ADDENDUM NUMBER THREE

for

USC Health Sciences Renovation
Project No.: U-676-09

State Permanent Improvement Project No.: H27-6052-AC

COLUMBIA, SOUTH CAROLINA

PREPARED BY:

The Boudreaux Group 1200 Park Street Columbia, South Carolina 29201

DATE OF ISSUE: November 7, 2013

TO: ALL BIDDERS OF RECORD, CONSULTANTS, OWNER:

The following items shall take precedence over the drawings and specifications for the above named project and shall become a part of the contract documents. Where any item called for in the specifications, or indicated on the drawings, is not supplemented hereby, the original requirements shall remain in effect. Where any original item is amended, voided or superseded hereby, the provisions of such item not specifically amended, voided or superseded shall remain in effect.

CONTRACTOR SHALL ACKNOWLEDGE RECEIPT OF ADDENDUM.

This addendum consists of 13 pages and the following attachments: SK-M-1, SK-M-2, SK-M-3, M3.2, SK-P-2, SK-P-3, SK-P-4, Specification Section 087100 - "Door Hardware" (not including schedule).

I. Architectural:

Drawings

Item No.	Description
1.	Revision: Reference Drawings D1.0, D1.1, D1.2, D1.3: Demolition General Note 7: Revise to read as follows: "All existing floor finishes and thresholds and floor transitions to be removed in the entirety down to the concrete structure. Prepare the concrete floor to meet the access floor installer's requirements for installation of product. Quarry and slate tile flooring that is recessed in the existing floor structure are to remain except where indicated to be removed on section details. At perimeter of corridors where walls are removed and at walls around and within restrooms where walls are removed and recessed slabs occur, contractor is to grout any wall recessed remaining from demolition to provide a smooth concrete surface for work. For bidding purposes, contractor to assume that wall recesses occur at perimeter of corridor walls and perimeter of restroom walls and walls within the restrooms on

the first, second, and third floors."

2. Revision: Reference Drawings D1.0, D1.1, D1.2, D1.3: New Construction/Repair General Note 2: Revise to read as follows:
"At locations in existing floor slab where holes remain from items being demolished (such as pipes, conduit, etc.) contractor is responsible for patching all holes remaining in the floor slab at completion of demolition work. Contractor to perform work as indicated on S4.1. At holes larger than 12", bring this item to the attention of the architect immediately for instructions on repairing. For bidding purposes, assume (100) 6" penetration holes total to be patched on floors 1-3 and (50) 2" penetration holes total to be patched on floors 1-3. See roof plan D1.4 for demolition holes to be patched as noted by keynote E1 and see C/S4.1 for patching requirements on roof."

3. Revision: Reference Drawing A1.0; under Basement Construction General Notes; revise the note about the vapor barrier on top of the existing dirt as follows:

"Provide Vapor Retarder on Top of Existing Dirt at All Crawl Space Areas. See Specification Section 072100 Thermal Insulation for specification."

Also refer to revisions under specifications.

4. Clarification: Reference Drawings A1.1, A1.2, A1.3: General Note 16 indicates for horizontal louver blinds to be installed in all exterior windows. This note also applies to previously exterior windows that are now part of the two story atrium.

5. Clarification: Reference Drawings A8.1.a and A8.1.b, Miscellaneous, Window Blinds: Window blinds are required at exterior windows as noted, as well as at interior office doors with vision lites. A list of office doors requiring window blinds is listed below:
118A - 118G (including sidelites where applicable), 120A - 126A, 204A-207A, 226A - 238A, 240B - 240H (including sidelites where applicable), 304A - 309A, 313A - 315A, 322B (including sidelites), 324A - 334A.

6. Clarification: Reference Drawing A1.1: The floor finish on the ramps in V101 and V102 is floor tile as indicated on the finish schedule A8.1a and details on sheet A9.9.

7. Clarification: Reference Drawing A8.1a: In Auditorium 106, Remark note 11 describes the location of the RFT to be at the stairs. Carpet is indicated throughout the remainder of the room.

8. Revision: Reference Drawings A8.1a and A8.1b: Revise Remark Note #11 on finish schedule to read as follows and apply this note to rooms 104, 105, 213, 214, 311, and 312:
"Rubber flooring located at stairs and landing inside door 106C, 104A, 105A, 213A, 214A, 311A, AND 312A."

9. Revision: Reference Drawings A2.1, A2.2, A2.3, keynote 2: Revise to read as follows:
"Electrically operated recessed remote control projection screen, provided and installed by contractor as indicated in specification section 115213 'Projection Screens'. Contractor also to provide blocking and support per manufacturer's recommendations. Contractor responsible for coordinating space requirements in framing as required - See specifications for sizing. Coordinate with owner and AV consultant."

Specifications
Item No. Description

1. Clarification: Reference Section 040120 "Maintenance of Unit Masonry" Section 3.3: Reanchoring veneers occurs where the contractor is required to remove the brick and reconstruct portions of the exterior masonry wall as directed by keynote #14 on the A4 series of drawings.

2. Revision: Reference Section 071326 Self-Adhering Sheet Waterproofing; under section 1.2.A revise the description of what the section includes as follows:

"1. Modified bituminous sheet waterproofing over vertical walls and over mud slab under new basement concrete slab. "

This section does NOT include the vapor barrier to be provided over and throughout the crawl space dirt floor.

3. Revision: Reference Section 071326 Self-Adhering Sheet Waterproofing.

Add the following section for waterproofing product to be provided under new basement concrete slab.

"2.3 BONDED HDPE OR POLYETHYLENE SHEET WATERPROOFING

A. Bonded HDPE or Polyethylene Sheet for Horizontal Applications Over Mud Slab: Uniform, flexible, multilayered-composite sheet membrane consisting of either an HDPE film coated with pressure-sensitive adhesive and protective release liner, total 46-mil (1.2-mm) thickness, or a cross-laminated film of low- and medium-density polyethylene, coated with a modified asphalt layer and a nonwoven geotextile-fabric final layer, total 95-mil (2.4-mm) thickness; with the following physical properties:

1. Tensile Strength, Film: 2000 psi (13.8 MPa) minimum; ASTM D 412.
2. Low-Temperature Flexibility: Pass at minus 10 deg F (minus 23 deg C); ASTM D 1970.
3. Peel Adhesion to Concrete: 5 lbf/in. (875 N/m) minimum; ASTM D 903, modified.
4. Lap Adhesion: 2.5 lbf/in. (440 N/m) minimum; ASTM D 1876, modified.
5. Hydrostatic-Head Resistance: 231 feet (70 m); ASTM D 5385, modified.

6. Puncture Resistance: 200 lbf (890 N) minimum; ASTM E 154.
7. Water Vapor Permeance: 0.01 perms (0.6 ng/Pa x s x sq. m) maximum; ASTM E 96/E 96M, Water Method.
8. Water Absorption: 0.5 percent maximum; ASTM D 570.

B. Mastic, Adhesives, and Detail Tape: Liquid mastic and adhesives, and adhesive tapes recommended by waterproofing manufacturer."

Add the following section for installation of waterproofing to be provided under new basement concrete slab.

"3.6 BONDED HDPE OR POLYETHYLENE SHEET-WATERPROOFING APPLICATION

C. Install bonded HDPE or polyethylene sheets according to manufacturer's written instructions.

D. Horizontal Applications: Install sheet with HDPE or polyethylene face against substrate. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by membrane manufacturer. Overlap and seal seams, and stagger and tape end laps to ensure watertight installation.

E. Corners: Seal lapped terminations and cut edges of sheet waterproofing at inside and outside corners with detail tape.

F. Seal penetrations through sheet waterproofing to provide watertight seal with detail tape patches or wraps and a liquid-membrane troweling.

G. Install sheet-waterproofing and auxiliary materials to produce a continuous watertight tie into adjacent waterproofing.

H. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Tape perimeter of damaged or nonconforming area extending 6 inches (150 mm) beyond repaired areas in all directions. Apply a patch of sheet waterproofing and firmly secure with detail tape."

4. Revision: Reference Section 072100 "Thermal Insulation": Add to the list of approved manufacturers listed in section 2.2.A.1: Viper Vaporcheck II 15-mil under-slab vapor barrier.

5. Revision: Reference Section 072100 "Thermal Insulation":

Under Section 1.2.A Summary add the following:

"4. Vapor Retarder on Top of Existing Dirt at All Crawl Space Areas."

Add Section 2.2.B as follows:

"2.2.B Vapor Retarder on Top of Existing Dirt at All Crawl Space Areas:

1. Polyethylene Vapor Retarders: ASTM D 4397, 20 mils (0.50 mm) thick, multi-ply laminated with a UV stabilized film and reinforced with a high strength cord grid, with maximum permeance rating of 0.13 perm (7.5 ng/Pa x s x sq. m)."

Refer to following sections under this specification section for Installation of Vapor Retarder on Top of Existing Dirt at All Crawl Space Areas: 3.5.A; 3.5.B; 3.5.C.2; 3.5.C.3; and 3.6.A.

6. Revision: Reference Section 080152 "Restoration of Wood Windows and Doors": Revise 1.8.A.11 to read as follows:
"Apply finish coats according to Section 099600 'High Performance Coatings'."

7. Revision: Reference Section 085112 "Aluminum Clad Wood Windows": Add to the list of approved manufacturers listed in 2.1.A: Kolbe Windows and Doors, Ultra Series Sterling Double Hung Window.

8. Revision: Reference Section 087100 "Door Hardware". See attached revised specification section. The hardware schedule is not attached and is to remain unchanged.

9. Revision: Reference Section 96519 "Resilient Tile Flooring":

Under Section 1.2.A Summary add the following:

"2. Solid Vinyl Floor Tile."

