CD DESIGN RELEASE PACKAGE 4 - ADDENDUM 02

PROJECT: SBC No. 166/005-08-2013 CM | MHM No. 15035 ETSU Fine Arts Classroom Building
DATE: January 12, 2018

Addendum 02 forms a part of CD Design Release Package 4 and modifies the original drawings and specifications issued on December 1, 2017.

DRAWINGS:
1. Unless noted otherwise, replace the following sheets with the attached updated sheets.
2. G001-D: Updated set issue date.
3. G003-D: Updated sheet index.
4. A201: Revised wall rating at room 111A.
5. A211: Revised wall rating at room 111A. Noted wall access panel location for acoustic drapery draw line access in SLL 136B & 136D.
7. A221: Noted wall access panel location for acoustic drapery draw line access at rear of balcony.
9. A817: Updated SLL136B elevation to show draw line wall access panel.
10. A841: Added light fixture dimensions for reference and revised related notes. Revised Box Office ticket window to be opening with roll-up shutter.
11. A851: Revised Box Office ticket window to be opening with roll-up shutter.
12. Sheets A913, A914, A914, A916, A917, A918, and A919. Legend on these sheets incorrectly shows a hexagon for plastic corner guards. This symbol should be a pentagon, as shown in the corrected legend below:

<table>
<thead>
<tr>
<th>CORNER GUARD LEGEND</th>
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<tr>
<td>○ WOOD KOPLUSE CORNER GUARD</td>
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</table>
15. M012: Revised control diagram.
17. M015: Revised chiller points list and notes.
18. M111: Revised notes and wall legend.
20. M113: Revised wall legend.
22. M115: Revised wall legend.
25. M118: Revised wall legend.
27. M120: Revised wall legend.
28. M121: Revised wall legend.
29. M211: Revised wall legend.
30. M212: Revised notes and wall legend.
31. M213: Revised notes and wall legend.
32. M214: Revised wall legend.
33. M215: Revised wall legend.
34. M216: Revised wall legend.
35. M217: Revised wall legend.
36. FP111: Revised wall legend.
37. FP112: Adjusted riser location, revised notes and wall legend.
38. FP113: Revised wall legend.
39. FP114: Revised notes and wall legend.
40. FP115: Revised layout at stage and wall legend.
41. FP116: Revised wall legend.
42. P001: Revised schedule.
43. P002: Revised details.
44. P111: Revised piping north of scene shop and wall legend.
45. P112: Revised piping location and wall legend.
46. P113: Revised piping north of recital hall and wall legend.
47. P114: Revised piping / notes at vestibules and wall legend.
48. P115: Revised wall legend.
49. P116: Revised piping at lobby restroom and wall legend.
50. P117: Revised roof drain locations and wall legend.
51. P118: Revised wall legend.
52. P119: Revised drain, overflow drain, and wall legend.
53. P120: Revised drain locations and wall legend.
54. P211: Revised piping and wall legend.
55. P212: Revised piping and wall legend.
56. P213: Revised wall legend.
57. E001: Revised notes and legend.
58. E003: Revised fixture schedule.
59. E004: Revised riser detail.
60. E005: Revised control details.
61. E006: Revised control details.
62. E007: Revised notes and schedules.
63. E111: Revised lighting, notes, and wall legend.
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67. E121: Revised lighting, notes, and wall legend.
68. E123: Revised wall legend.
69. E124: Revised lighting, notes, and wall legend.
70. E131: Revised lighting, notes, and wall legend.
71. E211: Revised power layout, notes, and wall legend.
72. E212: Revised power layout, notes, and wall legend.
73. E213: Revised power layout, notes, and wall legend.
74. E214: Revised power layout, notes, and wall legend.
75. E221: Revised power layout, notes, and wall legend.
76. E223: Revised power layout, notes, and wall legend.
77. E224: Revised power layout, notes, and wall legend.
78. E225: Revised power layout, notes, and wall legend.
79. Refer to FSC list attached to this summary for additional information.

Specifications and Narratives:

1. 00.01.07: Table of Contents. Replace this section with the attached updated section.
2. 04.16.00: Masonry Accessories. Replace this section with the attached updated section.
   Modified ties and reinforcing under 2.03.D & E.
3. 07.42.13: Metal Wall Panels. Add the following acceptable product and manufacturer
   under 2.01 A: "4. Metal Roofing Systems, Inc. MRS Mega Rib Panel.
   http://metalroofingsystems.biz
4. 08.71.00: Door Hardware. Replace this section with the attached updated section.
   Updated thresholds in hardware sets 3, 6, 11, 25, 26, 33, 34, 35, 38, & 40. Added mounting
   bracket to sets 7, 8, 13, 16, 24, 37, 43, 51, 58, 60, and 61.
5. 08.31.00: Access Doors and Panels. Replace this section with the attached updated section.
   Deleted duplicate types and clarified scope.
6. 11.61.24: Orchestra Shell. 1.10.4.C. Replace (2) references to 11961 with 11.61.61.
7. 11.61.33: Performance Manual Rigging. Delete 1.01.D.3
8. 32.30.00: Site Furnishings. Replace this section with the attached updated section. Added
   additional detail to Part 2.
9. Refer to FSC list attached to this summary for additional information.
REQUESTS FOR INFORMATION:

1. **Question:** Can you please advise or clarify - Finish Schedule A900 – Finish Legend list PT-11 Rosco paint over the Polyonyx. The room schedule does not list PT-11. Is this no longer required?
   
a. **Clarification:** PT11 is not used; it will be omitted from the legend.

2. **Question:** Drawings A914 and 915 show a pentagon symbol for the corner guards on the plans but not on the legend. Is this supposed to be the hexagon symbol or is the legend incorrect?
   
a. **Clarification:** The legend is incorrect. Refer to corrected legend under Drawings, above.

3. **Question:** Please clarify the following spec items:
   
   Section 11.61.24 references a spec section 11961 – Electrical feeder cables. This section does not exist. **Clarification:** The reference has been corrected above.
   
   Section 11.61.33 references Section 116155 – Powered adjustable acoustic devices – also don’t find this section. **Clarification:** This reference has been deleted.
   
   Several sub-sections to 11.61.61.XX are not in the table of contents. Are they to be part of the project? **Clarification:** Yes, see revised table of contents.

4. **Question:** In the site furnishing specs the sizes for the benches and bike racks are missing (how long, how many bikes?). There is only one manufacturer for the bench and none for the bike racks. The drawings show trash receptacles and note to see specs but there is nothing included.
   
a. **Clarification:** Refer to attached revised specification.

**End of Addendum 02**
ADDENDUM NUMBER 2 - MECHANICAL

ETSU Fine Arts Classroom Building
Design Release Package 4
Johnson City, Tennessee
January 12, 2018
SBC# 166/005-08-2013 CM

Changes/Modifications to the Drawings and Specifications:

1. Refer to drawing sheets M-112 and M113; ducts from AHU 1 shall be acoustically lined in Corridor 199M. Provide 60" silencer on supply duct before door leaving sheet M-112 to M-113. Silencer model VibroAcoustics RD-MV F3 60. Provide a minimum of 5' of straight duct prior to and after silencer. Provide acoustic lining from discharge of silencer until tap for VAV 1-9.

2. Refer to Section 211000; Sprinkler contractor shall provide 3 dimensional model of sprinkler system demonstrating coordination of piping with other trades. Contractor shall provide presentation to Owner's personnel emphasizing maintenance access for other trades, such as mechanical equipment, cable trays, etc.

3. Refer to drawing sheet M-006, provide 3 way valves at AHU's 1-4 pre-heat coils and AHU 3 chilled water coil.

4. Refer to Section 232116, 2.5 E; provide all pressure gauges at chiller or air handlers with a "Pete's plug".

5. Refer to attached revised Mechanical drawings M006, M011, M012, M013, M015, M111, M112, M113, M114, M115, M116, M117, M118, M119, M120, M121, M211, M212, M213, M214, M215, M216, and M217.


7. Refer to attached revised Fire Protection drawings FP111, FP112, FP113, FP114, FP115, and FP116.

THIS ADDENDUM SHALL BECOME A PART OF THE PROJECT MANUAL AND HAVE FULL EFFECT AS IF SUBMITTED WITH THE ORIGINAL DOCUMENTS.

January 12, 2018
By:
Facility Systems Consultants, LLC

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ADDENDUM NUMBER 2 - ELECTRICAL

ETSU Fine Arts Classroom Building
Design Release Package 4
Johnson City, Tennessee
January 12, 2018
SBC# 166/005-08-2013 CM

Changes/Modifications to the Drawings and Specifications:

Electrical

1. Refer to Electrical Site Plan ES1.0.
   a. Refer to circuit CC-1 serving wall packs and canopy lighting on the West, North, and East sides of the building. This wiring shall be overhead inside the building in lieu of underground shown. Carry unswitched hot (3 conductors plus ground) to all fixtures for emergency egress battery packs.
   b. Refer to junction box shown for stair rail lighting type "SE". Junction box shall be Quazile Tier 15, PG series, 12" W x 18" L x 18" D, set flush in grade for remote power supplies. Add two more junction boxes of this same type and installation at the other two stair rail lighting locations at the western most sidewalk.
   c. Refer to circuit CC-4 serving types "SH" and "SK" on East side of building. This wiring shall be overhead inside the building in lieu of underground shown. Provide a total of (9) type "SH" in lieu of (3) shown. See architectural elevations for exact locations.
   d. Refer to type ‘SF". Fixture shall be 27 watts with integral emergency battery pack. Revise part number to be SVPG-168L-600-NW-SM-5-EBP-UNV-??
   e. Refer to type "SH". Fixture shall be 19 watts. Revise part number to be S.5075N-UNV-??.


3. Refer to attached new drawing sheets E225.

4. Refer to Ground Level HVAC Power Plan – Quadrant 1 – E311. Refer to Scene Shop Storage 111A. At pre-manufactured paint booth, provide 120 volt, 20 ampere circuit and toggle type disconnect and connect exhaust fan for booth. Last 10 feet to motor (down-stream of toggle disconnect) shall be explosion proof wiring ¾" GRS with 2#12, 1#12G, and EP Seal-Offs. At change-over to EMT extend ¾", 2#12, 1#12G back to Panelboard "H" and connect to circuit H-22.

THIS ADDENDUM SHALL BECOME A PART OF THE PROJECT MANUAL AND HAVE FULL EFFECT AS IF SUBMITTED WITH THE ORIGINAL DOCUMENTS.

1/12/2018

By: NATHAN A. BROWN
Facility Systems Consultants, LLC
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**END OF SECTION 00.01.10**
PART 1 - GENERAL  1.01 DESCRIPTION
A. Work Included: The extent of the masonry work is shown on the drawings.
  1. Related Work Described Elsewhere:
     2. Section 04.05.11 - Mortar and Masonry Grout
     3. Section 04.20.00 - Unit Masonry

1.02 SUBMITTALS
A. Manufacturer’s Data: Submit manufacturer's specifications and installation instructions for each masonry accessory required. Include data substantiating that materials comply with specified requirements. Send a copy of manufacturer's instructions to the installer.
B. For cavity spaces over 4 1/2", provide the design of the ladder eye-wire reinforcement by an engineer licensed in the State of Tennessee or provide additional masonry to reduce cavity space. The solution must meet the requirements of the masonry code “Building Code Requirements and Specification for Masonry Structures.”

PART 2 - PRODUCTS  2.01 GENERAL
A. Fire Rated Masonry: Wherever a Fire Resistance Classification is shown or scheduled for unit masonry construction (1-Hour, 2-Hour and similar designation), provide accessories which have been tested and listed for the construction shown.

2.02 REINFORCEMENT
A. Continuous Wire Reinforcing and Ties for Masonry:
  1. General: Provide welded wire units prefabricated in straight lengths of not less than 10' feet (3m) with matching corner and tee units. Fabricate from cold drawn steel wire complying with ASTM A82, with deformed continuous side rods and plain cross rods and a unit width of 1-1/2" to 2" (38mm to 51mm) less than thickness of wall or partition. Corner and tee units to be provided at all wall intersections.
B. For Single Wythe Masonry Provide Units Fabricated As Follows:
  1. Truss type fabricated with single pair of side rods and continuous diagonal cross rods.
C. Wire Size: Fabricate with 9 gauge side and cross rods, unless otherwise shown or specified. Refer Paragraph E. below.
   1. For use in interior partition walls fabricate from mill galvanized wire.
   2. For use in exterior walls fabricate from hot dipped galvanized wire with 1.5 oz. zinc coating complying with ASTM A153, Class B-2.
D. Manufacturers: The following manufacturers offer products which comply with the requirements of this specification:
   1. Wire-Bond.
   2. Dur-O-Wal.
   3. Hohmann and Barnard.
   4. Lox-All, Cumberland Corporation.
   5. Southern Wire Mesh Company.
E. For exterior walls with block back up and brick veneer provide masonry reinforcing as follows: "Tab-Tie" prefabricated continuous reinforcing spaced as shown on drawings; Durowal “Dur-O-Tab” or equal. Side wires 3/16" diameter deformed and all galvanized. Refer to drawings for different wall thickness.
F. Bending of "Tabs" will not be permitted for any reason.
2.03 ANCHORING DEVICES FOR MASONRY

A. General: Provide straps, bars, bolts and rods of the type and size shown, but fabricated from not less than 16 gauge sheet metal or 3/8" (9mm) diameter rod stock, unless otherwise shown.

B. Stud to CMU Ties: Hohmann & Barnard (or equal), Model No. DW-10HS with “Tri-Tie” triangular 3/16” diameter anchor. Space 16” o.c. each way.

C. Brick Ties to Exterior Wall Metal Studs: Hohmann & Barnard, Inc. (or equal), Thermal 2-Seal Tie Veneer Anchors, with continuous wire for seismic conditions, all Type 304 stainless steel. Coordinate sizes of anchors with thicknesses of wall assemblies.
   1. Metal brick tie straps shall be anchored by stainless steel barrel with screw through sheathing material and firmly into metal exterior wall stud. Do not anchor to sheathing alone. Maximum anchorage spacing at 16" X 16" o.c.

D. Brick Ties to Exterior Wall Masonry: Hohmann & Barnard (or equal), Model 170-2X-SH Adjustable Truss Eye-Wire with Seismic Hook. Truss type masonry joint reinforcing with protruding eye-wires to receive seismic hooks. All Type 304 stainless steel.
   1. See note for submittals for conditions where veneer cavity exceeds 4 1/2”.

E. Column Ties: Hohmann & Barnard (or equal), Model No's.359 weld-on ties with VBT triangular anchors 1/4” diameter; trapezoidal ties 302W and 301W; or rectangular ties 1/4” diameter, as fits condition. Spacings as per manufacturers recommendations and maximum of 16” o.c. vertically.

F. Debonded Shear Anchors: Hohmann & Barnard (or equal) Slip-Set Stabilizer, joint stabilizing anchor, Standard Type, allowable load transfer capacity of 305 pounds per anchor, maximum vertical spacing of 8” inches.

2.04 FLASHING FOR MASONRY

A. General: Provide concealed flashings shown to be built into masonry.
   2. Stainless Steel Flashing: ASTM A666, Type 304, soft temper, 26 gauge, 0.0187 inch thick, finish 2B to 2D.
   3. Sealant joints at shelf angles: Horizontal sealant joints as shelf angles shall match color of adjacent mortar.

B. Manufacturers offering products to comply with the requirements include the following:
   1. York.
   2. Polytite.
   3. Cheney.
   4. Sandou.
   5. Advanced.

2.05 MASONRY ACCESSORIES

A. Reinforcing Bars: Deformed steel reinforcing bars complying with ASTM A615 Grade 60 of the sizes shown.

B. Preformed Control Joint: Factory-extruded solid section of rubber conforming to ASTM C2000 2AA 805 with a durometer hardness of approximately 80 when tested in conformance with ASTM D2240.
   1. Control joint section shall be capable of resisting a uniform load of 294 lb. per foot for wide flange section and 338 lb. per foot for regular section.
   2. Provide with corner and tee accessories, fused joints.

C. Control Joint in Face Veneer: 3/8” thick X 3” wide, closed cell neoprene material conforming to ASTM D1056, Class RE41, compression up to 35%, manufactured with an adhesive surface.
   1. Manufacturers offering products to comply with the requirements include the following:
a. AA Wire Products Company.
b. Dur-O-Wal.
c. Ty-Wal.

D. Grout Stop: "Durowal" D/A 1010-1013, Fil Stop fiber glass mesh, 10 x 10 white resin coated glass mesh, conforming to ASTM D1668, Type 207.

E. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and to allow proper cavity drainage.
   1. Full-Height Airspace Maintenance and Drainage Material: Mesh panels, fitted between masonry ties, where indicated on Drawings.
   2. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.

F. Termination Bars: Stainless steel; compatible with membrane and adhesives.

G. Weeps:
   1. Type: Polyester mesh, vertical head joint type, matching color of mortar. Typical.
   2. Type: Tube type plastic weeps only where indicated on Drawings.

H. Cavity Vents:
   1. Type: Polyester mesh, vertical head joint type, matching color of mortar. Typical.

I. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

PART 3 - EXECUTION
3.01 INSPECTION
   A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION
   A. See Section 04.20.00 - Unit Masonry and other applicable sections.

3.03 COORDINATION
   A. Carefully coordinate with all other trades to ensure proper and adequate interface of the work of other trades with the work of this section.

END OF SECTION 04.16.00
PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Wall access door and frame units.
   B. Ceiling access door and frame units.

1.02 RELATED REQUIREMENTS
   A. Section 08.71.00 - Door Hardware: Mortise cylinder and core hardware.
   B. Section 09.91.13 - Exterior Painting: Field paint finish.
   C. Section 09.91.23 - Interior Painting: Field paint finish.

1.03 REFERENCE STANDARDS
   B. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2013.

1.04 SUBMITTALS
   A. See Section 01.30.00 - Administrative Requirements, for submittal procedures.
   B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
   C. Shop Drawings: Indicate exact position of each access door and/or panel unit.
   D. Manufacturer's Installation Instructions: Indicate installation requirements.
   E. Project Record Documents: Record actual locations of each access unit.

1.05 TENNESSEE HIGH PERFORMANCE BUILDING REQUIREMENTS (HPBR) COMPLIANCE DOCUMENTATION
   A. Reference document - State of Tennessee High Performance Building Requirements Manual, Version 1.01, as referenced in Section 01.78.50 HPBr Reporting and as tracked by the Section 01.78.50 HPBr CHECKLIST/TRACKING FORM.
   B. Provide documentation of construction wast diverted from landfills:
      1. Compliance with Credit MR2.1 - Construction Waste Management - 50%
   C. Submit documentation demonstrating HPBr compliance for the following:
      1. Compliance with Credit MR3.1: Sustainable Materials - Recycled content 10%.
      2. Compliance with Credit EQ6.1: Material VOC Limits - Adhesive and sealants
   D. Submit documentation of quantity and material cost with monthly Application for Payment to the Contractor.

