SECTION  – door hardware

1. General
   1. summary

SPEC NOTE: Coordinate with the Hardware Consultant about providing a hardware schedule where required. This Section does not take the place of a hardware schedule.

SPEC NOTE: List the Drawing name and number below where the door schedule is located.

* + 1. Supply and install door hardware listed in the Door Hardware Schedule, indicated in Drawing A##.## Door Schedule, establishes the quality standards, finishes, manufacturers and functions.
  1. ADMINISTRATIVE REQUIREMENTS
     1. Submission of Substitutions: Materials other than the named products for the Project may be acceptable to the Consultant. Submit manufacturer’s names and complete catalogue number of alternative hardware types proposed for supply and submit this list for review before preparing shop drawings.
     2. Consultant will review all proposed alternates prior to close of bids when submitted no later than five (5) days prior to bid closing date.
     3. Substitutions for materials of this section will be considered after the close of bids.
     4. Pre-installation Conference: Arrange a preconstruction meeting in accordance with   
        Section 01 31 19 – Project Meetings, to discuss the following:
        1. Keying Conference: Conduct keying conference at Project site and incorporate decisions into final keying schedule after reviewing door hardware keying system.
        2. Electrified Hardware Conference: Conduct pre-installation conference at Project site and review methods and procedures related to electrified door hardware.
     5. Coordination: Obtain and distribute templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Coordinate with shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware.
  2. SUBMITTALS
     1. Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
     2. Action Submittals: Provide the following submittals before starting any work of this Section:
        1. Product Data: Submit product data indicating installation details, material descriptions, dimensions of individual components and profiles, and finishes.
        2. Shop Drawings: Submit shop drawings indicating details of electrified door hardware including, but not limited to, the following:
           1. Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer installed and site installed wiring.
        3. Samples:
           1. Submit samples of complete line of hardware and finishes, if and when requested, to accompany any proposal for substitution. Fully label each sample as to manufacture, type, size, and location for use proposed.

SPEC NOTE: As indicated below, provide a Door Hardware Schedule prepared by an AHC, for this project. It should be appended to this Section and identified on the Table of Contents.

* + - 1. Hardware Schedule: Submit door hardware schedule prepared by Architectural Hardware Consultant (AHC), detailing fabrication and assembly of door hardware, following the hardware groups identified on Drawing A##.##.
    1. Do not order hardware from manufacturers until samples have been approved. Hardware and finishes supplied shall be identical with approved samples.
  1. PROJECT CLOSEOUT SUBMISSION
     1. Operation and Maintenance Data: Provide operations and maintenance information in accordance with Section 01 33 00 – Submittal Procedures.
     2. Spare Parts and Tools: Submit unique parts and tools for maintaining hardware system in accordance with Section 01 33 00 – Submittal Procedures.
  2. DELIVERY, HANDLING AND PROTECTION
     1. Pack hardware in suitable wrappings and containers to protect from injury during shipping and storage. Enclose accessories, fastening devices and other loose items with each item. Mark packages for easy identification as indicated on approved delivery schedule. Hand over hardware to designated installer.
  3. WARRANTY
     1. Warrant door closers to remain free from defects in materials and workmanship in accordance with the General Conditions, but for a period of five (5) years, and locks and locksets for two (2) years. Agree to promptly make good defects which become apparent within warranty periods without cost to Owner.