Under Part 2 - Products add the following Section:

"2.4 - SOLID VINYL FLOOR TILE

A. Products: The basis of design product is listed on sheet A8.1a and A8.1b. Provide this product or an equal product by, but not limited to, one of the manufacturers listed below:
   a. Amtico International Inc
   b. Flexco, Inc.
   c. Johnsonite; A Tarkett Company
   d. TOLI International
   e. Mannington Commercial.

B. Tile Standard: ASTM F 1700.
   1. Class: III, Heavy Duty Vinyl

C. Thickness: 5 mm

D. Size: Manufacturer's standard as approved by architect

E. Colors and Patterns: As selected by architect from manufacturer's full range of industry colors."

10. Revision: Reference Section 098433 "Sound Absorbing Wall Units": Add to the list of approved manufacturers listed in 2.1.A: Accutrack Systems, LLC.

11. Revision: Reference Signage Graphic Attachments to Section 101400 "Signage":
    a. location of braille shall be positioned below the corresponding text on all graphics
    b. Pictogram shall have a field height of 6” minimum on all graphics. Character and braille shall not be located in the pictogram field on all graphics.

12. Revision: Reference Section 115213 "Projection Screens": Remove section 2.2.D from the project manual.

13. Revision: Reference Section 099600 "High Performance Coatings". Add the following to the approved list of manufacturers: Tnemec Series 151-1051 Elasto-Grip FC for primer, and Tnemec Series 156 Enviro-Crete for finish coats.

II. Mechanical:

Drawings

Item No.	Description

1. Revision: Reference Drawing M4.1, Schedules, Notes and Legend. Refer to the Pump Schedule. Change the HWP-1,2 Head to 106 feet.

2. Revision: Reference Drawing M1.2A, Second Floor Underfloor Plan. Add a thermostat to Print 216.

3. Revision: Reference Drawing M1.1A, First Floor Underfloor Plan. Change the Y floor terminals in Conference Room 109A and Carolina News Reporter Room 109 to X floor terminals. Change the X floor terminal in Carolina News Reporter Room 109 at column line 2 and C to a Y floor terminal.

4. Revision: Reference Drawing M1.2A, Second Floor Underfloor Plan. Add a thermostat to Print 216.

5. Revision: Reference Drawing MS1.1, Mechanical Site Plan. Refer to Reworked Manhole D2-13S. Change the new entering condensate tag from GC to PC. The condensate is pumped condensate.

6. Revision: Reference Drawing M1.0, Basement Floor Plan. Add backdraft dampers to the louvers in Electrical 001 and Mechanical 002.

7. Revision: Reference Drawing M1.4 Roof Plan. Change the bypass duct size on AHU-1 to 26”x26”, AHU-2 to 18”x18”, AHU-3 to 18”x18” and AHU-4 to 18”x18”.

8. Revision: Reference Drawing M2.0, Basement Piping Floor Plan. Refer to the steam vent pipes terminating at the crawl space wall on the south side of the building. The pipes shall turn down with an elbow and the opening shall be covered with an insect screen.

9. Revision: Reference Drawing M2.0, Basement Piping Floor Plan. Refer to the steam pipe entry into Mechanical Room 002. Provide an anchor plate per the detail on sheet M4.3 anchored to the concrete wall at the wall penetration.

10. Revision: Reference Drawing M4.1, Schedules, Notes and Legend. Refer to the Air Handling Unit Schedule. Change remark 4 to provide a 4" MERV 13 filter. Change reference in specification 230500 Part 2 Products, Air Handling Units to a 4" filter.

11. Revision: Reference Drawing M1.1A First Floor Underfloor Plan. See attached sketch SK-M1. This sketch modifies the underfloor duct at Control Room 110.

12. Revision: Reference Drawing M1.3B Third Floor Plan. See attached sketch SK-M2. This sketch adds a building pressure relief damper and hood on the roof.

13. Revision: Reference Drawing M1.4 Roof Plan. See attached sketch SK-M3. This sketch adds a building pressure relief damper and hood on the roof.

14. Revision: Reference Drawing M3.2 Riser Schematics. This revised drawing M3.2-R1 adds CFM values to the duct risers for air balancing. Air balancing shall include AHU airflow readings for total air and ventilation air at the main unit and airflow balancing at the riser branch ducts on each floor per the riser diagrams.

Specifications

Item No.	Description

1. Revision: Reference Section 230010, General Provisions - HVAC. The following are to be added as prior approved manufacturers:

   Condensate Units: Shipco, Skidmore, Thermaflow
   Ductless Split Heat Pumps: Panasonic
   Pumps: Armstrong, Patterson
   Hot Water Converter: Armstrong, Thermaflow
   Automatic Flow Control Valves: Pro Hydronics, Hays Fluid Controls
   Exhaust Fans: American Coolair
   Sound Attenuators: Aerosonics
   Radiant Ceiling Heater Panels: Rittling
   Temperature and Pressure Gauges: Winters

2. Revision: Reference Section 230700, HVAC Insulation. See Part 2 – Products. Add the following:

   JACKET FOR PIPING IN CRAWL SPACE:

   All steam, condensate and water piping insulation in crawl shall be Foamglas as manufactured by Pittsburg Corning, Dyplast, Dow or equal jacketed with Pittwrap jacketing in accordance with procedures given on Pittsburgh Corning Product Data Sheet FI-112.

3. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, A. General, 5. Smoke Dampers and Smoke Detectors. Delete "Units 15,000 CFM or greater" and

reaplce with “AHU-1, AHU-2, AHU-3 and AHU-4”. These supply and return smoke dampers are located in the shafts as shown on M3.2.

4. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, A. General, 4. Night High Limit and Night Low Limit. Change paragraph to read: “During unoccupied periods scheduled chilled water pumps and air handling units will be energized whenever space temperature rises above night high limit of 85 degrees (adj). During unoccupied periods hot water pumps and RCP control valves will be activated whenever space temperature drops below night low limit.”

5. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, I. AHU-5, 5. Pressure Control. Add “3. Static pressure shall be reset based on the zone requiring the most pressure.”

6. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, A. General. Add “6. Humidity Sensors: Provide a relative humidity sensor in the central corridor of each floor to monitor and report relative humidity to the central control system. Provide a high limit alarm.”

7. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, A. General. Add “7. Temperature Sensors: Provide a temperature sensor in each Communication Room, 104, 213, 311, and Server 215 and Master AV 210 to monitor and report room temperature to the central control system. Provide a high limit alarm.”

8. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, E. RTU-1-4, 1. Start/Stop. Add to b. “CO2 sensors in space will monitor CO2 levels and when CO2 levels rise above 1000 ppm (adj.) the outside air damper shall open to the ventilation cfm as scheduled on the AHU schedule.”

9. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, I. AHU-5, 1. Start/Stop. Add to b. “CO2 sensors in space will monitor CO2 levels and when CO2 levels rise above 1000 ppm (adj.) the outside air damper shall open to the ventilation cfm as scheduled on the AHU schedule.”

10. Revision: Reference Section 230900, Central Control and Monitoring System. See Part 3 – Performance / Execution, 3.5 Sequence of Operation, A. General. Add “7. Building Pressure Control: Provide a pressure sensor in the central corridor of each floor to monitor building positive pressure. Modulate relief damper on roof to maintain a positive building pressure of 0.1” (adj.).”

Clarifications

1. Clarification: The pipe in the crawl space is addressed in the addendum under Specification item 2. The pipe shown in Mechanical 002 and Mech 107 is Above Ground Indoor Piping and the Jacket is addressed as Jacket for Equipment Room Piping.

III. Plumbing:

Drawings
Item No. Description

1. Refer to Drawing P1.1

   Refer to the attached sketch, SK-P-2. This sketch changes some of the storm drain line sizes that were mislabeled on Sheet P1.1.

2. Refer to Drawing P1.2

   Refer to the attached sketch, SK-P-3. This sketch changes some of the storm drain line sizes that were mislabeled on Sheet P1.2.

3. Refer to Drawing P1.3

   Refer to the attached sketch, SK-P-4. This sketch changes a storm drain line size that was mislabeled on Sheet P1.3.

IV. Electrical:

Drawings
Item No. Description

1. Revision: Reference Drawing E0.3: In Note 8, in lieu of pull string to be installed in 2" data conduit, provide two CAT-6 data cables with outside plant insulation. These cables shall be routed back to basement level Communication Room 004. Add to note that all call station work shall be coordinated with USC (contact: Frank Aycock, 803-777-4217).

2. Revision: Reference Drawing E2.0: Add Note 4 (and leader to Elevator Closet 003) that reads, "The Contractor shall include, as part of the elevator traveling cable, one duplex (two strands) single-mode fiber cable for elevator cab camera. Provide 10 feet of fiber cable slack on each end (one end being in a communication j-box in Elevator Closet 003 and the other end being in communication j-box on top of the elevator cab). The Contractor shall provide these two j-boxes (Hoffman A1412CHQR or approved equal) with one single Nema L5-15R receptacle in each box. Provide the two CAT-6 data cables to

communication j-box in Elevator Closet 003 (these data cables are already shown on drawing E2.0).

3. Addition: Reference Drawing E2.0: Add Note 5 referencing EF-4, EF-5, and EF-6 that reads, “EF-4, EF-5, and EF-6 shall be controlled by mechanical contractor furnished thermostat. Electrical contractor shall install and connect.”

4. Revision: Reference Drawing E2.0: In Mechanical Room 002, relocate location of EF-4 to match location shown on mechanical drawing M1.0. And relocate locations of CRP-1, HWP-1, and HWP-2 to match locations shown on mechanical drawing M2.0.

5. Revision: Reference Drawings E2.1, E2.2, and E2.3: For all fire/smoke dampers and motor-operated dampers, provide individual motor-rated switches for local disconnect for maintenance purposes.