1.06 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
   B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.
PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

A. Wall-Mounted Units:
   1. Location: As indicated on drawings.
   3. Size: as indicated on drawings.
   4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   5. Gypsum Board Mounting Criteria: Unless noted otherwise, provide drywall bead frame with door surface flush with wall surface. At lobby, main auditorium, and recital hall, and where noted, provide drywall bead frame with door surface recessed for infill with wall finish.
   6. Masonry Mounting Criteria: Unless noted otherwise, provide surface-mounted frame with door surface flush with frame surface. At lobby, main auditorium, and recital hall, provide frameless mounted door with door surface recessed for wall finish.

B. Fire-Rated Wall-Mounted Units:
   1. Location: As indicated on drawings.
   2. Wall Fire-Rating: As indicated on drawings.
   4. Size: As indicated on drawings.
   5. Door/Panel: Insulated double-surface panel, with tool-operated spring or cam lock and no handle.

C. Ceilings, Unless Otherwise Indicated: Same type as for walls. Where a gypsum board ceiling greater than 120 square feet is not accessible provide a 24" x 24" access panel whether shown or not. Coordinate location with Mechanical.

D. Fire-Rated Ceiling-Mounted Units:
   3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.
B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to proceeding with this work.
B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

A. Install units in accordance with manufacturer's instructions.
B. Install frames plumb and level in openings, and secure units rigidly in place.
C. Position units to provide convenient access to concealed equipment when necessary.
SECTION 08.33.13
COILING COUNTER DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Non-fire-rated coiling counter doors and operating hardware.
B. Electric motor operation; wiring from electric circuit disconnect to operator to control station.

1.02 REFERENCE STANDARDS
A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
B. ITS (DIR) - Directory of Listed Products; current edition.
C. NEMA MG 1 - Motors and Generators; 2014.
D. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

1.03 SUBMITTALS
A. See Section 01.30.00 - Administrative Requirements, for submittal procedures.
B. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.
C. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.
D. Samples: Submit two slats, 4 inch long, illustrating shape, color and finish texture.
E. Manufacturer's Instructions: Indicate installation sequence and installation, adjustment, and alignment procedures.
F. Operation and Maintenance Data: Indicate modes of operation, lubrication requirements and frequency, and periodic adjustments required.
G. Project Record Documents: Include as-built electrical diagrams for electrical operation and connection to fire alarm system.

1.04 QUALITY ASSURANCE
A. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 COILING COUNTER DOORS
A. Coiling Counter Doors, Non-Fire-Rated: Galvanized steel slat curtain.
   1. Mounting: As indicated on drawings.
   3. Slat Profile: Flat.
   5. Color: As selected from manufacturer's standard range.
   6. Guides: Formed track; same material and finish unless otherwise indicated.
   8. Electric operation.
2.02 MATERIALS

A. Curtain Construction: Interlocking, single thickness slats.
   1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
   2. Curtain Bottom: Fitted with angles to provide reinforcement and positive contact in closed position.
   3. Steel Slats: ASTM A653/A653M galvanized steel sheet, with minimum G90/Z275 coating; minimum thickness 16 gage, 0.06 inch.

B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.

C. Hood Enclosure: Internally reinforced to maintain rigidity and shape.

D. Lock Hardware:
   1. For motor operated units, additional lock or latching mechanisms are not required.

E. Roller Shaft Counterbalance: Steel pipe and torsion steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

2.03 ELECTRIC OPERATION

A. Operator, Controls, Actuators, and Safeties: Listed and classified by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction as suitable for the purpose specified and indicated.
   1. Provide interlock switches on motor operated units.

B. Electric Operators:
   1. Mounting: Side mounted.
   3. Motor Rating: As recommended by manufacturer; continuous duty.
   4. Motor Voltage: 24 volt, single phase, 60 Hz.
   5. Opening Speed: 6 inches per second.

C. Control Station: Standard three button (OPEN-STOP-CLOSE) momentary control for each operator.
   1. 24 volt circuit.
   2. Surface mounted.

D. Safety Edge: Located at bottom of curtain, full width, electro-mechanical sensitized type, wired to stop operator upon striking object, hollow neoprene covered.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure.

D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

E. Complete wiring from disconnect to unit components.

3.02 ADJUSTING

A. Adjust operating assemblies for smooth and noiseless operation.
3.03 CLEANING
   A. Clean installed components.
   B. Remove labels and visible markings.

END OF SECTION
SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

B. Installation of all electrified and mechanical door hardware items is described and required to be provided in other related Sections of these Specifications.

Door hardware items specified to be furnished by the contract door hardware supplier, under this section. Door hardware items specified for installation on aluminum door openings shall be shipped from the contract door hardware supplier directly to the manufacturer / supplier of the aluminum door openings for hardware preparations and installation. Shipment(s) shall take place in a manner to avoid any delays in the work.

Hardware supplier must be an authorized, direct factory distributor of all door hardware and access control products specified herein to insure compliance and service of these products.

C. Unless otherwise approved by the Architect / Engineer, furnish all door hardware items as described in the door hardware schedule.

1.02 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.

B. This Section includes the following:

- Butt Hinges
- Continuous Geared Hinges
- Cylinders and Keys
- Cylindrical Latchsets and Locksets
- Mortise Latchsets and Locksets
- Deadbolts with Accessories
- Exit Devices
- Door Closers
- Overhead Door Stops / Holders
- Wall and Floor Stops
- Electromagnetic Door Holders
- Push and Pull Bars
- Mop and Kick Plates
- Lock Guards
- Thresholds
- Door Sweeps
- Self-Adhesive Gasketing
- Perimeter Gasketing
- Drip Strips
- Door Silencers
- Security Equipment
C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Section 05 50 00 - Metal Fabrications
2. Section 06 20 00 - Finish Carpentry
3. Section 07 92 00 - Joint Sealants
4. Section 08 11 13 - Hollow Metal Doors and Frames
5. Section 08 14 16 - Flush Wood Doors
6. Section 08 34 73 - Sound Control Door Assemblies
7. Section 08 41 13 - Aluminum-Framed Storefronts
8. Section 08 33 23 - Overhead Coiling Doors
9. Division 26 - Electrical
10. Division 27 - Communications
11. Division 28 - Electronic Safety and Security
12. Hardware specified under other Sections is excluded from this Section.

1.03 REFERENCES

A. Standards of the following as referenced:

1. 2010 ADA Standards for Accessible Design
2. American National Standards Institute, Inc. (ANSI)
3. Door and Hardware Institute (DHI)
5. Intertek Testing Services - Warnock Hersey (ITS-WH)
10. Underwriter’s Laboratories, Inc. (UL)

B. Regulatory standards of the following as referenced:

1. Department of Justice, Office of the Attorney General, Americans with Disabilities Act, Public Law 101-336 (ADA)

1.04 SYSTEM DESCRIPTION

A. Refer to applicable headings for system description for electric hardware products.

1.05 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification, Section 01 33 00 - Submittal Procedures; for submittal procedures.

B. Product data including manufacturers’ technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements. Clearly highlight each submitted item and data applicable to this project on manufacturer’s cut sheets. Arrange cut sheets in an order in which each item appears in the hardware sets.

C. Final hardware / access control systems schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into vertical format “hardware sets” indicating complete designations of every item required for each door or opening. Use specification Set Numbers with any variations suffixed with A, B, etc. Include the following information:
a. Type, style, function, size, and finish of each hardware item.
b. Name and manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of each hardware item referenced to indications on drawings both on floor plans and in the door and frame schedule.
e. Explanation of all abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for hardware.
g. Door and frame sizes and materials.
h. Keying information.
i. Provide a complete and detailed system of operating and elevation diagrams specifically developed for each opening requiring electrified hardware, except openings where only electromagnetic door holders and/or door position switches are specified. Provide these diagrams with the hardware schedule submittals, for approval. The following shall be included:
   (1) Point-To-Point wiring diagram.
   (2) Elevation of each door.
   (3) Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.

j. Cross reference numbers used within schedule deviating from those specified.
   (1) Column 1: State specified item and manufacturer.
   (2) Column 2: State prior approved substituted item and its manufacturer.

2. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g.: hollow metal frames) which is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of hardware schedule.

3. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner’s final instructions on keying of locks has been fulfilled.

D. Samples of each type of exposed hardware unit in finish indicated and tagged with full description for coordination with schedule. Submit samples prior to submission of final hardware schedule.

1. Samples will be returned to the supplier. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated in the work, within limitations of keying coordination requirements.

E. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

This is a requirement of the door hardware supplier to furnish all templates of each required door hardware item to the suppliers of the hollow metal doors and frames. No templates shall be sent until all door hardware items have been approved.

F. Electronic Hardware Systems:

1. Wiring Diagrams: Coordinate the installation of all required electronic hardware items with the Project Electrical Engineer and provide all necessary installation and technical data, including wiring diagram drawings, to the Project Electrical Engineer and Electrical Sub-Contractor. Provide a copy of all wiring diagram drawings with each door hardware schedule submitted after approval.
2. Provide complete operational descriptions of electronic components listed by each door opening in the door hardware submittals. Operational descriptions are to detail how each electrical component functions within the door opening, incorporating all conditions of ingress and egress. Provide this information with each door hardware schedule submitted for approval.

3. Provide elevation drawings of electronic hardware items and systems identifying locations of the system’s components with respect to their placement in the door opening. Provide a copy of all elevation drawings with each door hardware schedule submitted for approval.

4. The electrical products contained within this specification represents a complete engineered system. If alternate electrical products are submitted, it is the responsibility of the distributor to bear any and all costs of providing a complete and operational system including re-engineering of electrical diagrams and system layout, as well as power supplies, power transfers, and all other required electrical components. Coordinate with the Project Electrical Engineer and Electrical Sub-Contractor to ensure that line voltage and low voltage wiring requirements are coordinated to provide a complete and operational system.

5. Upon completion of the electrical hardware installation, the door hardware supplier shall verify that all electrical components are functioning properly and state in the required guarantee that this inspection has been performed.

G. Contract closeout submittals: At the completion of this Project, furnish to the Owner two (2) copies of an Owner’s Operation and Maintenance Manual. This manual shall consist of a labeled, hardcover, three-ring binder with the following technical information.

1. Maintenance instructions for each door hardware item.

2. Manufacturers’ catalog cut-sheets for each of their respective products.

3. Parts list for each of the manufacturers’ respective products.

4. Final “Approved” Door Hardware Schedule.

5. Final “Approved” Keying Schedule.

6. Warranty: Completed and executed warranty forms.

1.06 QUALITY ASSURANCE

A. Deleted.

B. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, security equipment, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

C. Qualifications of Supplier: A recognized architectural door hardware supplier, with warehousing facilities, who has been furnishing hardware and installation in the Project’s vicinity for a period of not less than 5 years. The supplier shall be, or shall employ, a certified Architectural Hardware Consultant (AHC) and Security Consultant who is available, at reasonable times during the course of the work, for consultation about the Project’s hardware requirements, to the Owner, Architect, and Contractor.

A certified Architectural Hardware Consultant (AHC) and Security Consultant shall prepare all hardware and access control schedules. Supplier shall be responsible for proper coordination of all door hardware items and access control items with related sections, to insure compatibility of products.
1. Hardware supplier must be an authorized, direct factory distributor of all door hardware and access control products specified herein to insure compliance and service of these products.

2. Require supplier to meet with Owner to finalize keying requirements and to obtain final instructions in writing.

D. Qualifications of Installer: The hardware installer shall have no less than five (5) years of documented experience in the installation of hardware of similar quantities and types as required for this project. The installer's qualifications shall be submitted to the architect, in writing, for approval by the architect before any work shall commence.

E. Fire-Rated Openings: Furnish door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of the Authorities Having Jurisdiction. Furnish only items, of door hardware, that are listed and are identical to products tested by UL, ITS-WH, FM, or other testing and inspecting organization acceptable to the Authorities Having Jurisdiction, for use on types and sizes of doors indicated, in compliance with the requirements of fire-rated door and door frame labels.

Project requires door assemblies and components that are compliant with positive pressure and S Label requirements. Specifications must be cross-referenced and coordinated with door and frame manufacturers to ensure that total door opening engineering is compatible with UL10C Standard for Positive Pressure Fire Tests of Door Assemblies.

F. Product Qualifications: Manufacturers names and numbers are used to indicate the standards of design and quality. Submittals should include a sheet listing grade of item, duty rating (if applicable) and finish.

G. Substitutions: All substitution requests are required to be submitted prior to the bid date and complying with the procedures and time frame as outlined in Section 00 21 13 - Instructions To Bidders. Approval of submitted products is at the discretion of the Architect and his Hardware Consultant.

H. General Contractor, hardware distributor, access control supplier, and installers shall count, coordinate, and store all door hardware and access control items herein, verifying complete counts of all items scheduled and furnished. The manufacturers’ and Owner’s representatives will inspect the installation of the door hardware and access control items during that phase of construction. Any deficiencies in installation of all materials included herein shall be corrected before installation continues.

I. At the Project’s Completion, the Owner’s Representative shall accompany the Architect and General Contractor during the door hardware and Access Control items punch list phase of the project close-out, insuring the Owner’s Representative is familiar with all applications and systems, as installed. Refer to additional requirements under 3. - EXECUTION.

J. Pre-Installation Meeting: Prior to door hardware installation, the General Contractor / Construction Manager shall request a hardware installation meeting to be held at the project’s location. This meeting shall convene no later than one month prior to the hardware’s installation. The types of hardware this meeting shall include are: locksets, exit devices, and door closers. The manufacturer’s representatives of the above listed products, in conjunction with the hardware supplier for this project, shall conduct the installation training. All hardware installers shall be required to attend this meeting to receive certificate of authorized training. This meeting shall serve as door openings coordination and review of all shop drawings from related trades prior to the hardware installation.

The hardware supplier shall include any related meeting costs in their proposal.

K. Electrified Hardware and Security Hardware Systems: Prior to ordering the electrified hardware, the General Contractor shall request a coordination meeting. This meeting shall convene prior to or after the Door Hardware Schedule and the wiring diagrams have been submitted to the General Contractor. All related trades shall be represented at this meeting, which shall also include the architect, the Owner’s representative, and the hardware supplier. This meeting shall serve as a review and coordination of all
electrified hardware, wiring, connections, location for power supplies, and remote switches, and door functions. All related trades shall make any required changes, and resubmit schedules, diagrams, and any other required data, no later than one (1) week following this meeting.

1.07 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.

B. Packaging of door hardware is the responsibility of the supplier. As material is received by the hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set numbers to match the set numbers of the approved hardware schedule. Two or more identical sets may be packed in the same container.

C. Door hardware supplier shall deliver all individually packaged hardware items promptly to the place of installation (Shop or Project Site); direct factory shipments are not acceptable unless agreed upon beforehand. Hardware supplier shall coordinate delivery times and schedules with the Contractor.

D. Inventory door hardware jointly with the General Contractor, representatives of the hardware supplier, and the hardware installer, until each is satisfied that the count is correct.

E. At the time of the hardware delivery, the door hardware supplier in conjunction with the Contractor shall verify and check in all hardware items. The Contractor must report all shortages (discrepancies with shipping documents) within five (5) working days.

F. General Contractor shall provide a secure lock-up for the door hardware and security equipment delivered to the Project, but not yet installed. Control handling and installation of the hardware items that are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

1.08 WARRANTY

A. All materials must be warranted against defects in workmanship and materials for a period of one (1) year from date of acceptance of this project, unless otherwise noted. Any evidence of misuse or abuse voids all warranties. These warranties shall be each manufacturer’s standard written warranty.

B. Special Warranties:

   Continuous Geared Hinges: Limited Lifetime.
   Cylindrical Latchsets and Locksets: Seven (7) Year Period.
   Mortise Latchsets and Locksets: Ten (10) Year Period.
   Exit Devices: Five (5) Year Period.
   Door Closers: Twenty-Five (25) Year Period.
   Electromagnetic Door Holders: Two (2) Year Period.
   Thresholds, Door Sweeps, Self-Adhesive Gasketing, Perimeter Gasketing, and Drip Strips: Three (3) Year Period.

C. Any manufacturer whose standard written warranty does not equal or exceed the requirements listed above must provide a letter stating that they will extend their warranty to comply with the requirements of this specification.

D. Refer to Section 01 77 70 - Contract Closeout; for additional warranty requirements.

1.09 MAINTENANCE
A. Maintenance Tools and Instructions: The General Contractor shall furnish a complete set of specialized tools and maintenance instructions as needed for the Owner’s continued adjustment, maintenance, and removal and replacement of door hardware.

B. Parts Kits: Furnish manufacturers’ standard parts kits for locksets, exit devices, and door closers.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Substitutions: Where specific manufacturers and their products are listed as “acceptable manufacturers”, provide those products from specified manufacturers; subject to compliance with specified requirements stated herein.

Any request for substitutions shall be submitted prior to the bid date and complying with the procedures and time frame as outlined in Section 01.25.13 – Product Substitution Procedure. Approved substitutions will be provided by addendum only.

Substitutions will not be allowed where only one manufacturer and their products are listed.

. BUTT HINGES

1. Acceptable Manufacturers:
   b. IVES; Division of Allegion, PLC (IVE) - 5BB1 / 5BB1HW (IVE).
   c. Stanley Hardware; A Division of Stanley Security Solutions, Inc. - FBB168 / FBB179 / FBB191 / FBB199 (STA).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.1.
   b. Type: Five (5) knuckle, full mortise, ball bearing.
   c. Templates: Furnish only template-produced units.
   d. Fasteners: Furnish Phillips flat-head screws complying with the following requirements.
      (1) For metal doors and frames, install machine screws into drilled and tapped holes.
      (2) For wood doors and frames, install threaded-to-the-head wood screws.
      (3) For fire-rated wood doors, install #12 x 1-1/4 inch, threaded-to-the-head steel wood screws.
      (4) Finish screw heads to match surface of hinges or pivots.
   e. Hinge Pins: Except as otherwise indicated, furnish hinge pins as follows:
      (1) Out-Swing Exterior Doors: Non-removable pins.
      (2) Out-Swing Interior Doors: Non-rising pins and Non-removable pins; as indicated in Door Hardware Sets.
      (3) In-Swing Exterior / Interior Doors: Non-rising pins.
      (4) Tips: Flat button and matching plug. Finished to match leaves.
   f. Size: Provide hinges 4.5” x 4.5” for doors up to 36” in width. Provide hinges 5” x 4.5” for doors over 36” in width. Hinge width shall be sufficient to allow door to swing to its maximum degree of opening.
   g. Quantity: Furnish one pair of hinges for all doors up to 5’-0” high. Furnish one additional hinge for each additional 2 feet or fraction thereof.

