’s security department or representative, convert construction cores or keying to the final system.

PART 3 - EXECUTION

3.1 Installation

A. General:

1. Install hardware according to manufacturer's installations and template dimensions. Attach all items of finish hardware to doors, frames, walls, etc. with fasteners furnished and required by the manufacture of the item.
2. Provide blocking/reinforcement for all wall mounted Hardware.
3. Reinforced hollow metal doors and frames and reinforced aluminum door and frames will be drilled and tapped for machine screws.
5. Continuous gear hinges attached to hollow metal doors and frames and aluminum doors and frames: 12-24 x 1/2” #3 Phillips Keenform self-tapping. Use #13 or 3/16 drill for pilot.
6. Continuous Gear Hinges require continuous mortar guards of foam or cardboard 1/2" thick x frame height, applied with construction adhesive.
7. Install weather-strip gasket prior to parallel arm closer bracket, rim exit device or any stop mounted hardware. Gasket to provide a continuous seal around perimeter of door opening. Allow for gasket when installing finish hardware. Door closers will require special templating. Exit devices will require adjustment in backset.

B. Locations:

1. Dimensions are from finish floor to center line of items.
2. Include this list in Hardware Schedule.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hinges</td>
<td>Door Manufacturer’s Standard</td>
</tr>
<tr>
<td>Flush Bolt Levers</td>
<td>72” and 12”</td>
</tr>
<tr>
<td>Levers</td>
<td>Door Manufacturer’s Standard</td>
</tr>
<tr>
<td>Exit Device Touch Bar</td>
<td>Per Template</td>
</tr>
<tr>
<td>Dead latch Cylinder</td>
<td>43” unless conflicting with push-pull.</td>
</tr>
<tr>
<td>Deadlock MS Cylinder</td>
<td>43” unless conflicting with push-pull.</td>
</tr>
<tr>
<td>Hospital Push-Pull</td>
<td>Manufacturer’s Template</td>
</tr>
<tr>
<td>Roller Latch</td>
<td>At Head</td>
</tr>
<tr>
<td>Push-Pull Units</td>
<td>42” to centerline of Pull</td>
</tr>
<tr>
<td>Offset Pulls</td>
<td>Suitable for Exit Devices</td>
</tr>
<tr>
<td>Pulls - Flush Cup</td>
<td>46”</td>
</tr>
<tr>
<td>Pulls (BTB)</td>
<td>46”</td>
</tr>
<tr>
<td>Push-Pulls</td>
<td>46”</td>
</tr>
<tr>
<td>Push Plates</td>
<td>52”</td>
</tr>
<tr>
<td>Pull Plates</td>
<td>42”</td>
</tr>
<tr>
<td>Wire Pulls</td>
<td>42”</td>
</tr>
<tr>
<td>Wall Stops/ Holders</td>
<td>At Head</td>
</tr>
<tr>
<td>Astragals</td>
<td>Pull side of active leaf</td>
</tr>
<tr>
<td>Trim Protector Bars</td>
<td>Push side of door below lever handle</td>
</tr>
<tr>
<td>Lock Protectors</td>
<td>Pull side of door</td>
</tr>
</tbody>
</table>

C. Field Quality Inspection:

1. Provide the services of a representative to inspect material furnished and its installation and is adjustment, and to instruct the Owner’s personnel in adjustment, care and maintenance of hardware.
2. Locksets and exit devices shall be inspected by the factory representative after installation and after the HVAC system is in operation and balanced, to insure correct installation and proper operation.
3. Closers shall be inspected by the factory representative (and adjusted when required after a Pre-Installation meeting has been conducted) after installation and after the HVAC system is in operation and balanced, to insure correct installation and proper operation.
4. The manufacturer’s representative shall prepare a written report stating compliance, and also recording locations and kinds of noncompliance. The original report shall be
forwarded to the Architect with copies to the Contractor, hardware distributor, hardware installer and building owner.

D. Technical and Warranty Information:

1. At the completion of the project, the technical and warranty information coalesced and kept on file by the General Contractor/Construction Manager shall be given to the Owner or Owner’s Agent. In addition to both the technical and warranty information, all factory order acknowledgement numbers supplied to the General Contractor/Construction Manager during the construction period shall be given to the Owner or Owner’s Agent. The warranty information and factory order acknowledgement numbers shall serve to both expedite and properly execute any warranty work that may be required on the various hardware items supplied on the project.

2. Submit to General Contractor/Construction Manager, two copies each of parts and service manuals and two each of any special installation or adjustment tools. Include for locksets, exit devices, door closers and any electrical products.