6. Revision: Reference Drawing E2.1: In Note 13, change reference from EF-4 and EF-5 to VF-1 and VF-2, respectively.

7. Revision: Reference Drawing E2.2: In Note 13, change reference from EF-6 and EF-7 to VF-3 and VF-4, respectively.

8. Revision: Reference Drawing E2.3: In Note 8, change reference from EF-8 and EF-9 to VF-5 and VF-6, respectively.

9. Addition: Reference Drawing E5.0: Add the following note adjacent to main switchboard “MSB1” – “The electrical contractor shall install owner-furnished (in coordination with JCI) sub-metering CT’s in main switchboard “MSB1” to record overall building electrical loads. Coordinate installation with JCI representative.”

10. Revision: Reference Drawing E6.0: In panel “BLS”, space 23,25, change description from “Block Heater – Transformer” to “Block Heater – Generator.”

11. Revision: Reference Drawing E7.0: In Detail 5, add note that leaders to center hole of call station that reads, “Contractor shall stub up conduits tightly together so call station can be installed without cutting bottom hole larger; coordination with USC (contact: Frank Aycock, 803-777-4217).

Specifications

Item No. Description

1. Revision: Reference Specification Section 262310 “Packaged Engine Generators”: In paragraph 1.9.A.2, change “one set” to “two sets”. In same paragraph, add item 3 that reads, “Also provide two water filters, two pre-charged water filter cartridges, one set of valve cover gaskets, one alternator belt, one fan belt, one set of engine controller fuses, and one battery hydrometer. In paragraph 2.8.B, add sentence that reads, “Provide 200 gallons of fuel, measured after completion of testing.” In paragraph 3.6.C.3, change tests to 1) One hour of operation at 50% standby load: 2) One hour of operation at 75% standby load; 3) Three hours of operation at 100% prime load, followed by one hour at 50%

standby load. In paragraph 3.9.A.3, change instruction period from 8 hours to 4 hours.

2. Revision: Reference Specification Section 262310 “Packaged Engine Generators”: In paragraph 1.9.A.2, change “one set” to “two sets”. In same paragraph, add item 3 that reads, “Also provide two water filters, two pre-charged water filter cartridges, one set of valve cover gaskets, one alternator belt, one fan belt, one set of engine controller fuses, and one battery hydrometer. In paragraph 2.8.B, add sentence that reads, “Provide 200 gallons of fuel, measured after completion of testing.” In paragraph 3.6.C.3, change tests to 1) One hour of operation at 50% standby load: 2) One hour of operation at 75% standby load; 3) Three hours of operation at 100% prime load, followed by one hour at 50% standby load. In paragraph 3.9.A.3, change instruction period from 8 hours to 4 hours.

V. Electrical Prior Approvals:

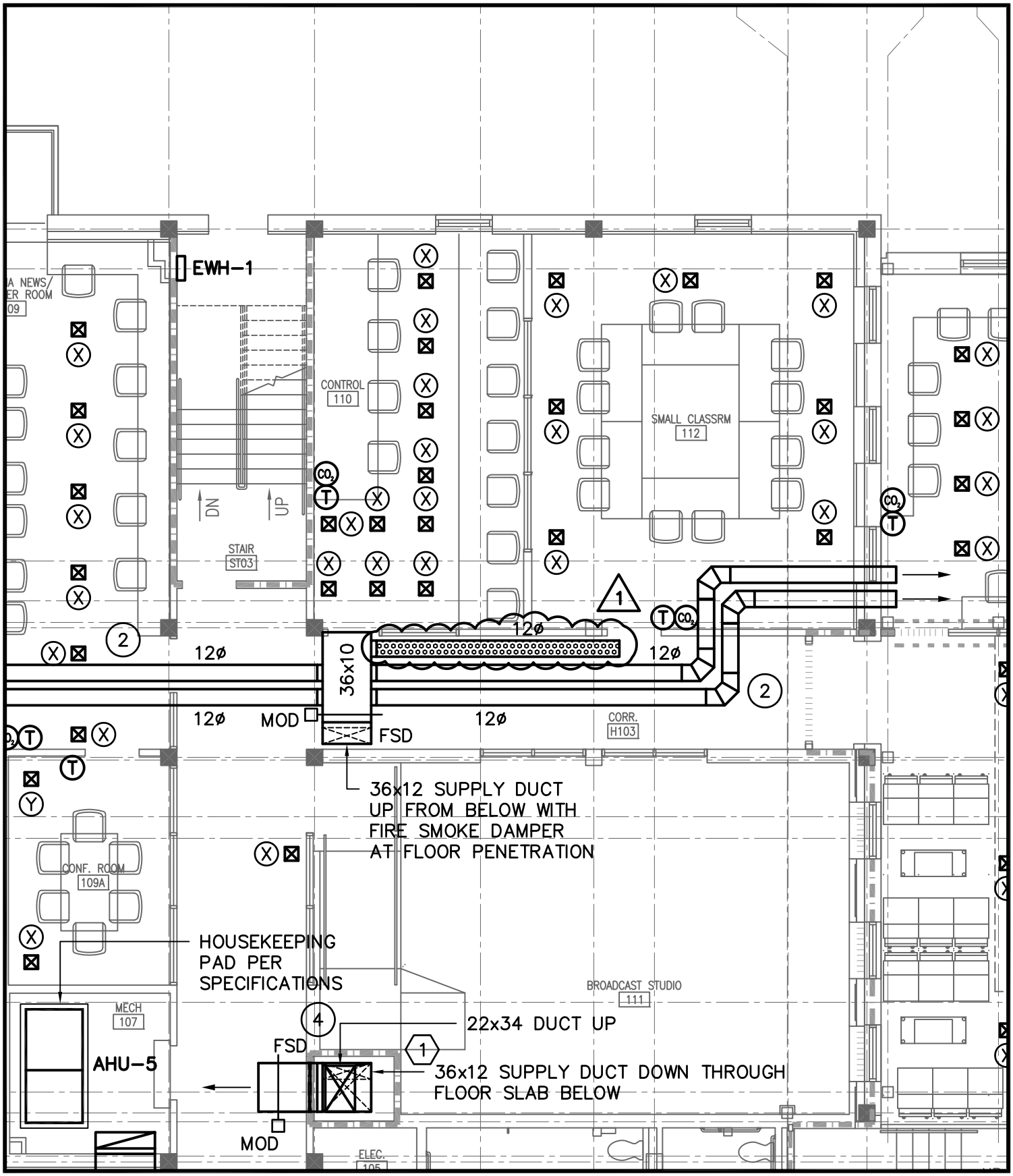
Subject to full compliance with project specifications, the following equipment is acceptable for use in bidding:
LIGHTING FIXTURES:

TYPE	MANUFACTURER	MODEL NUMBER
A	H.E. WILLIAMS	DIG-S24-232-AD-EQCLIPS-EB8P2-UNV
	COLUMBIA	STE24-232G-MPO-EU
	LITHONIA	2VT8 2 32 ADP MVOLT GEB10IS
B	H.E. WILLIAMS	DIG-S24-332-AD-EQCLIPS-EB8P3-UNV
	COLUMBIA	STE24-332G-MPO-EU
	LITHONIA	2VT8 3 32 ADP MVOLT GEB10IS
C	FINELITE	S12-ID-PLV-LENGTH-3T8-SC-91WSTO-277-FAXX-CE-C1-DIM-WHITE
	METALUMEN	C7K/3/T8/4(8)(12)/N/SSL/O/Y/W/E/1/120
	FOCAL POINT	FV4S PL CDR 3T8 1C 277 D C48 WH 4 (8) (12)
D	FINELITE	S12-ID-PLV-LENGTH-2T8-SC-91WSTO-277-FAXX-CE-C1-DIM-WHITE
	METALUMEN	C7K/2/T8/4(8)(12)/N/SSL/O/Y/W/E/1/120
	FOCAL POINT	FV4S PL DR2 2T8 1C 277 D C48 WH 4 (8) (12)
E	H.E. WILLIAMS	76-4-232-WG-7614-EB8P2-UNV
	COLUMBIA	CS4-232-EU-CSWG4
	LITHONIA	Z 2 32 MVOLT GEB10IS WGZ48
F	FINELITE	S5-WM-P-4'-2T8-SC-SPEC-277-FE-PSWHITE
	METALUMEN	O5B4CR7W4A
	SE'LUX	SUR9 2T8 PC F BF 004 WH 120

FA	BETA-CALCO, INC.	30-0006-2X40WPLL-OP
	ORIGINAL CAST	IC2-S1SA-16-MW-XXX-2BX39-120
G	H.E. WILLIAMS	LEDP60-2000-40K-CS-ED*AD-277
	SPECTRUM	LHALD625C071UE/LRALD6SSF-101
	LITHONIA	EVO 41/22 6AR 120
GA	H.E. WILLIAMS	LEDP45-1100-40K-CS-ED*AD-277
	SPECTRUM	SGE4LEDOS-40K-E1-BH12/AR4222OS-SG
	LITHONIA	EVO 41/10 4AR 120
H	ORIGINAL CAST	TB12-P1EA-31-GW-2LF24-120-XX-DLD
	BEGA	L5475
K	PRIMA	20-LO-2840-SV-BC-W
	BEGA	L5410 K4
L	H.E. WILLIAMS	22-4-232-I-EB8P2-UNV
	COLUMBIA	WC4-232-EU
	LITHONIA	SB 2 32 MVOLT GEB10IS
M	STERNBERG	MS805B/480WB/26PLT120/WA/BK
N	LUMUX	SL632/LED/120/BLACK
	LIGMAN	U40021-4000K
	AMERLUX	PSLT8-A-BLK- F40
OA	ANTIQUE STREET	DS9 A 150M MED ACS TY5 120 CS/CA 14 CS/PA W19 14 3T3 CS
OB	ANTIQUE STREET	DS9 A 70M MED ACS TY5 120 CS/CA 14 CS/PA W19 14 3T3 CS (16” height)
	CRENSHAW	WAS 4001 (16” height)
OC	LSI INDUSTRIES INC.	XGBWM3 FT LED 28 350 NW UE BLK
	ECLIPSE	MULFTLED30W4K120BZ
	LITHONIA	WST 2 10A700/40K SR4 MVOLT DBLXD
OD	H.E. WILLIAMS	PHSQ12-242T-EB2-120-GTD/ETS
	SPECTRUM	SGD8HSQ242EXCB24PGFW
	NEW STAR	NWRCK-2-42-UN-BK-EM
OE	LSI INDUSTRIES INC.	XGBWM3 WT LED 28 350 NW UE BLK
	ECLIPSE	MULFTLED30W4K120BZ
	LITHONIA	WST 2 10A700/40K SR4 MVOLT DBLXD