. CONTINUOUS GEARED HINGES

1. Acceptable Manufacturers:
   a. Hager Hinge Co. – 780-112-HD (HAG)
b. Select Products Limited - SL24 HD (SEL).
c. IVES; Division of Allegion, PLC (IVE) - 224HD.

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.26, Grade 1.
   b. Templates: Furnish only template-produced units.
   c. All hinges are to be “Full Mortise”.
   d. Hinges to be manufactured of extruded 6063-T6 aluminum alloy with an anodized finish.
   e. All hinge profiles to be manufactured to template bearing locations at 2 9/16” spacing.
   f. All hinges are to be furnished factory cut for each door size.
   g. Vertical door loads shall be carried on chemically lubricated polyacetal thrust bearings.
   h. The door and frame leaves shall be continuously geared together for the entire hinge length and this relationship secured with a full-length cover channel so that the hinge will operate through a full swing of 180 degrees.
   i. All rotating areas of the gear cap and geared leaves shall have a permanent lubricant which is factory applied along the full length of the hinge, and the lubricant shall last the life of the hinge without any additional maintenance required.
   j. Fasteners: Furnish manufacturer’s standard fasteners based upon recommendations for each installation.

.CYLINDERS AND KEYS

1. Acceptable Manufacturers:
   a. Corbin Russwin, Inc.; An ASSA ABLOY Group company (COR).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.28.
   b. Existing Key System: Furnish all cylinders keyed into East Tennessee State University’s existing “Corbin Russwin” interchangeable core key system, for this project.
   c. Equip all cylinders and locksets with the manufacturer’s standard 6-pin interchangeable core tumbler cylinders, 8000 Series.
   d. Furnish cylinders and locksets with temporary, brass / keyed, “Construction” interchangeable cores for the duration of the time of construction. Construction cores, master keys, and control keys shall not be part of the Owner’s permanent key system or furnished on the same keyway (or key section) as the Owner’s permanent key system. Construction cores, master keys, and control keys are the property of the manufacturer and shall be returned when the permanent cores and keys are installed. Remove these “Construction” interchangeable cores Only when directed by the Architect and / or Owner.
   e. Furnish final “Permanent” interchangeable cores and keys, for installation by the Owner.
   f. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.
   g. Comply with the Owner’s instructions for keying requirements and, except as otherwise indicated, furnish individual change keys for each lock that is not designated to be keyed alike with a group of related locks.

(1) Permanently inscribe each key with number of lock that identifies the cylinder manufacturer’s key symbol, and notation, “DO NOT DUPLICATE”.

h. A keying meeting between the Owner and a representative of the successful door hardware distributor shall be arranged subsequent to the return of the approved Door Hardware Schedule. A keying schedule will be established by the door hardware distributor’s representative and submitted to the Owner, for approval. After the Owner’s review, the keying schedule shall be returned to the distributor’s representative such that the permanent cores and keys can be prepared on a timely basis.
Permanent cores and keys will be transmitted directly to the Owner by the Door Hardware Distributor. The Owner shall be responsible for the installation of the permanent cores and the return of the construction cores and keys.

Key Material: Furnish keys of nickel silver only.

Key Quantities: Furnish the following quantities of keys for the entire project.

1. Ten (10) Each - Construction Master Keys
2. Two (2) Each - Construction Control Keys
3. Five (5) Each - Permanent Master Keys
4. Two (2) Each - Permanent Control Keys
5. Four (4) Each - Permanent Change Keys

(For Each Keyed Door Opening)

Deliver all construction interchangeable cores and keys to the General Contractor.

Deliver all permanent interchangeable cores and keys to the Owner, via Registered Mail.

CYLINDRICAL LATCHSETS AND LOCKSETS

1. Acceptable Manufacturers:
   a. Corbin Russwin, Inc.; An ASSA ABLOY Group company (COR) - CL3300 Series x “Newport (NZD)” Trim Design.

Characteristics:

1. Tested to be in accordance with or exceed ANSI / BHMA A156.2, Series 4000, Grade 1 Strength and Operational requirements.
2. U.L. Listed for 3-hour doors.
3. Locksets shall be non-handed.
4. Chassis: Cylindrical housing design, heavy gauge, cold rolled steel mechanisms, corrosion treated for normal atmosphere conditions.
5. Locksets shall have separate anti-rotational through-bolts for positive mounting / interlocking to the door, without any exposed mounting screws.
6. Locksets shall have solid cast levers, plated to match the specified finish symbols. Levers shall operate independently, and shall have separate, heavy duty, lever return springs or spring cages, allowing for a smooth operation of the lockset, for effective lever support, which shall prevent lever sag. Outside lever handles shall be a minimum of 4-5/8” in length and shall provide a minimum of 2” clearance from the surface of the door to the inside of the lever, at the midpoint. Outside lever handles shall return to within, a maximum, of 1/2” of the door surface.
7. Outside lever handles, on keyed locksets, shall be removable only when the designated key is in the cylinder.
8. When the outside lever handle is locked, the lever shall rotate freely and shall return to its horizontal position when released. The locked outside lever handle shall freely rotate up and down while remaining securely locked.
9. Roses: Wrought brass, bronze or stainless steel, plated to match the specified finish symbols. Roses shall be a minimum 3-7/16” in diameter, for coverage of the ANSI / DHI A115.18 - 1994 door preparation.
10. All locksets shall be furnished with a 1/2” throw latchbolt and shall be listed by Underwriter’s Laboratories, Inc. for A label and lesser class 4’-0” x 10’-0” single doors.
12. Strike: Brass, bronze or stainless steel, plated to match the specified finish symbols. Conform to ANSI A115.2 (4-7/8” x 1-1/4”), with lips of a sufficient length to clear trim and protect clothing.

MORTISE LATCHSETS AND LOCKSETS

1. Acceptable Manufacturers:
a. Corbin Russwin, Inc.; An ASSA ABLOY Group company (COR) - ML2000 Series x “Newport (NSR)” Trim Design or “110 Salvador” as scheduled.

2. Characteristics:
   a. Conforms to and/or exceeds all ANSI / BHMA A156.13, Series 1000, Grade 1 Operational, Grade 2 Security. ANSI / ASTM F476-84 Grade 30, U.L. Listed. Conform to and/or exceed 800,000 cycle ANSI Grade 1 requirements.
   b. Latchsets and locksets shall have all functions available in a one size case, fabricated from heavy wrought steel, zinc dichromate plated for corrosion resistance and lubricity of internal parts. Cases shall be closed on all sides to protect internal parts.
   c. The handing of all latchsets and locksets shall be reversible without the disassembly of the lockcase.
   d. Latchsets and locksets shall have adjustable, beveled and armored fronts, with standard 2-3/4” (70mm) backsets, with full 3/4” (19mm) throw two or three-piece mechanical stainless steel anti-friction latchbolts, one-piece stainless steel 1” throw deadbolts, and stainless steel auxiliary bolts.
   e. All latchsets and locksets with latchbolts, regardless of trim design, shall be listed by Underwriters Laboratories for 3-hour fire rated and lesser classified doors.
   f. Lock trim (knobs, levers, sectional or escutcheon) shall be throughbolted through the lockcase to assure correct alignment and proper operation.
   g. Latchsets and locksets shall be furnished with replaceable breakaway spindles, designed to resist excessive force from vandalism, preventing damage to lever trim and internal lock case components.
   h. Where indicated in Door Hardware Sets, when the outside lever handle is locked, the lever shall rotate freely and shall return to its horizontal position when released. The locked outside lever handle shall freely rotate up and down while remaining securely locked.
   i. Lever handles shall be one-piece, solid, brass, bronze, or stainless steel.
   j. Armor fronts, escutcheons, and roses shall be fabricated from brass, bronze, or stainless steel.
   k. Strikes shall be 16 gauge, curved, brass, bronze or stainless steel, with 1” deep strike boxes, and furnished with lips of sufficient lengths to clear trim and protect clothing.
   l. Furnish “Knurled” outside levers; as indicated in Door Hardware Sets. “Abrasive” outside levers shall not be acceptable.

EXIT DEVICES

1. Acceptable Manufacturers:

2. Characteristics:
   a. Tested to be in accordance with ANSI A156.3, 1994, Grade 1. All exit devices to be heavy duty, with one-piece removable covers. The housing shall be manufactured from extruded aluminum without exposed screws or rivets.
   b. Exit devices shall be “UL” listed for Life Safety. All exit devices for fire-rated door openings shall have “UL” labels for “Fire Exit Hardware”. All exit devices shall conform to NFPA 80 and NFPA 101 requirements.
   c. All series exit devices shall be “touchpad” (modern) types, incorporating a hydraulic fluid damper, which decelerates the touchpad on its return stroke and eliminates noise associated with the exit device operation. All exit devices shall be non-handed. The touchpad shall extend a minimum of 1/2 of the door width and shall be a minimum of 2-3/16” in height.
   d. Exit devices shall incorporate a deadlatching feature for security and / or for future addition of alarm kits and / or other electrical requirements.
   e. All latchbolts to be the deadlocking type. Latchbolts shall have a self-lubricating coating to reduce wear.
   f. Flush metal end caps shall be standard with all exit devices.
g. Exit device strikes, where surface applied, shall be a roller type and have an anti-slip mounting plate.

h. All outside exit device trim shall be forged brass, full escutcheon. The lever trim shall be a “breakaway type” with substantial resistance to rotation when locked but allowing the vandalized lever to drop to a vertical, 90 degrees, position when more than 35 pounds of torque is applied.

i. The exit device end caps shall be secured with three (3) screws to a truss bracket.

j. The “touchpad” exit devices shall be patterned punched to designate code requirements; where required.

k. Where detailed, provide electric latch retraction. Retraction shall be provided by motor driven retraction of latch. Where scheduled, provide coordinated power supplies, Von Duprin Series 900 with proper modules as listed.

l. All exit devices shall be fabricated of aluminum material, anodized to the standard architectural finishes to match the balance of the door hardware.

m. Provide standard “06” lever trim at all openings except where special “M52” trim is noted in the schedule of hardware.

. DOOR CLOSERS

1. Acceptable Manufacturers:
   a. Corbin Russwin, Inc.; An ASSA ABLOY Group company (COR) - DC6000 Series.

2. Characteristics:
   a. Door closers shall have fully hydraulic, full rack and pinion action with a high strength cast iron cylinder; which have been tested and certified under ANSI Standard A156.4, Grade 1.
   b. Hydraulic fluid shall be of an all weather type, requiring no seasonal closer adjustment.
   c. Spring power shall be continuously adjustable over the full range of closer sizes, and allowing for reduced opening force for the physically handicapped. Hydraulic regulations shall be by tamper-proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed and back check.
   d. All closers shall have solid forged steel main arms (and forearms for parallel arm closers) and where specified shall have a spring loaded stop in the soffit shoe; as indicated in Door Hardware Sets. Where door travel on out-swing doors must be limited, use spring loaded stop in the soffit shoe type closers. Auxiliary stops are not required when spring loaded stop in the soffit shoe type closers are used.
   e. Closers shall have non-metallic full, plastic, covers, which provides complete enclosure.
   f. All closers shall be of one manufacturer and shall maintain the manufacturer’s thirty (30) year warranty.
   g. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ADA and ANSI A117.1 provisions for door opening force.
   h. Closers shall be attached utilizing through bolts with wood and machine screws.
   i. Closers to be installed to allow door swing as shown on plans. Doors swinging into exit corridors shall provide for corridor clear width as required by code. Where possible, mount closers inside rooms.
   j. Powder coating finish to be certified to exceed 100 hours salt spray testing by ETL, an independent testing laboratory used by BHMA for ANSI certification. Lacquer or painted finish on metal components shall not be acceptable.

. OVERHEAD DOOR STOPS / HOLDERS

1. Acceptable Manufacturers:
   a. Glynn-Johnson Door Controls; Division of Allegion, PLC - 90 / 100 / 450 Series (GJ).
   b. Rixson Specialty Door Controls; An ASSA ABLOY Group company - 1 / 9 / 10 Series (RIX).
c. Sargent Manufacturing Company; An ASSA ABLOY Group company - 590 / 690 / 1540 Series (SAR).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.8, Grade 1.
   b. Furnish medium / heavy duty door stops, non-handed / reversible, of a, where detailed, carbon steel base substrate material or 300 Series stainless steel substrate material.
   c. Furnish units with a shock absorbing mechanism for added durability.
   d. All units are to be installed with the jamb bracket mounted on the stop, unless as indicated in the Door Hardware Sets, “Angle Jamb Brackets” are specified to be utilized. Overhead door stops specified with “Angle Jamb Brackets” are used to convert the installation of the units to hinge side mounting.

WALL AND FLOOR STOPS

1. Acceptable Manufacturers:
   b. IVES; Division of Allegion, PLC - WS401CCV / FS439 (IVS).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.16, Grade 1.
   b. Wall stops shall have a solid forged brass housing with a concealed, in the concave bumper, attachment. Furnish with wood screw and plastic anchors.
   c. Floor stops shall be fabricated from solid cast brass or bronze. Furnish with wood screws and plastic anchors / machine screws and lead expansion shield anchors.
   d. Install floor stops in such a position that they permit maximum door swing, but do not present a hazard or obstruction.

ELECTROMAGNETIC DOOR HOLDERS

1. Acceptable Manufacturers:
   a. Rixson Specialty Door Controls; An ASSA ABLOY Group company - Model 998.
   b. LCN; Division of Allegion, PLC (LCN) - SEM7850 Series.

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.15, Grade 1.
   b. Furnish electromagnetic door holders designed to hold designated doors in an open position when energized by an electrical current. Electromagnetic door holders shall be designed to operate in conjunction with U.L. Listed fire detectors and manual door closers. When electrical current is interrupted, holder shall become de-energized, releasing door and allowing manual door closer to perform its closing function.
   c. Door holders shall be a low profile, recessed, wall mount, for concealed wiring, and designed to be installed in a single outlet box. The outlet box shall be reinforced to withstand the shock of a door opening, preventing the box anchors from working loose. Electrical Sub-Contractor shall be responsible for furnishing outlet boxes, electrical wiring, conduit, and all other related components.
   d. Furnish door holders which can also be released by a simple manual pull on the door.
   e. Door holders shall be furnished with a Fail-Safe operation. When electrical power failure occurs, doors shall release to close automatically.
   f. Door holders shall be U.L. Listed for installation on smoke barrier 3-hour doors.
   g. Magnets shall be protected against transients and surges up to 600 volts.
   h. Voltage and Current: 120V AC, 50-60 Hz., @ .020 amp. maximum.
   i. Door armature assembly shall be through bolt mounted and furnished with a door reinforcing plate.
   j. For installations where 120V AC input voltage is required, 120V / 24V transformers are required to be furnished to reduce line voltage for 24V holding solenoids.
k. Electrical wiring of these units shall be in accordance with the National Electrical Code (ANSI / NFPA 70) for the appropriate class of circuit.
l. Final installation of these units shall be handled by and coordinated with General Contractor’s Electrical Sub-Contractor.

PUSH AND PULL BARS

1. Acceptable Manufacturers:
   b. Rockwood Manufacturing an ASSA ABLOY Group company – RM4110 Hickory; RM2110-8” (ROC).
   c. H. B. Ives, Division of Allegion PLC – 9190 Series at aluminum entrances (IVE).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.6, Grade 1.
   b. Push and pull bars shall be fabricated of 1” diameter solid bar stock. Push bars shall have a 2-1/2” projection with a 1-1/2” clearance. Pull bars shall have a minimum, 10” center-to-center length, 2-3/4” projection, 1-3/4” clearance, and shall comply with the recommendations of the Americans with Disabilities Act (A.D.A.).
   c. Fasteners: Furnish with one (1) 3/8-16 x 3” steel cone head machine screw with two (2) set screws, and (1) zinc plated, steel screw sleeve, for concealed, thru-bolt, back-to-back, mounting of the Common Ends. Furnish with two (2) 3/8-16 x 2-1/4” machine screws with blind thru-bolts, for mounting of the Free Ends.

KICK PLATES

1. Acceptable Manufacturers:
   a. Hager Hinge Co. – 193S Series
   b. IVES; Division of Allegion, PLC (IVE) - 8400 Series.

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.6, Grade 1.
   b. All mop and kick plates shall be US18 gauge (.050”) thick of stainless steel material.
   c. Fabricate mop plates not more than 1 inch less than door widths, on the “Pull” sides, and kick plates not more than 1 inch or 1-1/2 inches less than door widths, on the “Push” sides; or as indicated in Door Hardware Sets.
   d. Heights:
      (1) Kick Plates shall be 8 inches in height.
   e. Bevel three (3) edges.
   f. Fabricate kick plates with countersunk screw holes.
   g. Furnish kick plates with #6 x 5/8” truss head, stainless steel, sheet metal screws.

THRESHOLDS

1. Acceptable Manufacturers:
   a. National Guard Products, Inc. (NGP)
   b. Reese Enterprises, Inc. (RES)
   c. Zero International, Inc.; Division of Allegion, PLC (ZER).

2. Characteristics:
   a. Thresholds shall be certified by an independent testing laboratory to meet the requirements of ANSI / BHMA A156.21 and in accordance with the requirements of A.D.A.A.G. and ICC / ANSI A117.1.
   b. Thresholds shall be no less than a total thickness of .187” and furnished in an aluminum extrusion that is of alloy 6063 hardness T-5.
c. Furnish thresholds with a rugged abrasive “non-skid” finish of a nickel-aluminum composite, which is bonded by a heat-fusion process to the metal surface, by an exothermic reaction, at high temperatures.
d. Thresholds shall be furnished with 1/4”-20 x 3” stainless steel sleeve anchors.

. DOOR SWEEPS

1. Acceptable Manufacturers:
   a. National Guard Products, Inc. (NGP).
   b. Reese Enterprises, Inc. (RES).
   c. Zero International, Inc.; Division of Allegion, PLC (ZER).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.22.
   b. Door sweeps shall be furnished encased in a high quality aluminum extrusion that is of alloy 6063 hardness T-5.
   c. Furnish door sweeps with neoprene seals, rain drip strips, and #6 x 1/2” stainless steel, truss head, sheet metal screw fasteners.