1. Products
   1. GENERAL
      1. Supply to the job site all items of finishing hardware as indicated in the Hardware Scheduled appended to this Section. All items to be supplied with complete and adequate fixing and anchoring devices necessary for satisfactory installation into or upon the various surfaces to which it is to be affixed.
      2. Cooperate with all trades using hardware supplied under this Section.
      3. Render a complete service to the metal fabrication contractor wherein full cooperation is assured them of the supply of hardware information, and templates as requested.
      4. Supply for installation by others where specified, as scheduled or indicated on the drawings.
      5. In case of dispute the Consultant's decision will be binding in all cases.
      6. Provide six, (6) copies of the hardware specification for field construction and office use.
      7. All hardware shall be of the best quality and design, construction, and finish, free from all defects.
      8. All blank strikes shall be ASA with no lip.
      9. Lock strikes shall be ASA with lip.
      10. All deadlock strikes shall be ASA with no lip.
      11. Where door pulls are scheduled on one side of door and a push plate on the other side, the contractor shall be responsible for fixing, so that the pull shall be secured through the door from the reverse side and the push plate installed to cover the thru bolts which will be countersunk flush with door.
      12. All door closers shall be non sized and where possible non handed. They shall be sized and adjusted by the installer to suit the site conditions.
      13. Panic sets are to be of style specified and completely plated.
      14. Before installing any hardware, carefully check all architectural drawings of Work requiring hardware, verify door swings, door and frame material and operating conditions. Ensure hardware will fit Work.
      15. Provide ULC approved hardware to ULC labelled doors.
      16. Check shop drawings and frame and door lists affecting hardware type and installation. Certify to correctness or advise Consultant in writing of required revisions.
      17. Templates:
          1. Check hardware schedule, drawings, and specifications. Furnish promptly to applicable trades any patterns, templates, template information and manufacturer's literature required for proper preparation for and application of hardware, in ample time to facilitate progress of Work.
          2. Exposed screws for installing hardware shall have Phillips or Robertson heads.
          3. All door closers shall have back-checking features and shall be of proper size to operate door efficiently.
          4. Use no wall stops on drywall.
          5. Rim Panic Device strikes shall be mortise type application. Equip panic devices with hex bolts.
      18. Hinges
          1. Provide mortise type hinges, steel based for interior doors and stainless steel or brass for exterior doors or interior doors exposed to moisture.
          2. Provide hinges with stainless steel pins; non removable for exterior and public interior exposure, non rising for non security exposure.
          3. Provide full length continuous geared hinges, continuous pin and barrel hinges or full mortise type heavy weight butt hinges on all high frequency use or extreme weighted doors.
          4. Where doors are required to swing 180 degrees, provide ball bearing type swing clear hinges sufficient to clear trim.
      19. Locks, Cylinders, Latches and Bolts
          1. Locks are to be ANSI Grade 1 mortise type unless specified otherwise.
          2. Equip all locks with anti-friction latches with auxiliary latch guard. All fire rated doors must have a minimum latch throw as indicated on the fire door label.
          3. Where lever trim is required, provide levers containing concealed mounting and constructed of solid cast or forged material.
          4. Locks must be lever type.
          5. Provide locks in accordance with current barrier free accessibility requirements as set out by the OBC or by the jurisdiction having authority, when located in the barrier free path of travel.
          6. Strikes shall be ANSI standard size with curved lip strikes for latch bolts and no lip strikes for deadlocks. Provide complete with wrought iron boxes finished to match strike.
          7. Automatic flush bolts are to be equipped on all fire rated pairs of doors with regular use. Provide a coordinator in conjunction with automatic flush bolts.
          8. Provide a filler bar when using coordinators for a clean architectural appearance.
      20. Closers
          1. All closers shall be hydraulically controlled and full rack and pinion in operation.
          2. All closers shall be fully adjustable including the following features: back check, speed control, and latch speed control.
          3. Provide mounting plates where required on special frame applications.
          4. Install all necessary attaching brackets, mounting channels, and cover plates where necessary for correct application of door closers.
          5. Supply to the Owner any special keys and wrenches as usually packed with door closers.
          6. Closers complete with a cover unless specified otherwise by the Consultant. Provide cover of matching architectural finish to the other hardware used in the project.
          7. Coordinate closers with overhead stops & holders.
      21. Push Plates and Door Pulls
          1. Provide and install stainless steel plates in type #304 stainless steel and install secure with screw fastening.
          2. Length of kick plates shall be 1-1/2" less than door width for single doors and 1" less than door width for doors in pairs.
          3. All stainless-steel plates are 0.050" thick, free of rough or sharp edges. Corners and edges to have slight radiuses. Install kick plates and armor plates on both sides of the door with 3M tape or counter sunk screws as specified.
          4. Where door pulls are scheduled on one side of door and push plates on other side, issue installations instructions to ensure that the pull is secured through door from reverse side and countersunk flush with door installation of push plate. Locate push plate to cover fasteners for door pulls.
      22. Door Stops and Holders
          1. Wall stops are only to be used on wall conditions such as block or masonry. If necessary to mount on drywall, provide proper backing to ensure no damage to the wall.
          2. Supply floor stops of sufficient height to suit floor conditions and the undercut of the door.
          3. Provide gray rubber exposed resilient parts.
          4. Surface mount overhead doorstops may be used unless they conflict with the door closer. All overhead stops are to be set to 90 degrees opening unless stated otherwise.
      23. Door Seals and Thresholds
          1. Perimeter seals must be provided that fully seal all gaps between the floor, door, and frame. Perimeter seal must protect against weather, smoke, and sound.
          2. Perimeter seal gasketing must be constructed of felt. The aluminum housing must have a rib to prevent against distortion during installation.
          3. Provide perimeter seals with felt inserts by door supplier.
          4. Install Thresholds in a manner that ensures the door bottom comes in full contact.
          5. All thresholds shall be aluminum and installed with lead shields and stainless-steel screws.
          6. Cut ends of thresholds to follow exactly the door frame profile.
   2. HARDWARE FINISHES
      1. P - Primed
      2. 32D - Brushed Stainless Steel
      3. AL - EN - Aluminum Paint
      4. 26D - Brushed Chrome
      5. 15 - Brushed Nickel
      6. 28 - Anodized Aluminum
      7. CAD - Cadmium Plated
      8. 26 - Polished Chrome
      9. 3 - Polished Brass
      10. EAB - Brass Paint
      11. BRN – Brown
      12. 630 – Stainless Steel
      13. BLK - Black
2. Execution
   1. INSTALLATION
      1. Subcontractor installing the hardware shall carefully follow manufacturers' instructions for installation of all finish hardware.
      2. For mounting heights of various hardware items refer to the following, unless otherwise indicated on the Drawings:
         1. Locksets: 1024mm (40-5/16") from centre of knob to finished floor.
         2. Deadlocks: 1220mm (48") from centre of cylinder to finished floor.
         3. Mortise Night Latches: 1024mm (40-5/16") from centre of cylinder to finished floor.
         4. Panic Bolts: 1024mm (40-5/16") from centre of crossbar to finished floor.
         5. Push Plates: 1143mm 45" from centre of plate to finished floor.
         6. Guard Bars: 1024mm (40-5/16") from centre of bar to finished floor.
         7. Door Pulls: 1067mm (42") from centre of pull to finished floor.
         8. Blank Strike: 1024mm (40-5/16") from centre of strike to finished floor.
         9. Blank Fronts: 1024mm (40-5/16") from centre of strike to finished floor.
   2. PERFORMANCE
      1. Adjustment and Cleaning:
         1. Provide services of competent mechanic without additional cost to Owner. Mechanic shall inspect installation of all hardware furnished under this Section and supervise all adjustments (by trades responsible for fixing) necessary to leave hardware in perfect working order.

END OF SECTION