S	HK Lighting Group	ZXL16A-8W-HKLED-30-4K-BK
	BK LIGHTING, INC.	DS-LED-E23-NSP-A9-BLP-A-360SL/PPS-12-T-TRE20-B-BLP-120
	ECOSENSE	07AC-35-120-22-BK
T	H.E. WILLIAMS	DIG-S22-317-AD-EQCLIPS-EB8P3-UNV
	COLUMBIA	STE22-317G-MPO-3EU
	LITHONIA	2VT8 3 17 ADP MVOLT 1/3 GEB10IS
U	H.E. WILLIAMS	92-4-232-A-EB2-UNV
	COLUMBIA	LUN4-232-EU
	LITHONIA	DMW 2 32 MVOLT GEB10IS
W	NULITE	WA-217T8-UNV-PSN
	COLUMBIA	WC2-217-EU
	LITHONIA	SB 2 17 MVOLT GEB10IS
X	EMERGI-LITE	TA-PE-1/2-RC/RM
	LITHONIA	LRP 1(2) RMR (CHEVRONS) 120/277
XA	EMERGI-LITE	WW-SVX-1-R-4X
	LIGHTALARMS	WWXVE2G-4X
	LITHONIA	LV S W 1 R 120/277 EL N
Y	INTENSE LIGHTING	MBC65030-W-SP16-PFLMB-16
	LITON	LTD7210W-B10-DLV
	CON-TECH	CTL-8061-V-S-3-D-P
Z	PATHWAY	4LFS114KN/ACC4420SCLPF
	SPECTRUM	SGL4LED15W-41K-DS101-BH12/AR4966-SG-SO
	LITHONIA	EVO LW 41/10 4AR 120
AA	H.E. WILLIAMS	VCLG-4-LED*PH25/840-W-AFEQCLIPS-DFK-0648W-EDD*PH-120
	METALUMEN	RMD2 LED 40K 4 N A X D700 1 RT 120
	AXIS LIGHTING	BMRLED B2 700 40 ASO 4 W UNV D 1 TB9
GTD	IOTA	ETS
CONTROLS	PHILIPS	LRM SERIES

END OF ADDENDUM



The Boudreaux Group

1330 Lady Street (29201)
P.O. Box 5695
Columbia, SC 29250
803 799 0247 *p*
803 771 6844 *f*

Interdisciplinary Design Architecture Interiors Planning

info@boudreauxgroup.com

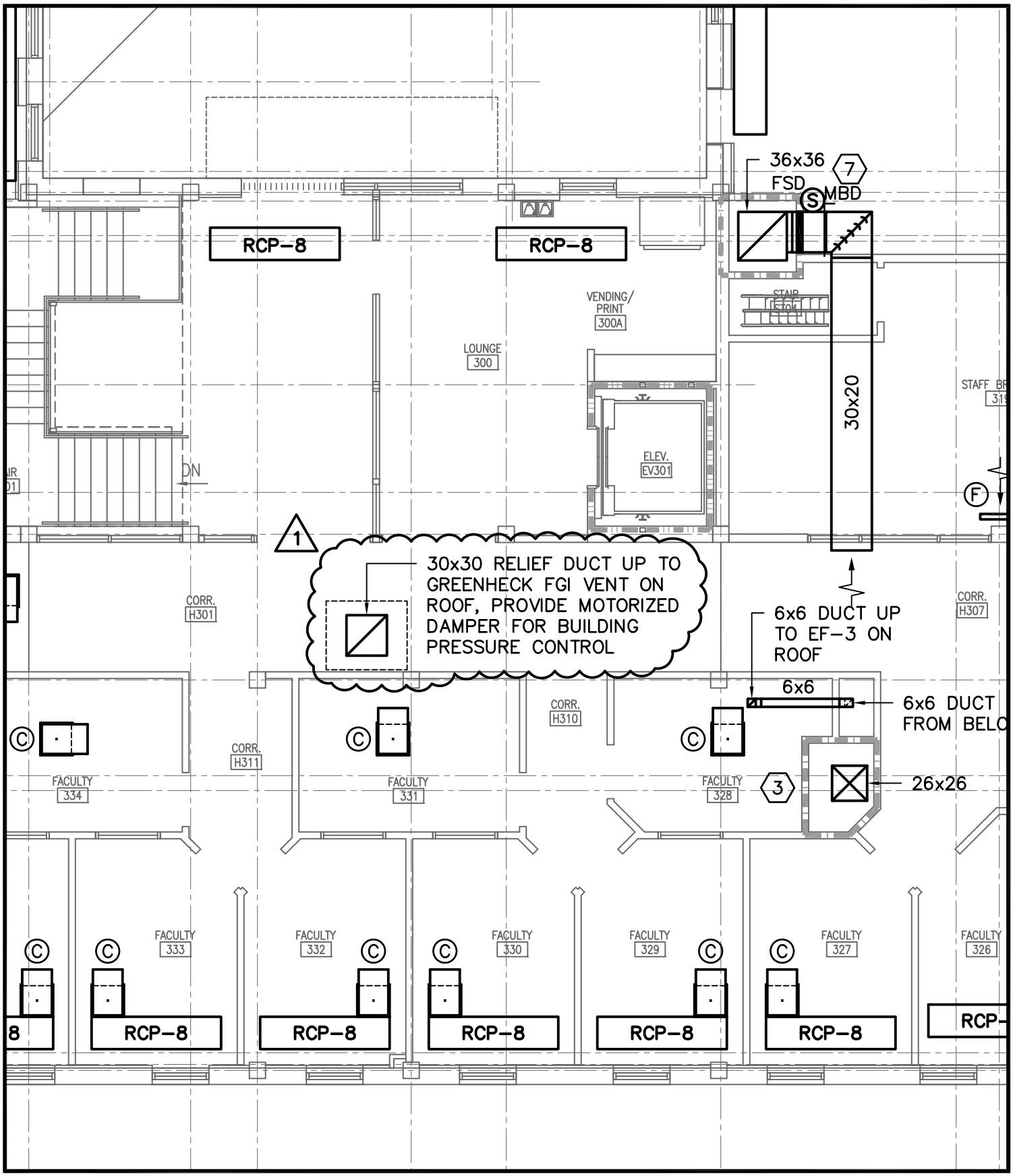
Project Title
USC HEALTH SCIENCES RENOVATION
STATE PROJECT NO.: H27-6052-AC
COLUMBIA, SOUTH CAROLINA