. SELF-ADHESIVE GASKETING

1. Acceptable Manufacturers:
   a. National Guard Products, Inc. (NGP).
   b. Reese Enterprises, Inc. (RES).
   c. Zero International, Inc.; Division of Allegion, PLC (ZER).

2. Characteristics:
   b. Gasketing shall be furnished extruded from high grade silicone, with pressure sensitive, double backed, self-adhesive.
   c. Gasketing shall be classified by UL.

. PERIMETER GASKETING

1. Acceptable Manufacturers:
   a. National Guard Products, Inc. (NGP).
   b. Reese Enterprises, Inc. (RES).
   c. Zero International, Inc.; Division of Allegion, PLC (ZER).

2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.22.
   b. Gasketing shall be furnished encased in a high quality aluminum extrusion that is of alloy 6063 hardness T-5.
   c. Furnish gasketing with solid neoprene seals and #6 x 3/4” stainless steel, truss head, sheet metal screw fasteners.

. DRIP STRIPS

1. Acceptable Manufacturers:
   a. National Guard Products, Inc. (NGP).
   b. Reese Enterprises, Inc. (RES).
   c. Zero International, Inc.; Division of Allegion, PLC (ZER).
2. Characteristics:
   a. Drip strips shall be furnished in an aluminum extrusion that is of alloy 6063 hardness T5.
   b. Furnish all drip strips #6 x 1/2” stainless steel, truss head, sheet metal screw fasteners.

HARDWARE AT SOUND SEAL EQUIPPED DOORS

1. Acceptable Manufacturers:
   b. Reese Enterprises, Inc. (RES)
   c. Pemko; An ASSA ABLOY Group company (PEM)

2. Adjustable Head and Jamb Seals:
   a. Head and jamb seal housing shall have extruded metal housings with a minimum overall thickness of 0.93 inches.
   b. Head and jamb housing shall allow for a minimum of 0.31 inches of adjustability after installation.
   c. Seals shall be continuous closed cell sponge neoprene with a minimum width of 0.75 inches.
   d. Zero Model 770.

3. Automatic Door Bottoms:
   a. Door bottom housing shall have extruded metal housings with a minimum overall thickness of 0.83 inches.
   b. Door bottom shall have a minimum vertical travel of 1 inch.
   c. Seal shall be continuous closed cell sponge neoprene with a minimum width of 0.75 inches.
   d. Zero Model 369 (Mortised).

4. Astragals:
   a. Astragals shall have a minimum depth of 0.50 inches.
   b. Astragals shall allow for a minimum of 0.188 inches of adjustability after installation.
   c. Zero Model 55 & 155 (Surface Mounted)

5. Thresholds:
   a. Thresholds shall be extruded solid metal, ¼” minimum thickness.
   b. Threshold shall be flat without grooves.
   c. Zero Model 164A.

6. Door Closer, Door Holder, and Exit Device Strike Brackets:
   a. Door closer / holder brackets shall be solid steel with a minimum thickness of 0.157 inches.
   b. Door closer height shall be coordinated with the specified perimeter gasketing to allow for complete adjustability of the seals after installation.
   c. Provide brackets as required where top strikes of exit devices would be required to be mounted through the perimeter gasketing.
   d. All brackets used on fire doors must be listed by a recognized testing laboratory for that use.

DOOR SILENCERS

1. Acceptable Manufacturers:
   a. IVES; Division of Allegion, PLC (IVE) – SR64.
   c. Triangle Brass Manufacturing Company, Inc. (TRI) - 1229A.
2. Characteristics:
   a. Tested to be in accordance with ANSI / BHMA A156.16, Grade 1.
   b. Silencers shall be fabricated from a gray, opaque, rubber material, and featuring a pneumatic design that, once installed, forms an air pocket to absorb shock, reduce noise of door closing, eliminate door rattle, and provide constant tension for door latches or locks.
   c. Silencers shall be installed into pre-drilled hollow metal door frames, which if installed properly, shall become Tamper-Proof.
   d. Silencers shall be installed into pre-drilled wood door frames. To prevent removal, a small brad shall be driven into the stop strips of the wood frames and through the stems of the silencers.
   e. Furnish three (3) for each single door, four (4) for each single “Dutch” door, and two (2) for each pair of doors.

1. SECURITY EQUIPMENT

   1. Acceptable Manufacturers:
      a. Electric Latch Retraction:
         1. Von Duprin; Division of Allegion, PLC – QEL Series (VON)
      b. Power Supplies:
         1. Schlage Lock Company, LLC; Division of Allegion, PLC - PS900 Series (SCH).
         2. Von Duprin, Inc.; Division of Allegion, PLC - PS900 Series (VON).
      c. Key Switches:
         1. Schlage Lock Company, LLC; Division of Allegion, PLC – 653-04-L2 (SCH).

   2. Characteristics:
      a. Furnish all items as indicated in Door Hardware Sets.

   3. Coordinate all required security equipment items with Division 26 - Electrical, Division 27 - Communications, Division 28 - Electronic Safety and Security, Project Electrical Engineer, Electrical Sub-Contractor, Alarm System’s Engineers, and Access Control System’s Integrators.

CREMONE BOLTS

1. Acceptable Manufacturers:
   a. Richards Wilcox:
      1. Heavy Duty Cremone Bolt 1028.00310 Series (RW)
      2. Finish – Zinc Plated Steel

2.02 MATERIALS AND FABRICATION

A. Manufacturer’s Name Plate: Do not use manufacturers’ products that have manufacturer’s name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.

   1. Manufacturer’s identification will be permitted on rim of lock cylinders only.

B. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer’s standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI / BHMA A156 series standards for each type of hardware item and with ANSI / BHMA A156.18 for finish designations indicated. Do not furnish “optional” materials or forming methods for those indicated, except as otherwise specified.
C. **Fasteners:** Furnish hardware manufactured to conform to published templates, generally prepared for machine screw installation.

1. Do not furnish hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

2. Furnish screws for installation with each hardware item. Furnish Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible, including “prepared for paint” surfaces to receive painted finish.

3. Furnish concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of adequately fastening the hardware. Coordinate with wood doors and metal doors and frames where thru-bolts are used as a means of reinforcing the work, furnish sleeves for each thru-bolt or use sex screw fasteners.

### 2.03 HARDWARE FINISHES

A. Match items to the manufacturer’s standard color and texture finish for the latch and lock sets (or push-pull units if no latch of lock sets).

B. Furnish finishes that match those established by ANSI or, if none established, match the Architect’s sample.

C. Furnish quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with the manufacturer’s standards, but in no case less than specified by the referenced standards, for the applicable units of hardware.

D. The designations used to indicate hardware finishes are those listed in ANSI / BHMA A156.18, “Materials and Finishes”, including coordination with the traditional U.S. finishes, shown by certain manufacturers for their products.

- **Butt Hinges**
  - US26D (652) Satin Chromium
  - US32D (630) Satin Stainless Steel

- **Continuous Geared Hinges**
  - US28 (628) Satin Aluminum, Clear Anodized

- **Mortise Cylinders and Mortise Thumbturn Cylinders**
  - US26D (626) Satin Chromium

- **“Construction” Interchangeable Cores**
  - US19 (622) Flat Black Coated

- **“Permanent” Interchangeable Cores**
  - US26D (626) Satin Chromium

- **Cylindrical Latchsets and Locksets**
  - US26D (626) Satin Chromium

- **Mortise Latchsets and Locksets**
  - US26D (626) Satin Chromium

- **Exit Devices**
  - US26D (626) Satin Chromium

- **Door Closers and Mounting Plates**
  - US28 (689) Silver Aluminum Painted

- **Overhead Door Stops / Holders**
  - 652 Chrome-Like Coating on Steel
  - US32D (630) Satin Stainless Steel
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**PART 3 - EXECUTION**

**3.01 INSTALLATION**

A. Mount hardware units at heights indicated in the following applicable publications, except as specifically indicated or required to comply with governing regulations and, except as otherwise indicated, by the Architect.

1. “Recommended Locations for Builders Hardware for Standard Steel Doors and Frames” by the Door and Hardware Institute.

B. Install each hardware item in compliance with the manufacturer’s instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

C. Sets units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Where scheduled, Door Pulls shall be through-bolted with bolt heads concealed behind Push Plates.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Set thresholds, for exterior and interior doors, in a full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7, Section 07 92 00 - Joint Sealants.
G. Sound Seals: Comply with manufacturer’s instructions and recommendations to the extent installation requirements are not otherwise indicated.
1. Silencers shall not be installed on doors equipped with sound seals.
2. Sound seals shall be installed in coordination with all other scheduled hardware.
3. Contractor shall adjust all sound seals to provide a light tight seal at the entire perimeter of the door leaf.
4. All door closers shall operate silently under normal operation.
5. Apply a continuous bead of non-hardening, paintable sealant between the seal housing and door frame. Do not paint acoustical seals.
6. Acoustical seals shall be continuous when installed. Do not cut or otherwise modify seals or seal housings for any reason.

H. The hardware installer shall be responsible for installation of all mechanical and electromechanical hardware items contained within this specification, in accordance with the manufacturer’s technical installation guidance, and in addition to all applicable code requirements.

I. The Electrical Sub-Contractor, under Division 26 - Electrical, shall be responsible for providing and installing all (120 VAC) power source wiring as required for the electrified locking and access control hardware, equipment, accessories, and power supplies. This includes quad outlets as required on a dedicated circuit in designated IT / Telecommunication Room(s) and the related conduit, stud-ins, junction boxes, and connectors required for the power source delivery and connections. Provide cabling, conduit, stub-ins, patch cords, fire stop systems, data connectors, junction boxes, and back boxes for both the electrified locking hardware and access control equipment at each of the access controlled or monitored openings per plan drawings and specifications. Provide and install conduit between each of the aforementioned devices and between junction boxes, power supplies, and access control equipment located on or above each door opening.

Installation of power supplies and interfacing of security system with fire alarm system as required, and coordination of complete security system shall be provided by the Electrical Sub-Contractor, under Division 26 - Electrical. Electrical Sub-Contractor shall be responsible for providing and installing all 120 VAC cabling connections and terminations from the electrical junction boxes to these electrical devices.

J. The Access Control System’s supplier shall be responsible for providing all low-voltage (12 / 24 VDC) wiring and communication cabling (RS-232 / RS-485) installation from network control processors to reader controllers, I / O monitor / control interface panels, electrified and integrated locking hardware, remote card readers, keypads, or display terminals, monitoring and signaling switches, and power supplies, identification, and termination in accordance with the manufacturer’s technical installation guidance, in addition to all applicable code requirements. Installation of all card readers, controllers, software packages, door position switches, and run low voltage wiring from the power supplies / controllers to the electrified hardware items at each opening where specified. The Access Control System’s installer shall also be responsible for connectors, final wire terminations, final hook-ups, testing, system set-up, warranty, and Owner Turnover. Owner Training shall be provided under this Section.

K. Upon completion of the final installation of the Door Hardware and Access Control System, and burn in of the Security System, the Contract Hardware Distributor and the Access Control System’s Supplier shall jointly make final adjustments to the electrified hardware and Access Control System’s openings to insure proper adjustment and function of the opening is in compliance with the system’s functionality requirements.

3.02 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.
1. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, the hardware installers shall return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

B. Clean adjacent surfaces soiled by hardware installation.

C. Door Hardware Supplier’s Field Service:

1. Instruct Owner’s Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

D. Architect’s Hardware Consultant’s Field Service:

1. Inspect door hardware items for correct installation and adjustment after complete installation of the door hardware.

2. File a written report of this inspection directly to the Architect.

E. Continued Maintenance Service: Approximately six (6) months after the acceptance of hardware in each area, the Installer shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of any current or predictable problems (of substantial nature) in the performance of the hardware and furnish copy to the Owner’s Agent / Representative.

3.03 HARDWARE SCHEDULE

**Set No. A-1**
Each to have:
- 2 Continuous Hinges 780-112-HD HAG 628
- 2 Sets Push / Pull Bars 159V – BTB Mounted HAG 630
- 2 Door Closers DC6210-A11 x Drop Plate as Required COR 689

**Set No. A-2**
Each to have:
- 2 Continuous Hinges 780-112-HD HAG 628
- 2 Exit Devices CD9847DT VON 626
- 2 Cylinders Corbin / Russwin as Required CT6 COR 626
- 2 Door Closers DC6210-A11 x Drop Plate as Required COR 689

Weatherstrip, thresholds, sweeps complete with aluminum doors.

**Set No. A-3**
Each to have:
- 2 Continuous Hinges 780-112-HD HAG 628
- 1 Exit Device CD9847DT VON 626
- 1 Exit Device CD9847NL VON 626
- 3 Cylinders Corbin / Russwin as Required CT6 COR 626

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ISSUED: 12/01/2017
2 Door Closers  DC6210-A11 x Drop Plate as Required  COR  689
Weatherstrip, thresholds, sweeps complete with aluminum doors.

Set No. A-4
Each to have:
1 Continuous Hinge  780-112-HD  HAG  628
1 Continuous Hinge  780-112-HD w/EPT Prep  HAG  628
1 Power Transfer  EPT-10  VON  689
1 Exit Device  CD9847DT  VON  626
1 Exit Device  SD-QEL 9847NL  VON  626
3 Cylinders  Corbin / Russwin as Required CT6  COR  626
2 Door Closers  DC6210-A11 x Drop Plate as Required  COR  689
1 Power Supply  PS902 – 900-2RS – 900-8F  VON  - -
1 Card Reader  By Owner
Weatherstrip, thresholds, sweeps complete with aluminum doors.
Card reader, card reader power supply, controller, logic, wire and wiring by others.

Set No. A-5
Each to have:
1 Continuous Hinge  780-112-HD  HAG  628
1 Continuous Hinge  780-112-HD w/EPT Prep  HAG  628
1 Power Transfer  EPT-10  VON  689
1 Exit Device  CD9847DT  VON  626
1 Exit Device  SD-QEL 9847NL  VON  626
3 Cylinders  Corbin / Russwin as Required CT6  COR  626
2 Door Closers  DC6210-A11 x Drop Plate as Required  COR  689
1 Power Supply  PS902 – 900-2RS – 900-8F  VON  - -
Weatherstrip, thresholds, sweeps complete with aluminum doors.
Rough in for future card reader.

Set No. E-1
Each to have:
3 Ea. Butts  BB1191 – NRP  HAG  626
1 Exit Device  9875NL  VON  626
1 Cylinder  Corbin / Russwin as Required CT6  COR  626
1 Door Closer  DC6210 – A12  COR  689
1 Kick Plate  193S  HAG  630
1 Threshold  425  NGP  719
1 Door Sweep  200SA  NGP  628
1 Set Weatherstrip  700SA – Head & Jambs  NGP  628
1 Drip Cap  16A x M. O. Width  NGP  628

Set No. E-2
Each to have:
6 Ea. Butts  BB1191 – NRP  HAG  626
2 Flush Bolts  282D  HAG  626
1 Lever Entrance  ML2065 – NSA – CT6  COR  626
2 Door Closers  DC6210 – A12  COR  689
### Set No. E-3
Each to have:
Acoustical doors complete with all required hardware except:

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<th>Quantity</th>
<th>Description</th>
<th>Supplier</th>
<th>Unit Price</th>
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<td>HAG</td>
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<tr>
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<td>425HD (0.244 Inches Thick)</td>
<td>NGP</td>
<td>719</td>
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<tr>
<td>Door Sweeps</td>
<td>2</td>
<td>200SA</td>
<td>NGP</td>
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<td>700SA – Head &amp; Jambs</td>
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Set No. E-4
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Set No. E-5
Each to have:

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<td>Corbin / Russwin as Required CT6</td>
<td>COR</td>
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</tr>
<tr>
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<td>DC6210 – A11</td>
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<tr>
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<tr>
<td>Drip Cap</td>
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Card reader, card reader power supply, controller, logic, wire and wiring by others.

Set No. E-6
Each to have:

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<td>Cylinder</td>
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<td>Drip Cap</td>
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</table>

Rough in for future card reader.

Set No. E-7
Each to have:

Rolling steel service doors complete with all required hardware.

Set No. 1
Each to have:

---

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**ISSUED: 12/01/2017**
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<tr>
<td></td>
<td>1 Lever Passage CL3310 – NZD COR 626</td>
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<tr>
<td></td>
<td>1 Door Closer DC6200 COR 689</td>
</tr>
<tr>
<td></td>
<td>1 Kick Plate 193S HAG 630</td>
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<tr>
<td></td>
<td>1 Door Stop 236W HAG 626</td>
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<tr>
<td></td>
<td>3 Silencers SR64 IVE - -</td>
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<td>Lift interlock with this door complete with lift system.</td>
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<td>1 Dust Proof Strike 280X HAG 626</td>
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<td>1 Lever Office CL3351 – NZD – CT6 COR 626</td>
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<td>2 Door Closers DC6210/DC6200 COR 689</td>
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<tr>
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<td>2 Kick Plates 193S HAG 630</td>
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<td></td>
<td>2 Door Stops 236W HAG 626</td>
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<td>1 Door Closer DC6200 COR 689</td>
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<td>1 Door Stop 236W/241F HAG 626</td>
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<td>Kick Plate</td>
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Fire alarm power, relay, wire and wiring by others.
Building electrical power, wire and wiring by others.

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<tbody>
<tr>
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</table>
2 Power Transfers EPT-10 VON 689
2 Exit Devices QEL9827L-F-LBR VON 626
2 Exit Dev. Strike Mtg. Brackets 770SPB ZER 689
3 Cylinders Corbin / Russwin as Required CT6 COR 626
2 Door Closer / Holders 4040SE Pull Side Mounted LCN 689
2 Overhead Stops GJ90S series GJ 630
2 Door Stop Mounting Brackets 770SPB ZER 689
2 Kick Plates 193S HAG 630
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Set Astragals 55AA & 155AA ZER 628
2 Auto Door Bottoms 369 w/ End Caps ZER 628
1 Key Switch 653-04-L2 SCH - -
1 Power Supply PS902 – 9002RS – 900FA VON - -
1 Threshold Expansion Joint Flush Threshold By Others

Fire alarm power, relay, wire and wiring by others.
Building electrical power, wire and wiring by others.

Set No. 11
Each to have:
3  Ea. Butts BB1168 (4 Ea. @ Doors > 7’0”)
1  Power Transfer EPT-10
1  Exit Device QEL9875L-F x M52 Trim @ Doors 207C-C & 207C-B; 06 Trim @ All Other Doors.
3  Cylinders Corbin / Russwin as Required CT6
1  Door Closer DC6210-A11 COR 689
1  Door Closer Mounting Bracket 770SPB ZER 689
1  Kick Plate 193S HAG 630
1  Set Sound Seal 770SP – Head & Jambs ZER 628
1  Auto Door Bottom 369 w/ End Caps ZER 628
1  Key Switch 164A ZER 719
1  Power Supply PS902 – 9002RS – 900FA VON - -

Fire alarm power, relay, wire and wiring by others.
Building electrical power, wire and wiring by others.