Arch. Project No.	Date
U-676-09	11/06/13

Revision
Addendum No. 3

Reference
drawing no. M1.1A

Sketch No.
SK-M-1



The Boudreaux Group

1330 Lady Street (29201)
P.O. Box 5695
Columbia, SC 29250
803 799 0247 *p*
803 771 6844 *f*

Interdisciplinary Design Architecture Interiors Planning

info@boudreauxgroup.com

Project Title

USC HEALTH SCIENCES RENOVATION

STATE PROJECT NO.: H27-6052-AC

COLUMBIA, SOUTH CAROLINA

Arch. Project No.	Date
U-676-09	11/06/13

Revision

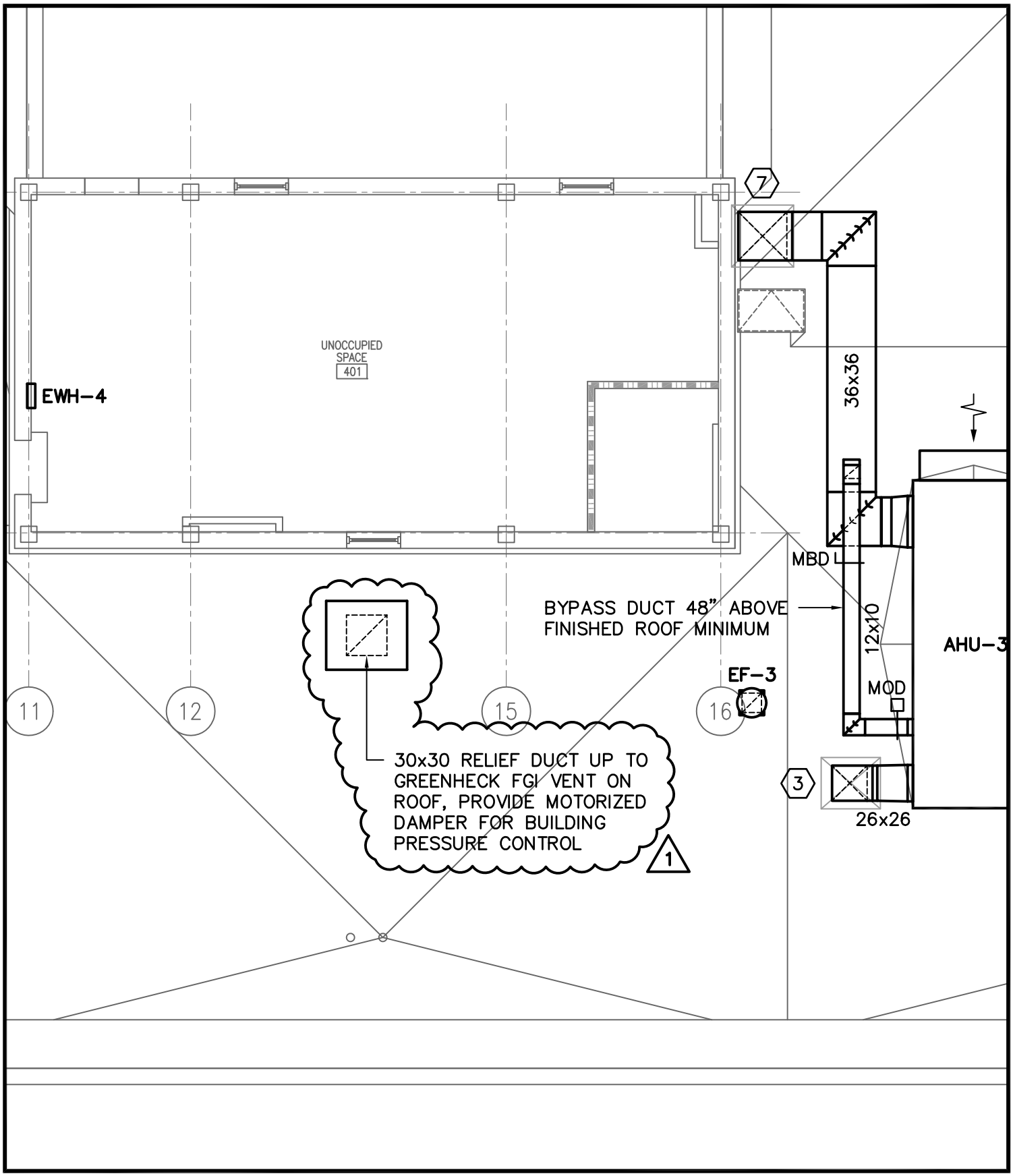
Addendum No. 3

Reference

drawing no. M1.3B

Sketch No.

SK-M-2



The Boudreaux Group
Interdisciplinary Design Architecture Interiors Planning
1330 Lady Street (29201)
P.O. Box 5695
Columbia, SC 29250
803 799 0247 *p*
803 771 6844 *f*
info@boudreauxgroup.com

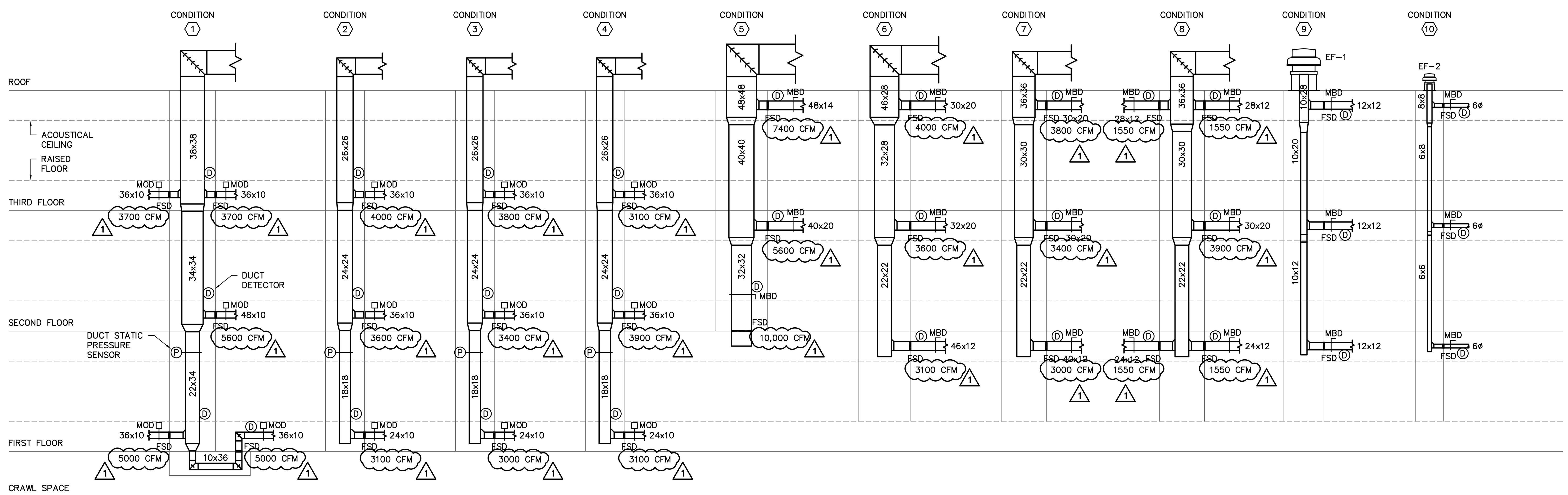
Project Title
USC HEALTH SCIENCES RENOVATION
STATE PROJECT NO.: H27-6052-AC
COLUMBIA, SOUTH CAROLINA

Arch. Project No.	Date
U-676-09	11/06/13

Revision
Addendum No. 3

Reference
drawing no. M1.4

Sketch No.
SK-M-3



NOTE:
COORDINATE WITH ACCESS PANEL LOCATIONS AS SHOWN ON ARCHITECTURAL PLANS A1.1, A1.2 AND A1.3.

1 DUCT RISER SCHEMATIC
M3.2 NO SCALE

Swygert & Associates
CONSULTING ENGINEERS

The Boudreaux Group
Interdisciplinary Design Architecture Interiors Planning

A/E Seal

Project Title
UNIVERSITY OF SOUTH CAROLINA
HEALTH SCIENCES RENOVATION
STATE PROJECT NO. H27-6052-AC
CONSTRUCTION DOCUMENTS
COLUMBIA, SOUTH CAROLINA

Project No. U-676-09
Date 10.01.13
Drawn By DEM
Checked By WCL

Revisions

No.	Name	Date
1	ADDENDUM NO. 3	11.06.13

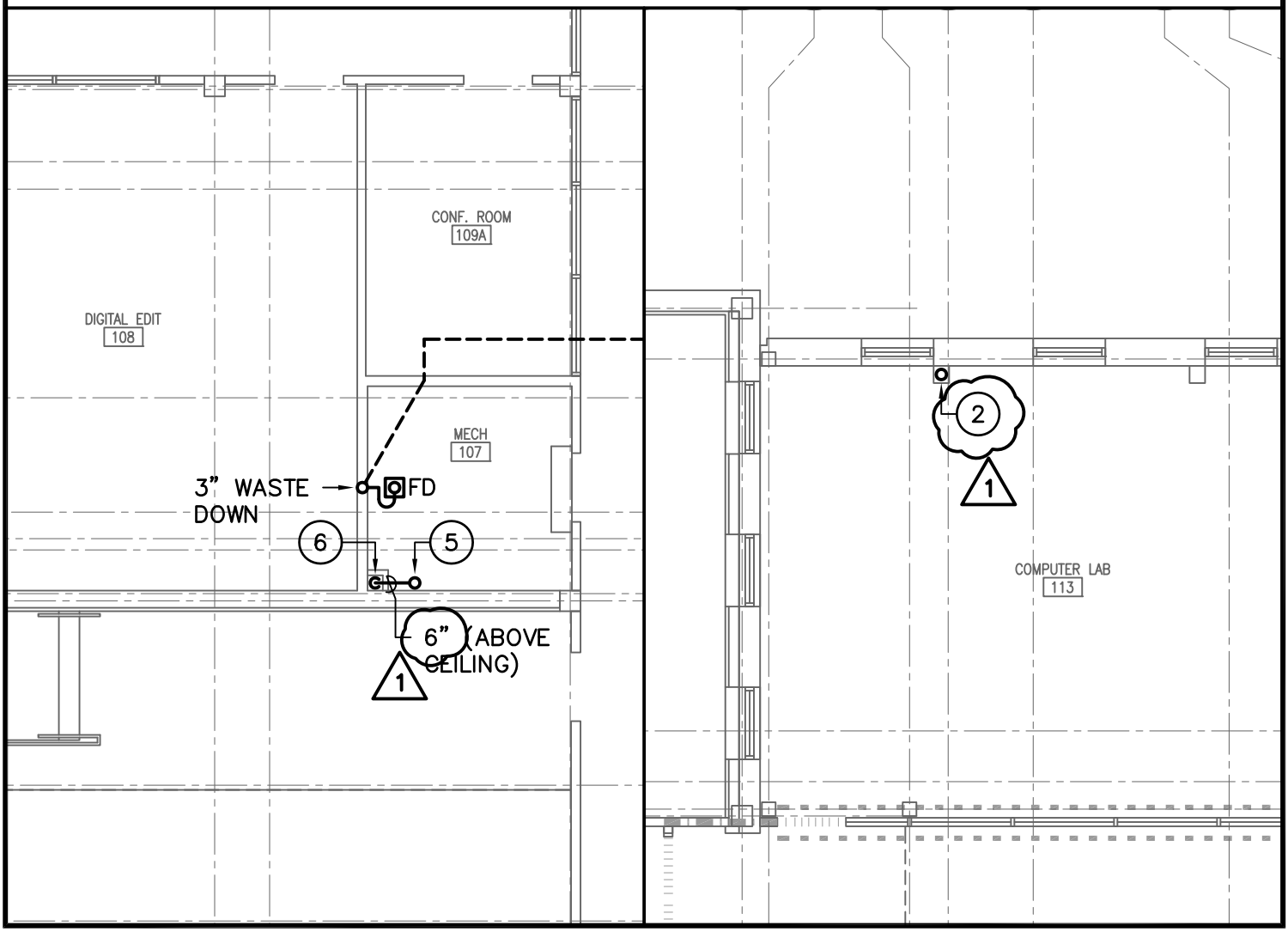
Drawing Title
RISER SCHEMATICS

Drawing No.
M3.2

N:\PROJECTS\09345\DRAWINGS\HVAC\09345-M3_2.dwg

NOTES TO SHEET

1. 6" STORM DRAIN LINE FROM ABOVE AND DOWN.
2. 4" STORM DRAIN LINE FROM ABOVE AND DOWN.
3. 6" STORM DRAIN LINE FROM ABOVE.
4. 6" STORM DRAIN LINE DOWN.
5. 6" STORM DRAIN LINE FROM ABOVE.
6. 6" STORM DRAIN LINE DOWN.
7. WASTE DISCHARGE FROM LAVATORIES SHALL OFFSET AROUND CONCRETE BEAM BELOW AS REQUIRED. SEE 9/A3.3.