Set No. 12
Each to have:
3  Ea. Butts BB1168 – 5” High
1  Lever Office CL3351 – NZD – CT6 COR 626
1  Door Closer DC6200 COR 689
1  Kick Plate 193S HAG 630
1  Door Stop 241F HAG 626
3  Silencers SR64 IVE - -

Set No. 13
Each to have:
3  Ea. Butts BB1279 (4 Ea. @ Doors > 7’0”)
1  Lever Storeroom CL3357 – NZD – CT6 COR 626
1  Door Closer DC6200 COR 626
1  Door Closer Mounting Bracket 770SPB ZER 689
1  Kick Plate 193S HAG 630
1  Door Stop 236W HAG 626
1  Set Sound Seal 770SP – Head & Jambs ZER 628
1  Auto Door Bottom 369 w/ End Caps ZER 628
1  Threshold 164A ZER 719
<table>
<thead>
<tr>
<th>Set No. 14</th>
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<tbody>
<tr>
<td>3 Ea. Butts BB1279</td>
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<tr>
<td>1 Lever Storeroom CL3357 – NZD – CT6</td>
<td>COR 626</td>
</tr>
<tr>
<td>1 Door Closer DC6210-A11</td>
<td>COR 689</td>
</tr>
<tr>
<td>3 Silencers SR64</td>
<td>IVE - -</td>
</tr>
<tr>
<td>Lift interlock with this door complete with lift system.</td>
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<tr>
<td>1 Lever Office CL3351 – NZD – CT6</td>
<td>COR 626</td>
</tr>
<tr>
<td>2 Door Closers DC6200</td>
<td>COR 689</td>
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<tr>
<td>2 Kick Plates 193S</td>
<td>HAG 630</td>
</tr>
<tr>
<td>2 Door Stops 236W</td>
<td>HAG 626</td>
</tr>
<tr>
<td>2 Silencers SR64</td>
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<tr>
<td>1 Threshold Expansion Joint Flush Threshold By Others</td>
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<td>HAG 626</td>
</tr>
<tr>
<td>1 Lever Office CL3351 – NZD – CT6</td>
<td>COR 626</td>
</tr>
<tr>
<td>2 Door Closers DC6200</td>
<td>COR 689</td>
</tr>
<tr>
<td>2 Door Closer Mounting Bracket 770SPB</td>
<td>ZER 689</td>
</tr>
<tr>
<td>2 Kick Plates 193S</td>
<td>HAG 630</td>
</tr>
<tr>
<td>2 Door Stops 236W</td>
<td>HAG 626</td>
</tr>
<tr>
<td>1 Set Sound Seal 770SP – Head &amp; Jambs</td>
<td>ZER 628</td>
</tr>
<tr>
<td>1 Set Astragals 55AA &amp; 155AA</td>
<td>ZER 628</td>
</tr>
<tr>
<td>2 Auto Door Bottoms 369 w/ End Caps</td>
<td>ZER 628</td>
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<tr>
<td>1 Threshold Expansion Joint Flush Threshold By Others</td>
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<td>COR 626</td>
</tr>
<tr>
<td>1 Door Closer DC6210-A11</td>
<td>COR 689</td>
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<tr>
<td>1 Kick Plate 193S</td>
<td>HAG 630</td>
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<tr>
<td>8 Ea. Butts BB1168</td>
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<tr>
<td>2 Flush Bolts 282D – 1/24&quot; 1/12&quot;</td>
<td>HAG 626</td>
</tr>
<tr>
<td>1 Lever Office CL3351 – NZD – CT6</td>
<td>COR 626</td>
</tr>
<tr>
<td>2 Door Closers DC6210</td>
<td>COR 689</td>
</tr>
<tr>
<td>2 Door Closer Mounting Brackets 770SPB</td>
<td>ZER 689</td>
</tr>
<tr>
<td>2 Kick Plates 193S</td>
<td>HAG 630</td>
</tr>
<tr>
<td>2 Door Stops 236W</td>
<td>HAG 626</td>
</tr>
<tr>
<td>1 Set Sound Seal 770SP – Head &amp; Jambs</td>
<td>ZER 628</td>
</tr>
<tr>
<td>1 Set Astragals 55AA &amp; 155AA</td>
<td>ZER 628</td>
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DESIGN RELEASE PACKAGE 4
ISSUED: 12/01/2017
## DOOR HARDWARE

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<td>2 Auto Door Bottoms 369 w/ End Caps</td>
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<td>1 Threshold Expansion Joint Flush Threshold By Others</td>
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<td>Fire alarm power, relays, wire and wiring by others.</td>
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<td>Set No. 19</td>
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<td>Each to have:</td>
</tr>
<tr>
<td></td>
<td>8 Ea. Butts BB1168</td>
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<tr>
<td></td>
<td>2 Exit Devices 9827L-F-LBR</td>
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<tr>
<td></td>
<td>2 Cylinders Corbin / Russwin as Required CT6</td>
</tr>
<tr>
<td></td>
<td>2 Door Closers DC6200</td>
</tr>
<tr>
<td></td>
<td>2 Kick Plates 193S</td>
</tr>
<tr>
<td></td>
<td>2 Magnetic Holders FM998</td>
</tr>
<tr>
<td></td>
<td>2 Silencers SR64</td>
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<tr>
<td></td>
<td>2 Exit Devices 9875L-F</td>
</tr>
<tr>
<td></td>
<td>1 Lever Classroom CL3355 – NZD – CT6</td>
</tr>
<tr>
<td></td>
<td>1 Door Closers DC6210</td>
</tr>
<tr>
<td></td>
<td>1 Kick Plate 193S</td>
</tr>
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<td></td>
<td>1 Door Stop 236W</td>
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<td>3 Silencers SR64</td>
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<tr>
<td>Each to have:</td>
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<tr>
<td>3 Ea. Butts BB1168 – 5” High</td>
</tr>
<tr>
<td>1 Exit Device 9875L-F</td>
</tr>
<tr>
<td>1 Cylinder Corbin / Russwin as Required CT6</td>
</tr>
<tr>
<td>1 Door Closers DC6210</td>
</tr>
<tr>
<td>1 Kick Plate 193S</td>
</tr>
<tr>
<td>1 Door Stop 236W</td>
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<td>3 Silencers SR64</td>
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<td>Fire alarm power, relays, wire and wiring by others.</td>
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<td>3 Ea. Butts BB1279</td>
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<tr>
<td>1 Lever Classroom CL3355 – NZD – CT6</td>
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<tr>
<td>1 Door Closers DC6210-A11</td>
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<tr>
<td>1 Kick Plate 193S</td>
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<tr>
<td>1 Door Stop 236W</td>
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<th>Set No. 22</th>
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<tbody>
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<tr>
<td>4 Ea. Butts BB1168</td>
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<tr>
<td>1 Exit Device 9875L-F</td>
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<tr>
<td>1 Cylinder Corbin / Russwin as Required CT6</td>
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<tr>
<td>1 Door Closers DC6200</td>
</tr>
<tr>
<td>1 Kick Plate 193S</td>
</tr>
<tr>
<td>1 Door Stop 236W</td>
</tr>
<tr>
<td>3 Silencers SR64</td>
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<tr>
<td>Fire alarm power, relays, wire and wiring by others.</td>
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<table>
<thead>
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<th>Set No. 23</th>
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<tbody>
<tr>
<td>Each to have:</td>
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<td>3 Ea. Butts BB1279</td>
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<tr>
<td>1 Lever Office CL3351 – NZD – CT6</td>
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<tr>
<td>1 Door Closers DC6200</td>
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<tr>
<td>1 Kick Plate 193S</td>
</tr>
<tr>
<td>1 Magnetic Holder FM998</td>
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<tr>
<td>3 Silencers SR64</td>
</tr>
<tr>
<td>Fire alarm power, relays, wire and wiring by others.</td>
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</table>
Set No. 24
Each to have:
3 Ea. Butts BB1279 HAG  652
1 Lever Passage CL3310 – NZD COR  626
1 Door Closer DC6200 COR  689
2 Door Closer Mounting Bracket 770SPB ZER  689
1 Kick Plate 193S HAG  630
1 Door Stop 236W HAG  626
1 Set Sound Seal 770SP – Head & Jambs ZER  628
1 Auto Door Bottom 369 w/ End Caps ZER  628
1 Threshold 164A ZER  719

Set No. 25
Each to have:
4 Ea. Butts BB1168 – (5” High @ Drs. > 3’0”) HAG  652
1 Exit Device 9875L x M52 Trim @ All Doors Except 110B; VON  626
   Door 110B to Have 06 Trim
1 Cylinder Corbin / Russwin as Required CT6 COR  626
1 Door Closer DC6210-A11 COR  689
1 Door Closer Mounting Bracket 770SPB ZER  689
1 Kick Plate 193S HAG  630
1 Set Sound Seal 770SP – Head & Jambs ZER  628
1 Auto Door Bottom 369 w/ End Caps ZER  628
1 Threshold 164A ZER  719

Set No. 26
Each to have:
3 Ea. Butts BB1168 HAG  652
1 Exit Device 9875L VON  626
1 Cylinder Corbin / Russwin as Required CT6 COR  626
1 Door Closer DC6210-A11 COR  689
1 Door Closer Mounting Bracket 770SPB ZER  689
1 Kick Plate 193S HAG  630
1 Set Sound Seal 770SP – Head & Jambs ZER  628
1 Auto Door Bottom 369 w/ End Caps ZER  628
1 Threshold 164A ZER  719

Set No. 27
Each to have:
4 Ea. Butts BB1168 HAG  652
1 Lever Passage ML2010 – 110 Salvador COR  626
1 Door Closer DC6210 COR  689
1 Kick Plate 193S HAG  630
1 Door Stop 236W HAG  626
3 Silencers SR64 IVE  --

Set No. 28
Each to have:
3 Ea. Butts BB1168 (4 Ea. @ Doors > 7’0”) HAG  652
1 Exit Device 9875L VON  626
1 Cylinder Corbin / Russwin as Required CT6 COR  626
1 Door Closer DC6210 COR  689
1 Kick Plate 193S HAG 630
1 Door Stop 236W HAG 626
3 Silencers SR64 IVE - -

Set No. 29
Each to have:
8 Ea. Butts BB1168 HAG 652
2 Exit Devices 9827L x M52 Trim x LBR VON 626
2 Cylinders Corbin / Russwin as Required CT6 COR 626
2 Door Closers DC6210 COR 689
2 Kick Plates 193S HAG 630
2 Door Stops 236W HAG 626
2 Silencers SR64 IVE - -

Set No. 30
Each to have:
8 Ea. Butts BB1168 HAG 652
2 Exit Devices 9827L x M52 Trim x LBR VON 626
2 Exit Device Stk. Mtt. Brackets 770SPB ZER 689
2 Cylinders Corbin / Russwin as Required CT6 COR 626
2 Door Closers DC6210 COR 689
2 Door Closer Mounting Brackets 770SPB ZER 689
2 Kick Plates 193S HAG 630
2 Door Stops 236W HAG 626
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Set Astragals 55AA & 155AA ZER 628
2 Auto Door Bottoms 369 w/ End Caps ZER 628
1 Threshold 164A ZER 719

Set No. 31
Each to have:
4 Ea. Butts BB1279 HAG 652
1 Lever Storeroom CL3357 – NZD – CT6 COR 626
1 Door Closer DC6210 COR 689
1 Door Closer Mounting Bracket 770SPB ZER 689
1 Kick Plate 193S HAG 630
1 Door Stop 236W HAG 626
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Threshold 164A ZER 719

Set No. 32
Each to have:
Acoustical doors complete with hardware except:
1 or 2 Cylinders Corbin / Russwin as Required CT6 COR 626
Where required, expansion joint flush threshold by others.

Set No. 33
Each to have:
3 Ea. Butts BB1168 HAG 652
1 Push Plate 30S – 8” x 16” HAG 630
1 Pull Plate H33G – 4” x 16” HAG 630
1 Door Closer DC6210-A11 COR 689
1 Door Closer Mounting Bracket 770SPB ZER 689
1 Kick Plate 193S HAG 630
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Auto Door Bottom 369 w/ End Caps ZER 628
1 Threshold 164A ZER 719

Set No. 34
Each to have:
4 Ea. Butts BB1168 (5” High @ Doors > 3’0” Width) HAG 652
1 Push Plate 30S – 8” x 16” HAG 630
1 Pull RM2110 – 8” ROC 626
1 Door Closer DC6210-A11 COR 689
1 Door Closer Mounting Bracket 770SPB ZER 689
1 Kick Plate 193S HAG 630
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Auto Door Bottom 369 w/ End Caps ZER 628
1 Threshold 164A ZER 719

Set No. 35
Each to have:
6 Ea. Butts BB1279 HAG 652
2 Flush Bolts 282D HAG 626
1 Dust Proof Strike 280X HAG 626
1 Lever Office CL3351 – NZD – CT6 COR 626
2 Kick Plates 193S HAG 630
2 Door Stops 236W HAG 626
2 Silencers SR64 IVE - -

Set No. 36
Each to have:
3 Ea. Butts BB1279 HAG 652
1 Lever Office CL3351 – NZD – CT6 COR 626
1 Door Stop 236W HAG 626
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Auto Door Bottom 369 w/ End Caps ZER 628
1 Threshold 164A ZER 719

Set No. 37
Each to have:
3 Ea. Butts BB1279 HAG 652
1 Lever Office CL3351 – NZD – CT6 COR 626
1 Door Closer DC6200 COR 689
1 Door Closer Mounting Bracket 770SPB ZER 689
1 Door Stop 236W HAG 626
1 Set Sound Seal 770SP – Head & Jambs ZER 628
1 Auto Door Bottom 369 w/ End Caps ZER 628
1 Threshold 164A ZER 719

Set No. 38
Each to have:
6 Ea. Butts BB1168 (8 Ea. @ Doors > 7’0”) HAG 652
2 Exit Devices 9827L x M52 Trim @ Door 104F x LBR VON 626
06 Trim at all other Doors
2 Exit Device Stk. Mtg. Brackets 770SPB ZER 689
2 Cylinders Corbin / Russwin as Required CT6 COR 626
2 Door Closers DC6210-A12 COR 689
2 Door Closer Mounting Brackets 770SPB ZER 689

DESIGN RELEASE PACKAGE 4
ISSUED: 12/01/2017
<table>
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<tbody>
<tr>
<td>8 Ea. Invisible Hinges</td>
<td>218</td>
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<tr>
<td>4 Push / Pulls</td>
<td>RM4110 Wood, Hickory, 24” BTB</td>
</tr>
<tr>
<td>2 Door Closers</td>
<td>DC6210-A12</td>
</tr>
<tr>
<td>2 Kick Plates</td>
<td>193S</td>
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<tr>
<td>2 Silencers</td>
<td>SR64</td>
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<tr>
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<td>Expansion Joint Flush Threshold By Others</td>
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<td>6 Ea. Butts</td>
<td>BB1168 (8 Ea. @ Doors &gt; 7’0”)</td>
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<tr>
<td>2 Push Plate</td>
<td>30S – 8” x 16”</td>
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<tr>
<td>2 Pull Plates</td>
<td>H33G – 4’ x 16” (Omit @ Door 104G-B)</td>
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<tr>
<td>2 Pulls</td>
<td>RM2110 – 8” @ Door 104G-B</td>
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<tr>
<td>2 Door Closers</td>
<td>DC6210-A12</td>
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<tr>
<td>2 Door Closer Mounting Brackets</td>
<td>770SPB</td>
</tr>
<tr>
<td>2 Kick Plates</td>
<td>193S</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
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<tr>
<td>2 Auto Door Bottoms</td>
<td>369 w/ End Caps</td>
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<td>Expansion Joint Flush Threshold By Others</td>
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<tr>
<td>4 Push / Pulls</td>
<td>RM4110 Wood, Hickory, 24” BTB</td>
</tr>
<tr>
<td>2 Door Closers</td>
<td>DC6210-A12</td>
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<tr>
<td>2 Kick Plates</td>
<td>193S</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
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<tr>
<td>2 Auto Door Bottoms</td>
<td>369 w/ End Caps</td>
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<tr>
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<td>Expansion Joint Flush Threshold By Others</td>
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<td>BB1279 (4 Ea. @ Doors &gt; 7’0”)</td>
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<tr>
<td>1 Lever Office</td>
<td>CL3351 – NZD – CT6</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>236W</td>
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<tr>
<td>3 Silencers</td>
<td>SR64</td>
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<tr>
<td>3 Ea. Butts</td>
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<td>3 Ea. Butts</td>
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</tr>
<tr>
<td>1 Lever Storeroom</td>
<td>CL3357 – NZD – CT6</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>236W</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Auto Door Bottom</td>
<td>369 w/ End Caps</td>
</tr>
<tr>
<td>1 Threshold</td>
<td>164A</td>
</tr>
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<td>Set No. 44</td>
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</tr>
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<td>---------------</td>
</tr>
<tr>
<td>3 Ea. Butts</td>
<td>BB1279</td>
</tr>
<tr>
<td>1 Lever Storeroom</td>
<td>CL3357 – NZD – CT6</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>236W</td>
</tr>
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<td>SR64</td>
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<tr>
<td>1 Lever Privacy</td>
<td>CL3320 – NZD</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>193S</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>236W / 241F</td>
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<td>18 Ea. Butts</td>
<td>BB1168 – 5”</td>
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<tr>
<td>2 Cremone Bolt</td>
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<td>2 Cremone Bolt Handles</td>
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<tr>
<td>1 Cremone Bolt Hasp</td>
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<tr>
<td>1 Padlock</td>
<td>PL5270 w/8000 IC – CT6</td>
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<tr>
<td>2 Door Closers</td>
<td>DC8210-12</td>
</tr>
<tr>
<td>2 Closer Mounting Brackets</td>
<td>770SPB</td>
</tr>
<tr>
<td>2 Kick Plates</td>
<td>193S – 36” High</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – head &amp; Jambs</td>
</tr>
<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
</tr>
<tr>
<td>2 Auto Door Bottoms</td>
<td>369 w/ End Caps</td>
</tr>
<tr>
<td>1 Threshold</td>
<td>Expansion Joint Flush Threshold By Others</td>
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<table>
<thead>
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<th>Set No. 47</th>
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<tbody>
<tr>
<td>3 Ea. Butts</td>
<td>BB1168</td>
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<tr>
<td>1 Push Plate</td>
<td>30S – 8” x 16”</td>
</tr>
<tr>
<td>1 Pull Plate</td>
<td>H33G – 4” x 16”</td>
</tr>
<tr>
<td>1 Door Closer</td>
<td>DC6200</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>193S</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>236W</td>
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<tr>
<td>3 Silencers</td>
<td>SR64</td>
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<th>Set No. 48</th>
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<tr>
<td>3 Ea. Butts</td>
<td>BB1279</td>
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<td>1 Cylinder</td>
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<td>1 Door Closers</td>
<td>DC6210-A11</td>
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<tr>
<td>1 Door Closer Mounting Bracket</td>
<td>770SPB</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>193S</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Auto Door Bottom</td>
<td>369 w/ End Caps</td>
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<td>1 Threshold</td>
<td>164A</td>
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### Set No. 49
Each to have:

<table>
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<th>Item</th>
<th>Model</th>
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<tbody>
<tr>
<td>6 Ea. Butts</td>
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<td>652</td>
</tr>
<tr>
<td>2 Flush Bolts</td>
<td>282D</td>
<td>HAG</td>
<td>626</td>
</tr>
<tr>
<td>1 Lever Office</td>
<td>CL3351</td>
<td>NZD</td>
<td>626</td>
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<tr>
<td>2 Kick Plates</td>
<td>193S</td>
<td>HAG</td>
<td>630</td>
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<td>2 Door Holders</td>
<td>GJ90H</td>
<td>GJ</td>
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<td>2 Silencers</td>
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<td>1 Threshold</td>
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Building electrical power, wire and wiring by others.

### Set No. 50
Each to have:

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<th>Item</th>
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<tr>
<td>6 Ea. Butts</td>
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<tr>
<td>2 Power Transfers</td>
<td>EPT-10</td>
<td>VON</td>
<td>689</td>
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<td>2 Exit Devices</td>
<td>QEL9827L-LBR</td>
<td>VON</td>
<td>626</td>
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<td>2 Exit Dev. Strike Mtg. Brackets</td>
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<td>ZER</td>
<td>689</td>
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<tr>
<td>3 Cylinders</td>
<td>Corbin / Russwin as Required CT6</td>
<td>COR</td>
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<tr>
<td>2 Door Closers</td>
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<td>COR</td>
<td>689</td>
</tr>
<tr>
<td>2 Door Closer Mounting Brackets</td>
<td>770SPB</td>
<td>ZER</td>
<td>689</td>
</tr>
<tr>
<td>2 Kick Plates</td>
<td>193S</td>
<td>HAG</td>
<td>630</td>
</tr>
<tr>
<td>2 Door Stops</td>
<td>236W</td>
<td>HAG</td>
<td>626</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP  – Head &amp; Jambs</td>
<td>ZER</td>
<td>628</td>
</tr>
<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
<td>ZER</td>
<td>628</td>
</tr>
<tr>
<td>2 Auto Door Bottoms</td>
<td>369 w/ End Caps</td>
<td>ZER</td>
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<tr>
<td>1 Key Switch</td>
<td>653-04-L2</td>
<td>SCH</td>
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<tr>
<td>1 Power Supply</td>
<td>PS902 – 9002RS – 900FA</td>
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<td>-</td>
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<td>1 Threshold</td>
<td>Expansion Joint Flush Threshold By Others</td>
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Building electrical power, wire and wiring by others.

### Set No. 51
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<th>Item</th>
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<tr>
<td>6 Ea. Butts</td>
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<tr>
<td>2 Push Plates</td>
<td>30S – 8” x 16”</td>
<td>HAG</td>
<td>630</td>
</tr>
<tr>
<td>2 Pull Plates</td>
<td>H33G – 4” x 16”</td>
<td>HAG</td>
<td>630</td>
</tr>
<tr>
<td>2 Door Closers</td>
<td>DC6200</td>
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<td>2 Door Closer Mounting Bracket</td>
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<td>2 Kick Plates</td>
<td>193S</td>
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<td>2 Door Stops</td>
<td>236W</td>
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<td>1 Set Sound Seal</td>
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<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
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<td>2 Auto Door Bottoms</td>
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### Set No. 52
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</tr>
<tr>
<td>1 Door Closer</td>
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<td>689</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>193S</td>
<td>HAG</td>
<td>630</td>
</tr>
<tr>
<td>1 Door Stop</td>
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</tr>
<tr>
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<td>Set No.</td>
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<td>Continuous Hinge: 780-112-HD HAG 628</td>
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<td>Door Closer: DC6200 COR 689</td>
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<td></td>
<td>Kick Plate: 193S HAG 630</td>
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<td>Door Stop: 236W HAG 626</td>
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<td>Silencers: SR64 IVE - -</td>
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<td>6 Ea. Butts: BB1168 HAG 652</td>
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<td>2 Exit Devices: 9827L - LBR VON 626</td>
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<td>2 Door Closers: DC6210 COR 689</td>
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<td>2 Kick Plates: 193S HAG 630</td>
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<td>2 Door Stops: 236W HAG 626</td>
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<td>Threshold: Expansion Joint Flush Threshold By Others</td>
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<td>2 Push / Pull Bars: 159D - BTB HAG 630</td>
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<td>2 Door Closers: DC6210 COR 689</td>
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<td>2 Kick Plates: 193S HAG 630</td>
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<td>2 Door Stops: 236W HAG 626</td>
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<td>2 Silencers: SR64 IVE - -</td>
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<td>56</td>
<td>3 Ea. Butts: BB1168 HAG 652</td>
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<td>Lever Classroom: CL3355 – NZD – CT6 COR 626</td>
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<td>Door Closer: DC6200 COR 689</td>
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<td></td>
<td>Kick Plate: 193S HAG 630</td>
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<td>Door Stop: 236W HAG 626</td>
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<td>8 Ea. Butts: BB1168 HAG 652</td>
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<td>2 Cylinders: Corbin / Russwin as Required CT6</td>
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<td>2 Door Closers: DC6200 COR 689</td>
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<td>2 Kick Plates: 193S HAG 630</td>
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<td>2 Door Stops &amp; Holders: 495 IVE 626</td>
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<td>2 Silencers: SR64 IVE - -</td>
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### Set No. 58
Each to have:

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<tr>
<td>3 Ea. Butts</td>
<td>BB1168 (4 Ea. @ Doors &gt; 7’0”)</td>
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<td>1 Push Plate</td>
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<td>1 Pull</td>
<td>RM2110-8” @ Doors 102A-C, 102B-C, 207B-B, 207A-B, 207A-C</td>
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<td>1 Pull Plate</td>
<td>H33G – 4” x 16” (Omit @ Doors 102A-C, 102B-C, 207B-B, 207A-B, 207A-C)</td>
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<tr>
<td>1 Door Closer</td>
<td>DC6200</td>
</tr>
<tr>
<td>1 Door Closer Mounting Bracket</td>
<td>770SPB</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>193S</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>236W</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Auto Door Bottom</td>
<td>369 w/ End Caps</td>
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<tr>
<td>1 Threshold</td>
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### Set No. 59
Each to have:

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<tr>
<td>4 Ea. Butts</td>
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<td>1 Lever Office</td>
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<td>1 Door Closer</td>
<td>DC6200</td>
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<td>1 Kick Plate</td>
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<td>1 Door Stop</td>
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### Set No. 60
Each to have:

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<td>6 Ea. Butts</td>
<td>BB1279</td>
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<tr>
<td>2 Flush Bolts</td>
<td>282D</td>
</tr>
<tr>
<td>1 Lever Storeroom</td>
<td>CL3357 – NZD – CT6</td>
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<td>2 Door Closers</td>
<td>DC6200</td>
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<tr>
<td>2 Door Closer Mounting Bracket</td>
<td>770SPB</td>
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<td>2 Kick Plates</td>
<td>193S</td>
</tr>
<tr>
<td>2 Door Stops</td>
<td>236W</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
</tr>
<tr>
<td>2 Auto Door Bottoms</td>
<td>369 w/ End Caps</td>
</tr>
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<td>1 Threshold</td>
<td>164A</td>
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### Set No. 61
Each to have:

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<td>BB1168</td>
</tr>
<tr>
<td>2 Push Plates</td>
<td>30S – 8” x 16”</td>
</tr>
<tr>
<td>2 Pull Plates</td>
<td>H33G – 4” x 16”</td>
</tr>
<tr>
<td>2 Door Closers</td>
<td>DC6200</td>
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<tr>
<td>2 Door Closer Mounting Bracket</td>
<td>770SPB</td>
</tr>
<tr>
<td>2 Kick Plates</td>
<td>193S</td>
</tr>
<tr>
<td>2 Door Stops</td>
<td>236W</td>
</tr>
<tr>
<td>1 Set Sound Seal</td>
<td>770SP – Head &amp; Jambs</td>
</tr>
<tr>
<td>1 Set Astragals</td>
<td>55AA &amp; 155AA</td>
</tr>
<tr>
<td>2 Auto Door Bottoms</td>
<td>369 w/ End Caps</td>
</tr>
<tr>
<td>1 Threshold</td>
<td>164A</td>
</tr>
</tbody>
</table>
END OF SECTION 08 71 00
PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Benches.
   B. Bollards.
   C. Waste receptacles.
   D. Bicycle Racks

1.02 RELATED REQUIREMENTS
   A. Section 03.30.00 - Cast-in-Place Concrete: Bollard infill and underground encasement.
   B. Section 05.50.00 - Metal Fabrications: Anchors to attach site furnishings to mounting surfaces.

1.03 REFERENCE STANDARDS
   C. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2013.

1.04 SUBMITTALS
   A. See Section 01.30.00 - Administrative Requirements, for submittal procedures.
   B. Product Data: Provide manufacturer’s specifications and descriptive literature, installation instructions, and maintenance information.
   C. Shop Drawings: Indicate plans for each unit or groups of units, elevations with model number, overall dimensions; construction, and anchorage details.

1.05 WARRANTY
   A. Provide manufacturer’s warranty against defects in materials or workmanship for ductile iron castings for a period of 10 years from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 METAL FURNISHINGS
   A. Metal Furnishings, General:
      1. Cast iron components: Ductile iron castings complying with ASTM A536; cleaned, treated, and powder-coated.
      2. Steel components: Plates, bars, and shapes complying with ASTM A36/A36M and tubing complying with ASTM A500/A500M; cleaned, treated, and powder-coated.
   B. Benches: Metal frame and seat section with back and armrests.
      1. Frame: Steel.
      2. Seat: Steel slat.
      4. Products:
b. Other acceptable manufacturers:
   1) Victor Stanley
   2) Dumor

C. Bike Rack: Metal frame.
1. Basis of Design: Dero Custom U Rack to match existing campus racks (see image for reference). Primary rack frame: 1.5" schedule 40 steel pipe. Nominal 24” wide by 32” tall. Surface mount installation with 2.5” x 6” x .25” feet at each end with 4 anchors. Powder coated black. Provide (2) racks spaced 24” apart at each location indicated on site plan.
2. Reference Image:

3. Other acceptable manufacturers:
   a. Madrax, Cyclesafe, Wagner Companies

D. Waste Receptacles: Steel frame with steel slats and removable lid.
2. Shape: Round. Flat top, with latch.
3. Products:
   b. Other acceptable manufacturers:
      1) Victory Stanley
      2) DuMor

2.02 BOLLARDS
A. Steel Pipe Bollards: Hollow steel pipe with plain shaft.
1. Materials:
c. Color: As selected by Architect from manufacturer’s standard range.

2. Mounting: In-ground.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that mounting surfaces, preinstalled anchor bolts, or other mounting devices are properly installed; and ready to receive site furnishing items.

B. See Section 05.50.00 for anchors to attach site furnishings to mounting surfaces.

C. Do not begin installation until unacceptable conditions are corrected.

3.02 INSTALLATION

A. Install site furnishings in accordance with approved shop drawings, and manufacturer’s installation instructions.

B. See Section 03.30.00 for bollard infill and underground encasement.

C. Provide level mounting surfaces for site furnishing items.

END OF SECTION
ETSU FINE ARTS CLASSROOM BUILDING

TENNESSEE BOARD OF REGENTS
1320 W STATE OF FRANKLIN ROAD
JOHNSON CITY, TENNESSEE

ARCHITECTS
McCarty Holsaple McCarty Architects, Inc.
550 W. MAIN STREET, SUITE 300
KNOXVILLE, TENNESSEE 37902
(865) 544-2000
www.mhminc.com

CIVIL AND STRUCTURAL
Beeson, Lusk, and Street, Inc.
207 EAST MAIN STREET, SUITE 3C
JOHNSON CITY, TENNESSEE 37604
(423) 928-1175
http://www.blsarch.com/

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Facility Systems Consultants, Inc.
713 SOUTH CENTRAL STREET, SUITE 101
KNOXVILLE, TENNESSEE 37902
(865) 246-0164
http://www.facilitysystems.org/

ELECTRICAL DATA AND COMMUNICATIONS AND SECURITY
Facility Systems Consultants, Inc.
713 SOUTH CENTRAL STREET, SUITE 101
KNOXVILLE, TENNESSEE 37902
(865) 246-0164
http://www.facilitysystems.org/

LANDSCAPE
The Penland Studio
111 NORTH CENTRAL STREET, SUITE 100
KNOXVILLE, TENNESSEE 37902
(865) 335-3584
http://www.penlandstudio.com

THEATER DESIGN
Theatre Consultants Collaborative, Inc.
6325 Old NC 86
CHAPEL HILL, NC 27516
(919) 929-7443
http://www.theatrecc.com

ACOUSTIC AND AUDIO VISUAL
Acoustic Distinctions, Inc.
145 Huguenot Street
NEW ROCHELLE, NEW YORK 10801
(914) 712-1300
http://www.acousticdistinctions.com/

DESIGN RELEASE PACKAGE 4
12/01/2017
- REFLECTED CEILING PLANS, ENLARGED PLANS, INTERIOR ELEVATIONS, & FINISHES
- MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, & TELECOM
- AUDIO VISUAL & THEATRICAL

DESIGN RELEASE PACKAGE 3
10/16/2017
- EXTERIOR BUILDING SHELL, INTERIOR PARTITIONS, LIFE SAFETY, & VERTICAL CIRCULATION
- WINDOWS, DOORS, & HARDWARE

DRP 3 - ADDENDUM 1 11/17/2017
DRP 3 - ADDENDUM 2 12/01/2017
DRP 3 - ADDENDUM 3 12/21/2017
DRP 4 - ADDENDUM 1 12/21/2017
DRP 4 - ADDENDUM 2 01/12/2018

CONSTRUCTION DOCUMENTS

PAINTED STEEL CATWALK, WITH DRY FALL COLD FORMED STL FRAMING. REFER TO PAINTED EXPOSED STRUCTURE, DECK AND DUCTWORK - REFER TO FINISH SCHEDULE

1" MTL CHANNELS - FRAMING REQUIREMENTS. PAINT PER LIGHT FIXTURE BEYOND FROM STRUCTURAL DECK

SEE STRUCT CATWALK, PT BLACK - AUD. CATWALK LOW

SPECIFICATIONS FOR CEILING CLOUD 32'-0"

ALUM TRIM BY WD FINISH SCHEDULE

WHERE APPLICABLE

WO VENEER WALL ALIGN EDGES OF COVERING WHERE GYP BD SOFFIT W/ OUTSIDE EDGES OF CATWALK (+/- 3/4"

(2) LAYER 5/8" GYP BD CHANNEL, TYP

EL. 23' - 0"

& INTIOR TURN UP BOTH LAYERS ALONG EDGES TO FLUSH +/- 3'-4" VIF W/ TOP OF STUD FRAME

GALV STL STUD FRAME @ 16" OC MAX

SECTION THROUGH AUDITORIUM CLOUDS

SECTION THROUGH RECITAL CLOUDS

SCALE: 1" = 1'-0"

SCALE GUIDE:

SEQ. 1'-0" 1'-0" 8'-0"

1 1/2" = 1'-0"

SCALE:

TIME / DATE:

MCCARTY

544-0402

350 W. MAIN STREET, SUITE 300

1/2" PLYWOOD OVER 2" MTL GRATE - SEE STRUCT

1/2" PLYWOOD OVER 2" CATWALK, PT BLACK - SEE STRUCT

FLY GALLERY 34'-0"

8"

4'-0" - SEE STRUCT 4'-0" - SEE STRUCT

8" 5'-0" - SEE STRUCT 5'-0" - SEE STRUCT

SEAL: ACTIVE DESIGN PHASE 3.9 4 7.1

CONSTRUCTION BIDDING PHASE

SCHENATIC DESIGN

REDI-CHECK

DESIGN DEVELOPMENT

AS-BUILT RECORDS

NOT SCALE DRAWINGS, USE GIVEN DIMENSIONS ONLY.

IF NOT SHOWN, VERIFY CORRECT DIMENSION WITH ARCHITECT.

PRJ MGR: CODES OFFICIAL REVIEW

SP / PC:

RCP DETAILS

PRJ MGR:

SCALE:

SECTION THROUGH BACKSTAGE RESTROOM SOFFIT

SECTION THROUGH MCM CANOPY @ LIGHT FIXTURE

SECTION THROUGH LOBBY CEILING EDGE

SECTION THROUGH RECESSED LIGHTING FIXTURE W/ MFR PROVIDED HANGER BRACKET BRACED AT BOTH ENDS SUSP ACT CEILING - SEE RCP SUPPORT BLOCKING LOCATION W/ RCP RECESSED DOWN LOCATION W/ RCP MCM PANEL provided hangers bracket braced at both ends suspended act ceiling - see rcp support blocking location with rcp recessed down location with rcp mcm panel

INSTRUMENTAL REHEARSAL CLOUD SECTION DETAIL

INSTRUMENTAL REHEARSAL CLOUD SECTION DETAIL

1 1/2" = 1'-0"

1 1/2" = 1'-0"

2

A241

A241

A241

A241

A241

A241

A241

A241

A241

A241
LIGHT FIXTURE LAYOUTS - COORDINATE THE IN CENTER OF 2 1/2" REVEAL WITH LATERAL CURTAIN WALL AT NEAREST 1" WITH THE TYPE II LIGHT FIXTURES AT ALL WOOD VENEERED LINEAR LIGHT CONDITIONS. SEE DETAILS 12 & 13.
IN THE OCCUPIED MODE, THE OA DAMPER SHALL OPEN. AFTER THE OA DAMPER IS OPEN, THE SUPPLY AND RETURN FANS SHALL START AND TRACK THE OA DAMPER BASED ON UPPER AND LOWER LIMITS AND SET BASED ON TESTING AND BALANCING FOR 0.03 IN. WG. BLDG. PRESSURE.