The Boudreaux Group
Interdisciplinary Design Architecture Interiors Planning
1330 Lady Street (29201)
P.O. Box 5695
Columbia, SC 29250
803 799 0247 p
803 771 6844 f
info@boudreauxgroup.com

Project Title
USC HEALTH SCIENCES RENOVATION
STATE PROJECT NO.: H27-6052-AC
COLUMBIA, SOUTH CAROLINA

Arch. Project No.	Date
U-676-09	11/06/13

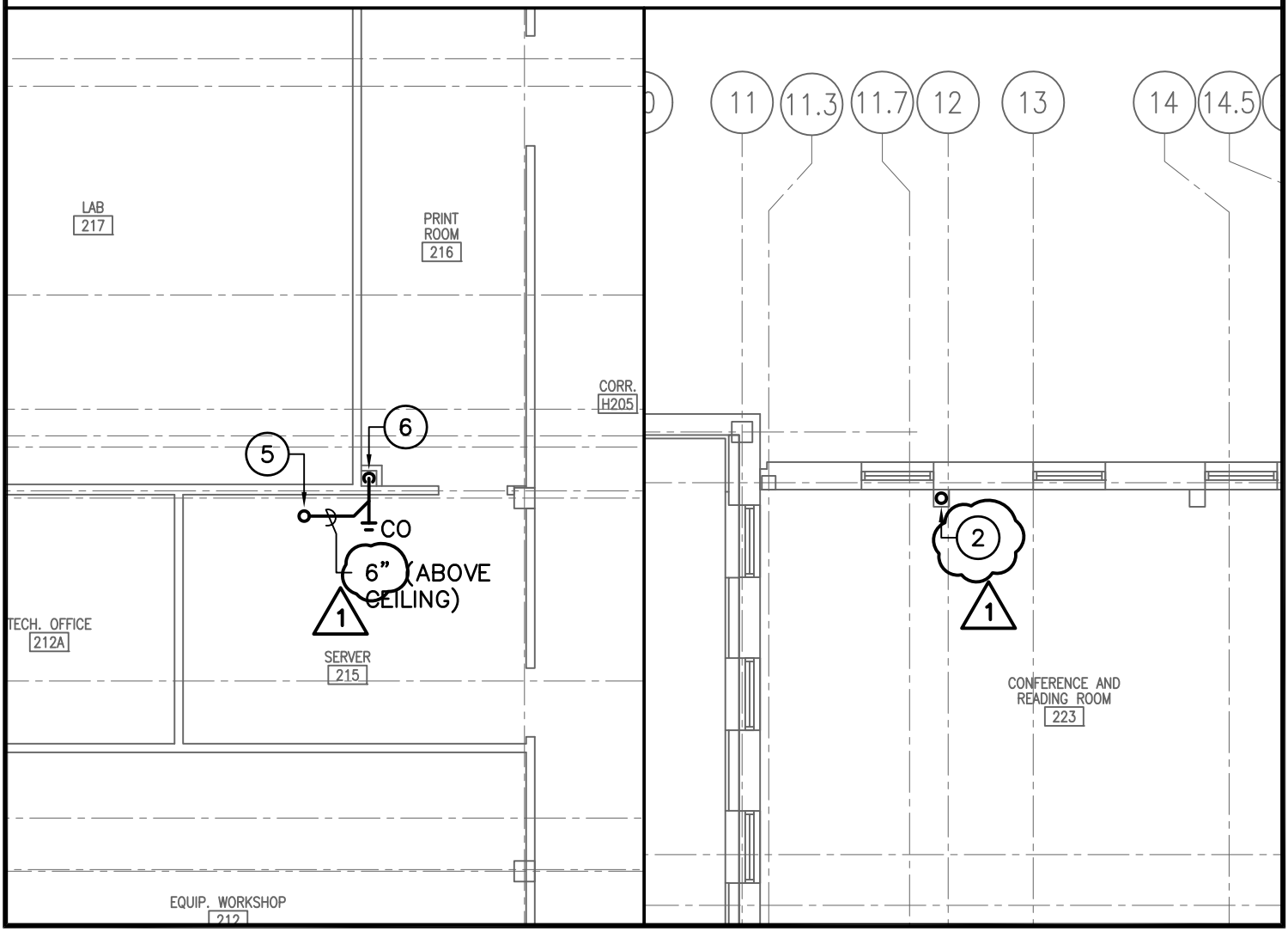
Revision: Addendum No. 3

Reference: drawing no. P1.1

Sketch No.: **SK-P-2**

NOTES TO SHEET

1. 6" STORM DRAIN LINE FROM ABOVE AND DOWN.
2. 4" STORM DRAIN LINE FROM ABOVE AND DOWN.
3. 6" STORM DRAIN LINE FROM ABOVE.
4. 6" STORM DRAIN LINE DOWN.
5. 6" STORM DRAIN LINE FROM ABOVE.
6. 6" STORM DRAIN LINE DOWN.
7. WASTE DISCHARGE FROM LAVATORIES SHALL OFFSET AROUND CONCRETE BEAM BELOW AS REQUIRED. SEE 9/A3.3.

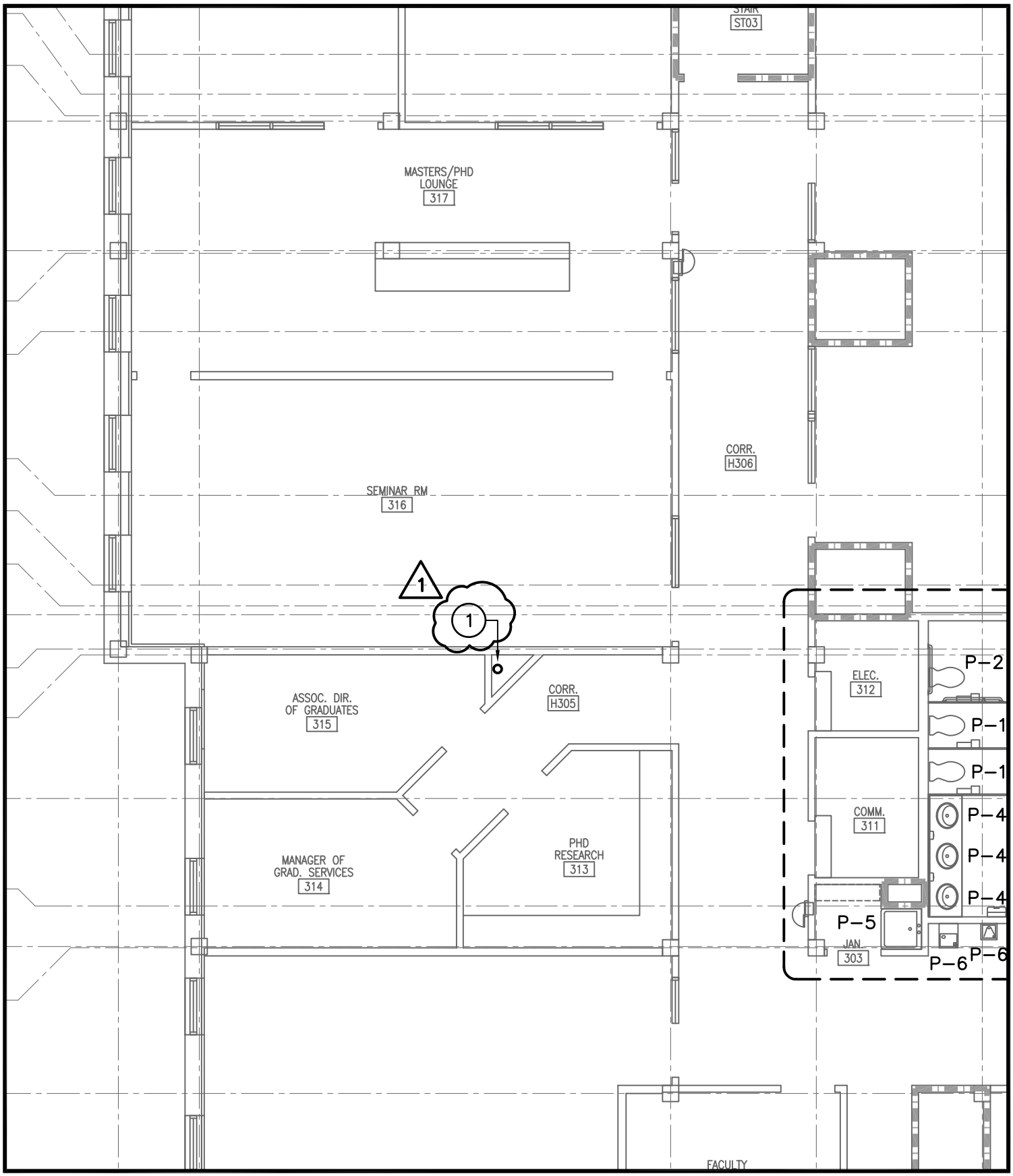


The Boudreaux Group
Interdisciplinary Design Architecture Interiors Planning
1330 Lady Street (29201)
P.O. Box 5695
Columbia, SC 29250
803 799 0247 p
803 771 6844 f
info@boudreauxgroup.com

Project Title
USC HEALTH SCIENCES RENOVATION
STATE PROJECT NO.: H27-6052-AC
COLUMBIA, SOUTH CAROLINA

Arch. Project No.	Date
U-676-09	11/06/13

Revision: **Addendum No. 3**
Reference: **drawing no. P1.2**
Sketch No.: **SK-P-3**



The Boudreaux Group

1330 Lady Street (29201)
P.O. Box 5695
Columbia, SC 29250
803 799 0247 *p*
803 771 6844 *f*

Interdisciplinary Design Architecture Interiors Planning

info@boudreauxgroup.com

Project Title

USC HEALTH SCIENCES RENOVATION

STATE PROJECT NO.: H27-6052-AC

COLUMBIA, SOUTH CAROLINA

Arch. Project No.	Date
U-676-09	11/06/13

Revision

Addendum No. 3

Reference

drawing no. P1.3

Sketch No.