WHEN THE LOW TEMPERATURE THERMOSTAT (FREEZE-STAT) SENSES AIR TEMPERATURE LESS THAN 38° F (ADJ.), ENTER THE FOLLOWING STAGE:

A.) THE REHEAT CONTROL VALVE SHALL BE MODULATED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. ONCE THE HUMIDITY RETURNS TO NORMAL LEVEL, THE REHEAT CONTROL VALVE SHALL BE MODULATED TO KEEP THE SPACE TEMPERATURE AT THE SETPOINT.

B.) WHEN THE HUMIDITY RISES ABOVE THE DEHUMIDIFICATION SETPOINT OF 55% RH (ADJUSTABLE), THE UNIT SHALL BE INDEXED TO THE DEHUMIDIFICATION MODE.
When the OA Enthalpy is less than the Return Air Enthalpy, the Economizer Controls shall be activated. The CW coil valve shall close and the Discharge Air Temperature sensor shall modulate the OA damper, return damper and Relief Air Damper in sequence to maintain the Setpoint. The CW coil valve shall modulate open if setpoint cannot be maintained. The Economizer Mixed Air Low Limit Thermostat shall override the Economizer Controls and return the Return Air Temperature (RAT) shall be modulated to maintain a Cooling Coil Leaving Air Temperature of 55°F (Adjustable). The Reheating Control Valve shall be modulated as required to maintain space temperature setpoint. Once the humidity returns to normal levels, Dehumidification Mode will be disabled and the unit returns to normal operation.

The Discharge Static Pressure High Limit shall be monitored and if exceeded, the system shall shut down to prevent damage to the equipment. All Air Handling Units - Alarms

1) Leaving Heating Coil Water Temp > Mixed Air Temp. When Hot Water Valve is closed more than 10 Min. (Adj.)
2) Failure to Maintain OA Flow per Setpoint during Occupied Mode.
3) Smoke Detection.
4) Failure to Maintain OA Flow per Setpoint during Unoccupied Mode. The safety system will automatically shut down the equipment.

NOTE: PROVIDE A WIRELESS TEMPERATURE AND HUMIDITY SENSOR EQUAL TO JCI PART # WR2-THB000-0. RELEASE PACKAGE 4

CONTRACTOR INFORMATION

THE DISCHARGE AIR TEMPERATURE SENSOR SHALL MODULATE THE CHILLED WATER COIL VALVE (N.O.) TO MAINTAIN SETPOINT @ 55°F (ADJ.).

AIR FLOW MEASURING STATIONS (IN FAN INLETS) SHALL MEASURE THE SUPPLY AND RETURN AIR CFM. THE RETURN FAN SHALL TRACK THE SUPPLY FAN TO MAINTAIN AIR FLOW DIFFERENTIAL SET POINT (ADJ.) BETWEEN THE SUPPLY AIR AND RETURN AIR EQUAL TO THE MINIMUM O.A. SCHEDULED ON THE DRAWINGS. AIR FLOW MEASURING STATIONS SHALL BE MODULATED TO MAINTAIN ITS COOLING MAXIMUM SUPPLY AIRFLOW. AS THE MOST DEMANDING ZONE TEMPERATURE BECOMES SATISFIED, THE CHILLED WATER VALVE SHALL MODULATE CLOSED, THEN THE SUPPLY AIR FAN SHALL MODULATE MAXIMUM HEATING CFM. WHEN THE LOW TEMPERATURE THERMOSTAT (FREEZESTAT) SENSES AIR TEMPERATURE LESS THAN 38°F (ADJ.) ENTERING THE COOLING COIL, THE FOLLOWING SHALL OCCUR:

CONTROL VALVE, START THE CHILLED WATER PUMP SCWP TO MOVE WATER THROUGH COIL, FULLY OPEN THE PRE-HEAT CONTROL VALVE AND START THE HOT WATER PUMP TO MOVE WATER THROUGH THE COIL.
WHEN THE BUILDING OCCUPANCY STATUS CHANGES TO "OCCUPIED" (NOTE: BUILDING OCCUPANCY STATUS SHALL BE USER CONFIGURABLE IN A CALENDAR, DAY-OF-WEEK, TIME OF DAY USER INTERFACE VIA THE BAS), THE REHEAT CONTROL VALVE SHALL BE MODULATED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT.

WHEN THE HUMIDITY RISES ABOVE THE DEHUMIDIFICATION SETPOINT OF 45% RH (ADJUSTABLE), THE UNIT SHALL BE INDEXED TO THE DEHUMIDIFICATION MODE.

THE REHEAT CONTROL VALVE SHALL BE MODULATED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT.
MCCARTY

HOLSAPLE

DESIGNERS

550 W. MAIN STREET, SUITE 300
KNOXVILLE, TENNESSEE  37902

FROM AHU-14

CONTACT:
DOUG MCCARTY
EMAIL: DMcCarty@mhminc.com
TELEPHONE: (865) 544-2000
FACSIMILE: (865) 544-0402

SPACE TEMP AI

PROJECT INFORMATION

T SPACE TEMP SENSOR

CONTRACT:

RETURN

HOT WATER CONTROL VALVE AO

SHOWN ON PLANS

TERMINAL DAMPER AO

RELEASE PACKAGE 4

VAV SEQUENCE OF OPERATION:

1320 W STATE OF FRANKLIN ROAD

LEAVING AIR TEMPERATURE AI

THE SPACE THERMOSTAT SHALL MODULATE THE VAV DAMPER (FROM MAXIMUM TO MINIMUM POSITION AS INDICATED ON JOHNSON CITY , TENNESSEE   37614

ACTIVE DESIGN PHASE

/box2

/box2

/box2

/box2

MONITOR SUPPLY AIR FLOW CFM, LEAVING AIR TEMPERATURE, DAMPER CONTROL, SPACE TEMPERATURE.

CONSTRUCTION DOCUMENTS

CONSTRUCTION DOCUMENTS

AS-BUILT RECORDS

CHLILER PRIMARY PUMP SHALL START. UPON PROVEN OPERATION OF THE LEAD SECONDARY CW PUMP FLOW , THE LEAD PRIMARY PUMP SHALL START. LOSS OF CONFIRMATION FROM PRIMARY PUMP FLOW SHALL SHUT THE CHILLER DOWN.

EACH CHILLER CAPACITY SHALL BE MODULATED UNDER ITS OWN CONTROLS AND SAFETIES TO MAINTAIN LEAVING WATER TEMPERATURE SETPOINT OF 44° F (ADJ.). LAG CHILLER AND RESPECTIVE PRIMARY PUMP SHALL BE AUTOMATICALLY STARTED WHEN LEAD CHILLER CANNOT MAINTAIN LOAD. LAG CHILLER SHALL START WHEN DECOUPLER PIPE BRIDGE INDICATES DEFICIENT FLOW. DEFICIENT FLOW UPON FAILURE OF LEAD CHILLER, THE LAG OR STANDBY CHILLER SHALL START AND AN ALARM SIGNAL SHALL BE GENERATED. THE LEAD CHILLER SELECTION SHALL BE BASED ON RUN TIME.

THE LEAD PUMP AND LAG (STANDBY) SECONDARY SELECTION SHALL BE BASED ON RUN TIME. THE CW DP TRANSMITTER SHALL VARY THE SPEED OF THE RESPECTIVE PUMP TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT.

UPON FAILURE OF LEAD SECONDARY CW PUMP, THE LAG OR STANDBY SECONDARY CW PUMP SHALL START AND AN ALARM SHALL BE GENERATED. THE LEAD SECONDARY CW PUMP SELECTION SHALL BE BASED ON RUN TIME.

THE LEAD PUMP AND LAG (STANDBY) SECONDARY SELECTION SHALL BE BASED ON RUN TIME. THE CW DP TRANSMITTER SHALL VARY THE SPEED OF THE RESPECTIVE PUMP TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT.

THE CHILLER PLANT SHALL BE ENABLED BY THE DDC SYSTEM AND THE LEAD SECONDARY CW PUMP SHALL START. UPON PROVEN OPERATION OF THE LEAD SECONDARY CW PUMP FLOW, THE LEAD SECONDARY CW PUMP SHALL START. UPON FAILURE OF LEAD SECONDARY CW PUMP FLOW, THE LAG OR STANDBY SECONDARY CW PUMP SHALL START AND AN ALARM SIGNAL SHALL BE GENERATED. THE LEAD SECONDARY CW PUMP SELECTION SHALL BE BASED ON RUN TIME.

CHILLED WATER SEQUENCE OF OPERATION:

THE LEAD PUMP AND LAG (STANDBY) SECONDARY SELECTION SHALL BE BASED ON RUN TIME. THE CW DP TRANSMITTER SHALL VARY THE SPEED OF THE RESPECTIVE PUMP TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT.

UPON FAILURE OF LEAD SECONDARY CW PUMP, THE LAG OR STANDBY SECONDARY CW PUMP SHALL START AND AN ALARM SIGNAL SHALL BE GENERATED. THE LEAD SECONDARY CW PUMP SELECTION SHALL BE BASED ON RUN TIME.
SMOKE VENT EQUAL TO BABCOCK-DAVIS, MODEL BSVXG66X144. PROVIDE WITH ROOF CURB AND COUNTER FLASHING, THERMAL RELEASE WITH FUSIBLE LINK, AND MANUAL WINCH CLOSER. (TYP OF 4)

AHU 3

M119

VFD

INSULATED PIPING VESTIBULE (TYP AHU-2, 3, 4, 5). RELIEF AIR

1 1/2" CHWS/R UP FROM BELOW TO SERVE AHU-5

3" CHWS/R UP FROM BELOW TO SERVE AHU-2

2" CHWS/R UP FROM BELOW TO SERVE AHU-3

3/4" HWS/R FROM BELOW TO SERVE AHU-3

3" HWS/R & 4" CHWS/R UP FROM BELOW TO SERVE AHU-4

2 1/2" HWS/R & FROM BELOW TO SERVE AHU-4

OUTSIDE AIR INTAKE

HEAT TRACE ALL PIPING IN PIPING VESTIBULE (TYP AHU-2, 3, 4, 5)
STAGE AND WINGS

AREA ABOVE MAINSTAGE GRID IRON SHALL BE CLASSIFIED AS GROUP II HAZARD W/ MOST REMOTE AREA OF 1500 SQ.FT. & DESIGN DENSITY OF HEADS .20 GPM/SQ.FT.

CONCEALED PENDANT HEADS THIS ROOM SHALL BE MOUNTED FLUSH WITH BOTTOM OF CLOUDS (TYP.)

WALL TYPE LEGEND:
1HR. FIRE BARRIER (IBC 707)
2HR. FIRE RESISTANCE RATED FIRE BARRIER (IBC 707) & STAGE / PROSCENIUM WALL (IBC 410.3.4) & (NFPA 12.4.5.6)
SMOKE BARRIER (NFPA 8.5)
SMOKE PARTITION (IBC 710)
1 HR. FIRE RESISTANCE RATED EXTERIOR WALL (IBC 705)

KEY PLAN:
3

DRAWING TITLE:

CHECKED BY:

DRAWN BY:

PA / PC:

PRJ MGR:

DWG ISSUED:

DRAWING INFORMATION

PROJECT INFORMATION

INTERNET:

FACSIMILE:

TELEPHONE:

CONTACT:

KNOXVILLE, TENNESSEE  37902

mhminc.com

(865) 544-0402

(865) 544-2000

REVISION INFORMATION

Do NOT scale drawings, use given dimensions only.

If not shown, verify correct dimension with ARCHITECT.

Contractor shall check and verify all dimensions and conditions at job site.

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ETSU FINE ARTS
CLASSROOM BUILDING DESIGN RELEASE PACKAGE #

1/12/2018 5:05:07 PM

UPPER LEVEL FIRE PROTECTION - QUADRANT 1

FP115
"AREA 2" - LIGHT HAZARD WITH MOST REMOTE 1500 SQ.FT. & DESIGN DENSITY OF .10 GPM/SQ.FT.

PENDANT HEADS THIS ROOM SHALL BE MOUNTED FLUSH WITH BOTTOM OF CLOUDS (TYP.)

4" FIRE MAIN FROM BELOW

"AREA 1" - LIGHT HAZARD WITH MOST REMOTE 1500 SQ.FT. & DESIGN DENSITY OF .10 GPM/SQ.FT.

PENDANT HEADS THIS ROOM SHALL BE MOUNTED FLUSH WITH BOTTOM OF CLOUDS (TYP.)

4" FIRE MAIN FROM BELOW

WALL TYPE LEGEND:
- 1HR. FIRE BARRIER (IBC 707)
- 2HR. FIRE RESISTANCE RATED FIRE BARRIER (IBC 707) & STAGE / PROSCENIUM WALL (IBC 410.3.4) & (NFPA 12.4.5.6)
- SMOKE BARRIER (NFPA 8.5)
- SMOKE PARTITION (IBC 710)
- 1 HR. FIRE RESISTANCE RATED EXTERIOR WALL (IBC 705)

See code summary for additional information.

Key Plan:

Checked by:

Drawn by:

PA / PC:

PRJ MGR:

DWG ISSUED:

Drawn Information:

Project Information:

INTERNET:

FACSIMILE:

TELEPHONE:

CONTACT:

KNOXVILLE, TENNESSEE  37902

mhminc.com

(865) 544-0402

(865) 544-2000

1/8" = 1'-0"

Contractor shall check and verify all dimensions and conditions at job site.

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ETSU FINE ARTS

CLASSROOM

BUILDING DESIGN RELEASE PACKAGE 4

1/2/2018 5:05:13 PM

No. Date Description

1 01.12.2018 DRP 4 - Addendum 2

Active Design Phase

Construction Documents

Schematic Design

Design Development

Redi-check

Construction Documents

As-Built Records

Seal:

Architects & Interior Designers

LW

BR

SGP

JMK
### Construction Documents

#### Plumbing Legend

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
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<tbody>
<tr>
<td>EWC1</td>
<td>CI CAST IRON</td>
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<tr>
<td></td>
<td>1 1/2&quot; CAST BRASS P-TRAP W/ C.O. PLUG</td>
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<tr>
<td></td>
<td>BALL VALVE</td>
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<tr>
<td></td>
<td>CONDENSATE HOT WATER - 140°F</td>
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<tr>
<td>LVRCGRNTL8WSK</td>
<td>FLOOR MOUNTED SUPPORT</td>
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<td>LSAMPLE</td>
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<td>SANITARY SEWER LINE</td>
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<td>ZURN</td>
<td>CONNECTION SIZES</td>
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<td></td>
<td>WASTE 1 1/2&quot;, VENT 1 1/2&quot;, CW 1/2&quot;</td>
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<td>FCO CLEANOUT ZURN ZN-1400</td>
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<td>INTERIOR FINISH FLOOR</td>
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<td>(SEE NOTES)</td>
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<td>Z8808-LR-LK</td>
<td>CHK. V CHECK VALVE</td>
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<td>NATURAL GAS</td>
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<td>LIQUID PROPANE (LP)</td>
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<td>GW GREASY WASTE HB HOSE BIB/WALL HYDRANT</td>
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<td>ARCITECTS DESIGNERS</td>
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<td>RAIN WATER PIPING</td>
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<td>ST</td>
<td>PRESSURE REGULATING VALVE</td>
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<td>NITROUS OXIDE</td>
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<td></td>
<td>15035 &quot;AQUASENSE&quot; DECK-MOUNTED FAUCET - BATTERY POWERED F AUCET, CHROME, .5 GPM FLOW</td>
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<tr>
<td>P1</td>
<td>FIXTURE NUMBER (SEE SCHEDULE)</td>
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<tr>
<td>Z6918-XL</td>
<td>SS SANITARY SEWER</td>
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<td>Z8743-PC Z8700-PC</td>
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<td>&quot;AQUASENSE&quot; EXPOSED URINAL FLUSH VALVE, BATTERY POWERED, 1.0 GPM</td>
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<td>POINT OF CONNECTION</td>
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<td>VT VENT LINE</td>
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<td>KS1</td>
<td>1&quot; CONNECTION SIZE</td>
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<td>WASTE 2&quot;, VENT 1 1/2&quot;, H&amp;CW 1/2&quot;</td>
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<td></td>
<td>&quot;WASHBROOK&quot; FLOWISE, VIT. CHINA TOP SPUD WASHOUT URINAL, 1.0 GPM</td>
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<td>SENSOR FLUSH VALVE, TRAP PRIMER, OPEN FRONT SEAT WI TH SELF SUSTAINING STAINLESS CHECK HINGES, CLOSET BOLTS AND WAX RING</td>
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<td>&quot;AQUASPEC&quot; WIDESPREAD CHROME GOOSENECK FAUCET W/ BL ADE HANDLES</td>
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<td>GRID STRAINER W/ 2&quot; TAILPIECE 2&quot; CAST BRASS P-TRAP W/ C.O. PLUG</td>
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<td>ELKAY Z-8743-1</td>
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<td>&quot;TEMP GUARD III&quot; SHOWER UNIT, CHROME PLATED, W/ PRESSURE COMPENSATING</td>
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<td>WATER SAVER SHOWER HEAD, 1.5 GPM</td>
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<td>PROVIDE W/ FULL SIZE P-TRAP</td>
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<tr>
<td>RD1</td>
<td>ROOF DRAIN</td>
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<td>ZURN ZA100-EADP 15&quot; DIAMETER ROOF DRAIN W/ LOW SILHOUETTE DOME - ALUMINUM DOME, &quot;TOP-SET&quot; ROOF DECK</td>
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### Notes:
- UNLESS INDICATED OTHERWISE ON DRAWINGS, INTERNAL WATER PIPING IS TO BE ROUTED IN CEILING SPACES, ATTICS, CRAWL SPACES AND IN AND BETWEEN WALL STUDS, ETC. (AS AND WHERE APPLICABLE) AND ON SCALE DRAWINGS, USE GIVEN DIMENSIONS ONLY.
- If not shown, verify correct dimension with ARCHITECT.
- PROVIDE VACUUM BREAKERS WHERE ANY THREADED CONNECTIONS ARE PRESENT ON WATER SUPPLY LINE.
- WATER HAMMER ARRESTORS TO BE INSTALLED ON EQUIPMENT PER MANUFACTURER RECOMMENDATIONS.
- GAS PIPING SHALL BE BLACK PIPE AND INSTALLED IN ACCORDANCE WITH GAS CODE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CONFIRMING APPLIANCE MANUFACTURER’S RECOMMENDED GAS PRESSURES.
CONSTRUCTION DOCUMENTS

CAST IRON GRATE ZURN FLOOR DRAIN MODEL

CLEANOUT

#ZN415-S SEE PLUMBING

MAX. TRENCH WIDTH

FLOOR FIXTURE SCHEDULE

2 12"
6" TO 15" 8"
18" TO 21" 10"

WILKINS 975XLAG 2"
24" TO 30"

NOTE:

PIPE O.D. A

33" TO 42" 15"
48" & LARGER 18"

WILKINS 500 2" PRV

VALVE HEAD

SLOPE FLOOR 1/8"

ELL.