SK-P-4

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

Items added by Addendum No. 3 are bold and italic.

1.2 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed. All door hardware must be in compliance with ADA and ANSI A117.1.

B. This Section includes the following:

1. Hinges.
2. Lock cylinders and keys.
3. Lock and latch sets.
4. Bolts.
5. Exit devices.
6. Push/pull units.
7. Closers
8. Overhead holders
9. Miscellaneous door control devices
10. Door trim units.
11. Kick plates
12. Weatherstripping for exterior doors.
13. Sweeps.
14. Sound stripping for interior doors.
15. Thresholds
16. Coordinators
17. Astragals
18. Key control system
19. ***ADA Operators and actuators***
20. ***Key Cabinet***
21. ***Electrified Hardware***

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 8 Section "Standard Steel Doors and Frames" for silencers integral with hollow metal frames.
2. Division 8 Section "Flush Wood Doors" for factory pre-fitting and factory pre-machining of doors for door hardware.

D. Products furnished but not installed under this Section include:

1. Hardware for Storefront Entrance Doors as identified in Hardware Schedule.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.

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.

C. Final hardware 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 "hardware sets" indicating complete designations of every item required for each door or opening. 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 set cross-referenced to indications on Drawings both on floor plans and in 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.

2. Submittal Sequence: Submit final schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work that 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 schedule.

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.

1.4 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

B. Supplier Qualifications: An architectural door hardware supplier, with warehousing facilities in South Carolina, that can supply door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an architectural hardware consultant (AHC) with a minimum of five years experience who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

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

2. The certified architectural hardware consultant (AHC) shall prepare all hardware and wiring diagrams. This supplier is responsible for proper coordination of all finished hardware with related sections to insure compatibility of products. The Hardware Supplier shall attend all coordination meetings regarding hardware application with related trades.

C. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by UL, Warnock Hersey, FM, or other testing and inspecting organization acceptable to authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels. ***Provide door seals to meet Positive Pressure Testing UL10C and UBC7-2 as required.***

D. Americans with Disabilities Act (ADA): Provide and install finish hardware in accordance with requirements of Americans with Disabilities Act (ADA). Specifically, comply with ADA sections relating to accessibility and usability.

Notification of Architect: Before installation of finish hardware, notify Architect of any Contract Document requirements that are suspected to be in noncompliance with ADA.

ANSI Standards for Physically Handicapped: Finish Hardware shall comply with: "American National Standard for Buildings and Facilities – Providing Accessibility and Usability for Physically Handicapped People" (ANSI A117.1-1986) 1986 edition, by American National Standards Institute, Inc.; New York, New York. Before installation of finish hardware, Notify Architect of any Contract Document requirements that are suspected to be in noncompliance with ANSI A117.1-1986. In addition, before installation of finish hardware, notify Architect of conflicting requirements of ADA and ANSI A117.1-1986.

E. Where emergency exit devices are required on fire-rated doors (with supplementary marking

on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL / WHI or FM label on exit devices indicating "Fire Exit Hardware".

F. Thru bolt door closers and exit devices. Verify and coordinate proper blocking if provided from the door manufacturer for hardware attachment on doors.

G. Unless otherwise specified, provide lever handle locksets ADA compliant.

H. Pre-Installation Meeting: The GC shall initiate and conduct a jobsite meeting with the hardware supplier and the Installer, and all related trades for mechanical and electrical hardware. This meeting shall convene at least one month prior to commencement of the related work, specifically, the electrical rough-in for coordination of electrified hardware applications. All approved shop drawings, wiring diagrams, and schedules shall be made available to all related trades as required for work to be performed. The Owner's representative shall attend all pre-install meetings. One month prior to the installation of the hardware, the hardware supplier shall, with the assistance of the manufacturer's representative, provide review/training to the Installers of the following products: closers, exit devices, locks, and electrified hardware.

I. Existing door/frame conditions: The GC and all related trades shall review the existing conditions prior to ordering and installing any new hardware. Notify the architect of any exceptions. All existing doors scheduled to be re-worked and re-used shall be reviewed with the Finish Hardware Submittal and templates before the doors are prepped for the new hardware and re-hung in the door opening.

1.5 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware schedule.

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

C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of 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

1.6 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and

replacement of door hardware.

1.7 SUBMITTALS

A. Product Data: Submit manufacturers technical product data for each item of hardware in accordance with Division-1 section "Submittals". Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.

B. Vertical Hardware Schedule: Submit final hardware schedule in manner indicated below. Coordinate hardware with doors, frames, and related work to ensure proper size, thickness, hand, function and finish of hardware.

1. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

a. Type, style, function, size and finish of each hardware item.
b. Name and manufacturer of each item.
c. Fastening and other pertinent information.
d. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door schedule.
e. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
f. Door and frame sizes and materials.
g. Keying information.
h. Maintain the same Set/Heading numbering from Part 3 of this section, or reference to the Spec Set number in the Heading.
i. Reference door numbers from the door/frame schedule in the plan set.
j. Mounting locations for hardware.
k. One Heading/Set per page
l. Operational Description for all specified electrical hardware shall be included with each Heading/Set.

C. 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 finish hardware, and other information essential to the coordination review of hardware schedule.

D. Templates: Furnish hardware templates to each fabricator of doors, frames, and other work being factory-prepared for the installation of hardware. Upon request, check shop drawings of other such others work to confirm that adequate provisions are made for proper location and installation of hardware.

E. Operations and Maintenance Data: After installation, representative templates, instructions sheets and installation details shall be provided to the owner when building is accepted. Include one copy of each hardware schedule, keying and wiring diagrams.

F. Manufacturer's Catalog Cuts: Submit manufacturer's cut/catalog sheets on all hardware items and any required special mounting instructions with the hardware schedule.

G. Wiring Diagrams: Provide complete wiring diagrams for each opening requiring electrified hardware. Provide a copy with each hardware schedule submitted after approval. Supply a copy with delivery of hardware to job site and another copy to the Owner at time of job completion. All electrical components shall be listed by opening in the hardware submittals. Include an operational description with each diagram.

H. Operational Descriptions: Provide a complete operational description of the specified electrified hardware components for each opening, and include the description under the hardware set/heading in the hardware submittal. Operational descriptions shall detail how each electrified component functions within the opening, incorporating all conditions of ingress and egress. Review these descriptions with all related trades at the Pre-Install meetings.

I. Elevation Drawings: Provide elevation drawings of electronic hardware and systems identifying locations of the system components with respect to their placement in the door opening. Provide a copy with each hardware schedule submitted for approval. Supply another copy to the Owner upon project completion. Include an operational description with each drawing.

1.8 WARRANTY

A. All Door closer shall include a ten (10) year manufacturers' warranty against defects in materials and workmanship.

B. Exit Devices shall include a three (3) year warranty. ADA operators shall include a two (2) year warranty.

C. Hinges:
- ***1. Life of Building.***
- ***2. Electrified Hardware: one (1) year***
- ***3. Other Hardware: three (3) years.***

PART 2 - PRODUCTS

2.1 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the "Hardware Schedule" at the end of this Section. Products are identified by using hardware designation numbers of the following:

1. Manufacturer's Product Designations: The product designation and name of one manufacturer are listed for each hardware type required for the purpose of establishing minimum requirements. **Provide either the product designated or, where more than one manufacturer is specified under the "Manufacturers" below for each hardware type, the comparable product of one of the other manufacturers, or an equal manufacturer**

not listed, that complies with requirements.

a. **Provide Best locks and cores or locks that can receive Best cores to be compatible with University of South Carolina standard keying system.**

2. ANSI/BHMA designations used elsewhere in this Section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this Section.

a. Butts and Hinges: ANSI/BHMA A156.1.
b. Bored and Preassembled Locks and Latches: ANSI/BHMA A156.2.
c. Exit Devices: ANSI/BHMA A156.3.
d. Door Controls - Closers: ANSI/BHMA A156.4.
e. Auxiliary Locks and Associated Products: ANSI/BHMA A156.5.
f. Architectural Door Trim: ANSI/BHMA A156.6.
g. Template Hinge Dimensions: ANSI/BHMA A156.7.
h. Door Controls - Overhead Holders: ANSI/BHMA A156.8.
i. Interconnected Locks and Latches: ANSI/BHMA A156.12.
j. Mortise Locks and Latches: ANSI/BHMA A156.13.
k. Auxiliary Hardware: ANSI/BHMA A156.16.
l. Self-Closing Hinges and Pivots: ANSI/BHMA A156.17.
m. Materials and Finishes: ANSI/BHMA A156.18.