HOLESAMPLE PER FOOT MINIMUM

APPROVED BACKFILL COMPACTED IN PIPE DIA. "A"

VALVE BODY.

ON CONCRETE OTHERWISE SPECIFIED PLACEMENT PLAN, OF LINE

2" 2"

H

FLOOR DRAIN DETAIL

2" 2"

PROSET TRAP GUARD INSERT TG-33

WORK SPEC.

3/4 TUBE LENGTH AS REQUIRED

LENGTH OF BARREL (EXCEPT PRESSURE PIPE)

ORDER LENGTH

COLD WATER SUPPLY

NO SCALE

WHERE INDICATED ON PLUMBING PLAN.

NO SCALE

SEE PLANS FOR MASONRY WALL DIMENSIONS.

90°

END OF THE ELL.

OILTECTOR

12" MIN.

OIL-MINDER

3" "P" TRAP

FLOOR DRAIN DETAIL - COMBINATION MAIN ROOF AND OVERFLOW DRAINS

PACK FULL DEPTH WITH FIBERGLASS OR MINERAL FIBER BATT

CHECK VALVE

MINIMUM PIT SIZE:

24" X 24" X 24"

PUMP "ON" FLOAT

MINIMUM PIT SIZE:

WATER HEATER AND GALV. DRIP PAN ON ALL SIDES

POWER IN 120V 120V

STANDARD ELEVATOR OIL-MINDER SYSTEM DIAGRAM

1 PSF MASS-LOADED VINYL OR APPROVED EQUAL

PIPE WRAPPED WITH MASS LOADED VINYL

NO SCALE

DRAWING INFORMATION

DRAWING NO:

P002

TIME / DATE:

1/12/2018 5:05:16 PM
6" RAINLEADER - SEE CIVIL FOR CONT.

STORAGE MUSICAL INSTRUMENTS

Do not scale drawings, use given dimensions only.
If not shown, verify correct dimension with ARCHITECT.

Contractor shall check and verify all dimensions and conditions at job site.

© McCarty Holsaple McCarty, Inc.
RANLEADER SHALL BE ROUTED TIGHT TO BOTTOM OF STRUCTURE.
Do NOT scale drawings, use given dimensions only.
If not shown, verify correct dimension with ARCHITECT.
Contractor shall check and verify all dimensions and conditions at job site.

SCALE: 1/8" = 1'-0"
RAINLEADER SHALL BE ROUTED TIGHT TO BOTTOM OF STRUCTURE

4" RAINLEADER DOWN

6" RAINLEADER DOWN

8" RAINLEADER DOWN

SCALE: 1/12" = 1'-0"
### Electrical Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AC Power</td>
</tr>
<tr>
<td>B</td>
<td>DC Power</td>
</tr>
<tr>
<td>C</td>
<td>Neutral</td>
</tr>
<tr>
<td>D</td>
<td>Ground</td>
</tr>
<tr>
<td>E</td>
<td>Equipment</td>
</tr>
<tr>
<td>F</td>
<td>Fire</td>
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<tr>
<td>G</td>
<td>Gas</td>
</tr>
<tr>
<td>H</td>
<td>Heat</td>
</tr>
<tr>
<td>I</td>
<td>Inhibit</td>
</tr>
<tr>
<td>J</td>
<td>Junction</td>
</tr>
<tr>
<td>K</td>
<td>Knockout</td>
</tr>
<tr>
<td>L</td>
<td>Lighting</td>
</tr>
<tr>
<td>M</td>
<td>Mechanical</td>
</tr>
<tr>
<td>N</td>
<td>Neutral</td>
</tr>
<tr>
<td>O</td>
<td>Operation</td>
</tr>
<tr>
<td>P</td>
<td>Power</td>
</tr>
<tr>
<td>Q</td>
<td>Electrical</td>
</tr>
<tr>
<td>R</td>
<td>Resistance</td>
</tr>
<tr>
<td>S</td>
<td>Switch</td>
</tr>
<tr>
<td>T</td>
<td>Terminals</td>
</tr>
<tr>
<td>U</td>
<td>Unidentified</td>
</tr>
</tbody>
</table>

### Fire Alarm Device Legend

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon 1]</td>
<td>Smoke Detector</td>
</tr>
<tr>
<td>![Icon 2]</td>
<td>Heat Detector</td>
</tr>
<tr>
<td>![Icon 3]</td>
<td>Heat Detector (High)</td>
</tr>
<tr>
<td>![Icon 4]</td>
<td>Heat Detector (Low)</td>
</tr>
<tr>
<td>![Icon 5]</td>
<td>Heat Detector (Duct)</td>
</tr>
<tr>
<td>![Icon 6]</td>
<td>Heat Detector (Duct High)</td>
</tr>
<tr>
<td>![Icon 7]</td>
<td>Heat Detector (Duct Low)</td>
</tr>
<tr>
<td>![Icon 8]</td>
<td>Heat Detector (Duct Low)</td>
</tr>
<tr>
<td>![Icon 9]</td>
<td>Heat Detector (Duct Low)</td>
</tr>
</tbody>
</table>

### Fire Alarm Wiring Schedule

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Wire Type</th>
<th>Wire Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke Detector</td>
<td>22 AWG</td>
<td>-</td>
</tr>
<tr>
<td>Heat Detector</td>
<td>18 AWG</td>
<td>-</td>
</tr>
<tr>
<td>Heat Detector (High)</td>
<td>18 AWG</td>
<td>-</td>
</tr>
<tr>
<td>Heat Detector (Low)</td>
<td>18 AWG</td>
<td>-</td>
</tr>
<tr>
<td>Heat Detector (Duct)</td>
<td>18 AWG</td>
<td>-</td>
</tr>
<tr>
<td>Heat Detector (Duct High)</td>
<td>18 AWG</td>
<td>-</td>
</tr>
<tr>
<td>Heat Detector (Duct Low)</td>
<td>18 AWG</td>
<td>-</td>
</tr>
</tbody>
</table>

### Electrical System

- **System No. C-2/S-3**
  - P Rating: 3, 4, and 6 (See Items 1A and 1B)
  - T Rating: 8
  - H Ratings: 135° Rate-of-Rise

**Underground Wiring**

- Under surface, except for the firestop system, wiring shall be installed in underground service equipment consisting of Type WC cable. The maximum distance between underground service equipment shall be 100 ft. (30.5 m).

**Power**

- Main Street, Suite 300

**Theatrical Lighting/Sound System**

- Contractor shall furnish and install fused disconnects for all HVAC equipment with fuses as per manufacturer recommendations. Ampacity, poles, and wires shall be as specified.

**Occupancy Sensor**

- Wattstopper WD-170 or equal, install 48" above floor.
<table>
<thead>
<tr>
<th>Company</th>
<th>Model Number</th>
<th>Number</th>
<th>Watts</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEGGHELLI</td>
<td>PCH-G-AT 2</td>
<td>2</td>
<td>2.5/5.2 LED UNIVERSAL CHLORIDE THERMOPLASTIC</td>
<td></td>
</tr>
<tr>
<td>LITHONIA</td>
<td>WHERE REQUIRED BY ADJACENT BLACK FINISHES</td>
<td></td>
<td></td>
<td>SEE FINISH SCHEDULE.</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>6.25&quot; X 6.25&quot; X 1.75&quot; WALL OR CEILING MOUNT</td>
<td></td>
<td></td>
<td>EMERGENCY LIGHT WITH INTERCHANGABLE OPTICS. BLACK FINISH</td>
</tr>
<tr>
<td>EP BOCK</td>
<td>VWB-15-41-LED-P-G 1</td>
<td>1</td>
<td>15 LED</td>
<td>WALL, 18&quot; AFF</td>
</tr>
<tr>
<td>AFF WILLIAMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LITHONIA</td>
<td>2' X 2' RECESSED INDIRECT GRID TROFFER, 3,000 LUMENS</td>
<td></td>
<td></td>
<td>SMOOTH DIFFUSE LENS.</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>A2 PHILIPS 2FGG45L8352DS-UNVDIM-F1/D 1</td>
<td>1</td>
<td>45 LED</td>
<td>RECESSED 0-10V DIM</td>
</tr>
<tr>
<td>AFF WILLIAMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1E PHILIPS</td>
<td>2FGG48L8354DS-UNVDIM-F1/D - EMLED 1</td>
<td>1</td>
<td>42 LED</td>
<td>RECESSED 0-10V DIM</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>2' X 2' RECESSED INDIRECT GYP FLANGE TROFFER, 3,000 LUMENS</td>
<td></td>
<td></td>
<td>SMOOTH DIFFUSE LENS.</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>2' X 4' RECESSED INDIRECT GRID TROFFER, 4,800 LUMENS</td>
<td></td>
<td></td>
<td>SMOOTH DIFFUSE LENS.</td>
</tr>
<tr>
<td>DE VISCOR</td>
<td>LCOM-N-48-LED-8-35K-040L-UNV-???-AD10</td>
<td>1</td>
<td>36 LED SURFACE</td>
<td>PENDANT 0-10V DIM</td>
</tr>
<tr>
<td>LITHONIA</td>
<td></td>
<td></td>
<td></td>
<td>PHILIPS</td>
</tr>
<tr>
<td>H1 METEOR</td>
<td>CSS-100-359-UNV-DMXRJ45-WD-???-AD10</td>
<td>1</td>
<td>107 LED PENDANT</td>
<td>DMX &lt;0.1% ETC</td>
</tr>
<tr>
<td>ALTMAN</td>
<td>60° BEAM SPREAD 7620 LUMEN 6&quot; CYLINDER 92 CRI. 15&quot; TALL</td>
<td></td>
<td></td>
<td>15° BEAM SPREAD 1610 LUMEN 4&quot; DOWNLIGHT 92 CRI. SAME MANUFACTURER AS G1. BLACK TRIM</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>TSL-9-3-40W-35K-M7-UNV-CP-???-EMB310</td>
<td>1</td>
<td>40 LED SURFACE</td>
<td>0-10V DIM</td>
</tr>
<tr>
<td>K FINELITE</td>
<td>HP-2 WW-AM-K-XX'-V-UNV-SC-AM18-FE-DIM 1</td>
<td>1</td>
<td>4.9/FT LED WALL</td>
<td>VIF 0-10V DIM</td>
</tr>
<tr>
<td>LITHONIA</td>
<td></td>
<td></td>
<td></td>
<td>BLACK HOUSING</td>
</tr>
<tr>
<td>HE WILLIAMS</td>
<td></td>
<td></td>
<td></td>
<td>OVERHEAD</td>
</tr>
<tr>
<td>ALTMAN</td>
<td>60° BEAM SPREAD 7620 LUMEN 6&quot; CYLINDER 92 CRI. 15&quot; TALL</td>
<td></td>
<td></td>
<td>15° BEAM SPREAD 1610 LUMEN 4&quot; DOWNLIGHT 92 CRI. SAME MANUFACTURER AS G1. BLACK TRIM</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>COLUMN MOUNT CYLINDER INDIRECT 11° BEAM SPREAD 1300 LUMENS</td>
<td></td>
<td></td>
<td>DIRECT WITH 4000 LUMENS AND 83°</td>
</tr>
<tr>
<td>CC V2 C4LU-N-V-1-D-13-83-35-11-40-83-???</td>
<td>1</td>
<td>51 LED COLUMN</td>
<td>0-10V 10% DIM</td>
<td></td>
</tr>
<tr>
<td>INSIGHT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHILIPS</td>
<td>107L-32L-530-NW-G1-3-EBPC-UNV-??</td>
<td>1</td>
<td>52 LED SURFACE</td>
<td>HE WILLIAMS</td>
</tr>
<tr>
<td>LITHONIA</td>
<td>2.5&quot; X 2.5&quot; EXTRUDED ALUMINUM FLUSH MOUNT DIRECT / INDIRECT SCONCE. 1' LONG. NO VISIBLE FASTENERS.</td>
<td></td>
<td></td>
<td>CLEAR ANODIZED FINISH. INTEGRAL POWER SUPPLY. ALIGN WITHIN WALL REVEALS. JBOX CENTERED 4&quot;</td>
</tr>
<tr>
<td>SATIN CLEAR ANODIZED FINISH. INTEGRAL POWER SUPPLY. ALIGN WITHIN WALL REVEALS. JBOX CENTERED 4&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5&quot; X 2.5&quot; EXTRUDED ALUMINUM FLUSH MOUNT DIRECT ONLY SCONCE. 4' LONG. NO VISIBLE FASTENERS. SATIN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LITHONIA</td>
<td>2&quot; WIDE LINEAR WALL WASH FIXTURE WITH KICKER. BODY AND TRIM PAINTED BLACK WITH DMX DRIVERS.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V2 BETA</td>
<td>CALCO 95 0700 30 RGB S1 MS 1</td>
<td>1</td>
<td>65 LED PENDANT</td>
<td>DMX DELRAY</td>
</tr>
<tr>
<td>BB NOT USED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLUMN MOUNT CYLINDER INDIRECT 11° BEAM SPREAD 1300 LUMENS. DIRECT WITH 4000 LUMENS AND 83°</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHILIPS</td>
<td>107L-32L-530-NW-G1-3-EBPC-UNV-??</td>
<td>1</td>
<td>52 LED SURFACE</td>
<td>HE WILLIAMS</td>
</tr>
<tr>
<td>LITHONIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48&quot; RING PENDANT WITH 12,500 LUMENS DIRECT AND RGB COLOR CHANGING INDIRECT. 4&quot; PROFILE. PROVIDE DMX</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LITHONIA</td>
<td>EXTERIOR WALL PACK WITH EM OPTION FOR EGRESS WHERE REQUIRED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIRCHWOOD</td>
<td>RECESSED LINEAR 12' WET LOCATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GG8 METALUMEN</td>
<td>RM4DOD-1L35K-8'-M-SA-L3-1-R-4 1</td>
<td>6/FT LED RECESSED 0-10V 10% DIM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINELITE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5&quot; TALL 180° MICROBOLLARD WITH DMX DRIVER. INSTALL TUCKED IN TIGHT AT BACK OF SEATING ROW AT REAR OF UPPER AUDITORIUM.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/8&quot; = 1'-0&quot;</td>
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<td></td>
</tr>
<tr>
<td>NOTES:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. REFER TO THE ARCHITECT'S REFLECTED CEILING PLAN FOR THE EXACT LOCATION OF FIXTURES.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. ALL FIXTURES SHALL BE FURNISHED COMPLETE WITH LED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PROVIDE 10% SPARE DRIVERS AND LED BOARDS PER FIXTURE TYPE.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIXTURES AND LIGHTING CONTROLS ARE THE BASIS OF DESIGN AND HAVE BEEN SELECTED BASED ON PHOTOMETRIC PERFORMANCE, ELECTRICAL CHARACTERISTICS, VISUAL COMFORT, AND AESTHETIC INTERPRETATION. THE SECOND AND THIRD NAME PROVIDED MUST MEET ALL ASPECTS OF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. SAMPLES OF EVERY FIXTURE TYPE IN THE PERFORMANCE SPACES SHALL BE PROVIDED AT TIME OF SUBMITTALS SEE SPEC FOR ADDITIONAL INFORMATION. SHOULD THE PROPOSED FIXTURE BE REJECTED THE SPECIFIED SHALL BE PROVIDED.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. DO NOT POWER UP SYSTEM UNTIL ALL WIRING IS TERMINATE AT CONTROL/VERTICAL. CARE SHOULD BE TAKEN TO ENSURE DATA CONNECTIONS ARE NOT CROSSED.

2. ROUTE THIS CIRCUIT THROUGH CRESTRON LOBBY DIMMING/CONTROL PANEL. PANEL SHALL BE PASS-THRU TYPE, WITH DIMMING MODULES FOR EACH LOAD.

3. ROUTE 0-10V (DC) CONTROLS FOR THIS CIRCUIT BACK TO LC RACK, PURPLE AND GRAY. USE 16/2 TW PAIR CONTROL CABLE, PLENUM RATED STRAPPED TO OUTSIDE OF CONDUIT, 3'-0" O.C.

4. ROUTE DMX CONTROLS FOR THIS CIRCUIT BACK TO LOBBY DIMMING PANEL, CABLE IN & OUT OF FIXTURE; SEPARATE DMX ADDRESS EACH FIXTURE. DMX CABLE CAT5E PLENUM, TYPICAL.

5. POWER SUPPLIES FOR TYPE R1 IN LOBBY IS REMOTE TYPE. LOCATE AT ACCESSIBLE LOCATION ABOVE CEILING OR IN CLOSET. TYPES R2, R4, RD2, & RDR HAVE INTEGRAL POWER SUPPLIES.

6. LIGHTING NETWORK (CrestNet) - TYPICAL

INDIVIDUAL CIRCUIT NOTES:

1. ROUTE THIS CIRCUIT THROUGH CRESTRON LOBBY DIMMING/CONTROL PANEL. PANEL SHALL BE PASS-THRU TYPE, WITH DIMMING MODULES FOR EACH LOAD.

2. ROUTE 0-10V (DC) CONTROLS FOR THIS CIRCUIT BACK TO LC RACK, PURPLE AND GRAY. USE 16/2 TW PAIR CONTROL CABLE, PLENUM RATED STRAPPED TO OUTSIDE OF CONDUIT, 3'-0" O.C.

3. ROUTE DMX CONTROLS FOR THIS CIRCUIT BACK TO LOBBY DIMMING PANEL, CABLE IN & OUT OF FIXTURE; SEPARATE DMX ADDRESS EACH FIXTURE. DMX CABLE CAT5E PLENUM, TYPICAL.

4. POWER SUPPLIES FOR TYPE R1 IN LOBBY IS REMOTE TYPE. LOCATE AT ACCESSIBLE LOCATION ABOVE CEILING OR IN CLOSET. TYPES R2, R4, RD2, & RDR HAVE INTEGRAL POWER SUPPLIES.

5. LIGHTING NETWORK (CrestNet) - TYPICAL

INDIVIDUAL CIRCUIT NOTES:

1. ROUTE THIS CIRCUIT THROUGH CRESTRON LOBBY DIMMING/CONTROL PANEL. PANEL SHALL BE PASS-THRU TYPE, WITH DIMMING MODULES FOR EACH LOAD.

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