3. Manufacturers:

a. Best Access Systems
b. Corbin Russwin Architectural Hardware
c. Dorma Architectural Hardware
d. Folger Adam Security, Inc.
e. Hager Companies
f. SARGENT Manufacturing Company
g. Schlage Commercial Lock Division
h. Yale Commercial Locks and Hardware
i. Or Equal

2.2 MATERIALS AND FABRICATION

A. 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, except as otherwise specified.

B. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

C. Furnish screws for installation with each hardware item. Provide 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.

D. Hardware Finish: Primary finish to be Satin Chrome 626, US26D. Where finish availability is limited with certain products, Satin Nickel 619-646, US15 and Satin Stainless Steel 630, US32D are acceptable compatible alternative finishes.

E. General:

1. Hand of door: Drawings show direction of swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

2. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.

3. Manufacturer's identification will be permitted on rim of lock cylinders only.

4. Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of type specified are available with concealed fasteners. Use thru-bolts for closer and exit devices. Coordinate wood door blocking at all wood doors and all fire-rated wood doors. Provide sleeves for each thru-bolt or use sex screw fasteners.

5. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.3 HINGES, BUTTS, AND PIVOTS

A. Templates: Provide only template-produced units.

B. Screws: Provide 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 wood screws.
3. For fire-rated wood doors install #12 x 1-1/4-inch (32-mm), threaded-to-the-head steel wood screws.
4. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

1. Out-Swing Exterior Doors: Nonremovable pins.
2. Out-Swing Corridor Doors with Locks: Nonremovable pins.
3. Interior Doors: Nonrising pins.
4. Tips: Flat button and matching plug, finished to match leaves.

5. Non-ferrous Hinges: Stainless steel pins

D. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90 inches (2250 mm) or less in height and one additional hinge for each 30 inches (750 mm)

of additional height.

1. Fire-Rated Doors: Not less than 3 hinges per door leaf for doors 86 inches (2150 mm) or less in height with same rule for additional hinges.

E. Continuous Hinges: Provide concealed, non-handed, full height hinges with interlocking cover and symmetrically template hole pattern made from extruded aluminum. Finish shall be BHMA 628. minutes). Field modifications for cutting shall be permitted up to 6" from the bottom.

2.4 LOCK CYLINDERS AND KEYING

A. General: Supplier will meet with Owner to finalize keying requirements and to obtain final instructions in writing.

B. Comply with Owner's instructions for masterkeying and, except as otherwise indicated, provide individual change key 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 cylinder manufacturer's key symbol, and notation, "DO NOT DUPLICATE."

C. Key Material: Provide keys of nickel silver only.

D. Key Quantity: Furnish 3 change keys for each lock.

1. Deliver permanent keys to Owner's representatives.

2.5 KEY CONTROL SYSTEM

A. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required for the Project.

1. Provide complete cross index system set up by key control manufacturer, and place keys on markers and hooks in the cabinet as determined by the final key schedule.
2. Provide hinged-panel type cabinet for wall mounting, lockable.

B. Provide a surface mounted stainless steel key lock box for fire department use (coordinate location and mounting height with architect).

2.6 LOCKS, LATCHES AND BOLTS

A. Locksets shall be as specified: Mortise locksets shall meet the standards of ANSI/BHMA A156.13 Series 1000 ,Grade 1 Operational and Security. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with ANSI curved lip extended to protect frame, finished to match hardware set. Where specified, provide a replaceable breakaway spindle mechanism residing inside the lock chassis. The lock case shall be full

wrapped heavy gauge steel with all metal zinc dichromate plated working parts. Lock case shall be universal function type and allow for field reversible handing without opening the lock case. Lever rotation shall be in both directions for ease of use, and allow for independent lever rotation.

B. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.

C. Lock Throw: Provide solid stainless steel 1 ½" deadbolt with 1" minimum throw. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

D. Provide 3/4" minimum throw on latch bolts.

E. Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze or stainless steel, with minimum 12" long rod for doors up to 7'-0" in height. Provide longer rods as necessary for doors exceeding 7'-0" in height.

F. Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position.

2.7 PULLS/ PUSH PLATES

A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation; through-bolted for matched pairs, but not for single units. Furnish type and size as specified in Hardware Sets.

2.8 CLOSERS AND DOOR CONTROL DEVICES

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.

B. Closers: All door closers shall be of one manufacturer to provide for proper installation and servicing after installation. All closers shall be inspected after installation by a factory representative to ensure proper adjustment and operation. A report shall be filed with the architect after said visit has been made. Closer shall carry a manufacturer's TEN YEAR WARRANTY for hydraulic units and 2-year warranty for electrical and/or handicap power assist door closers against manufacturing defects and workmanship. PRV [pressure relief valves] are not acceptable.

C. Parallel Arm Closers: Shall incorporate one piece solid forged steel arms with bronze bushings. 1-9/16" x 1/2" steel stud shoulder bolts, shall be incorporated in regular arms, hold open arms, arms with stop built in, arms with hold open and stop built in. All other closers to have forged steel main arms for strength, and durability.

D. Built-In Stops: Where closers with built-in positive stops are used, the stops shall be of one piece cast malleable iron material with built in springs. Where required, the hold-open assembly handle for these stops shall rotate on ball bearings.

E. All door closers shall pass UL10C positive pressure fire test.

F. Non-sized: All exterior closers shall be non-sized to provide a full range of Size 1 to 5 closing power, and shall be handed.

G. Hydraulic Fluid: All closers, with the exception of interior electronic closers, shall utilize temperature stable fluid capable of withstanding temperature ranges of 120 degrees F. to -30F. without requiring seasonal adjustment of closer speed to properly close the door. Fluid shall be nonflammable.

H. All closers shall have a powder coat finish on closer body, arm, cover and adapter plate. Furnish special rust inhibiting pretreat coating, as specified, for closer body, arm, cover and plates before the powder coat finish.

I. Provide all drop plates, shoe supports, templates, etc. to properly mount closers according to manufacturers' recommendations.

2.9 EXIT DEVICES

A. General: All devices shall be of one manufacturer to provide for proper installation and servicing. Devices shall be furnished non-handed and capable of direct field conversion for all available trim functions. All devices shall carry a three year warranty against manufacturing defects and workmanship. All devices shall be push-through touch pad design as specified. No exposed touch bar fasteners, no exposed cavities when operated.

B. Furnish all touch-pad type devices with stainless steel touch bars. Plastic parts are not acceptable. Dogging mechanism shall be mechanical hook type with no plastic dogging cams.

C. Furnish all touch-pad type exit devices with deadlocking latch bolts. Latchbolts shall be moly-coated to reduce friction against the strike.

D. Furnish all touch-pad exit devices with heavy duty metal alloy construction, with horizontal adjustment to provide flush alignment with the device cover plate. End caps shall be flush with device housing with no raised edges.

E. Furnish roller strikes with all rim exit devices.

F. Furnish stabilizers <u>similar and equal</u> in function and quality to Von Duprin 154 with all removable mullions.

G. Outside Trim: Shall be heavy duty type and fastened by means of concealed welded lugs and thru-bolts from the inside. Trim shall be forged brass with a minimum average thickness on the escutcheon of .130. Plate with trim shall be brass with minimum average thickness of .090 and have forged pulls. Where Lever Handles are specified provide product <u>similar and equal</u> to 996 type Break Away Trim. Where outside trim is specified, furnish trim that thru-bolts directly to the exit device center case.

H. Furnish cylinders with all lockable exit devices.

I. Furnish required filler plates and shim kits for flush mounting of exit devices on all doors requiring same.

J. Springs: Compression type only. Torsion springs are not acceptable.

K. Electrified Functions: Electric Latch Retraction shall be provided with a continuous duty solenoid, retracting the latch bolt for momentary latch retraction, or may be held retracted for extended periods of time. Electric operated trim device shall be furnished as Fail-Safe. When the power is off, the trim is unlocked for free entry. The trim may then be relocked

electrically by applying power.

2.10 DOOR TRIM UNITS

A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screws.

B. Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.

C. Fabricate protection plates (armor, kick or mop) not more than 2" less than door width on stop side and not more than 1" less than door width on pull side, x the height indicated.

D. Metal Plates: Stainless steel, .050" (U.S. 18 ga.), bevel 3 edges: top and both sides.

2.11 GASKETS, DOOR BOTTOMS

A. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf, except where stated the door manufacturer will provide the weatherstripping.. Provide type, sizes and profiles shown or scheduled. Provide non-corrosive fasteners as recommended by manufacturer for application indicated. All gaskets for fire label doors shall comply the door manufacturers label approvals. Fire-label wood doors shall be furnished as "Category A" type with the intumescent seal, integral to the door construction.

B. Sound seal: Provide types as indicated for sound isolation. As indicated in the Door Schedule each door shall receive an auto-matic door bottom and double row of bulb-type adhesive gasket.

2.12 THRESHOLDS

A. General: Except as otherwise indicated provide standard aluminum threshold unit of type, size and profile as shown or scheduled.

B. Provide thresholds that are 1" wider than depth of frame.

C. Provide thresholds with return closed ends where specified in Hardware Sets.

2.13 DOOR SILENCERS

A. All hollow metal frames shall have gray resilient type silencers. Quantity (3) on single doors and quantity (2) on pair of doors.

2.14 ELECTRIFIED HARDWARE

A. Where scheduled, supply electrified function as specified. Electric exit devices shall be furnished with electric latch retraction feature or electrified locking for outside trim. All electric devices shall be free egress at all times. The Access Control System, furnished by the Owner's Security Integrator, shall allow for credentials, cardreaders, monitoring, alarms, and client software. All wiring, junction boxes, and final connections for electrified

hardware shall be furnished and installed by the electrical contractor.

B. Electrically operated locking devices shall be connected to the building fire and smoke/heat alarm systems as required for the specified function. Activation of alarm system shall disengage electric locking mechanism, allowing free, unrestricted egress through opening.

C. Coordinate installation of electrically operated hardware to insure proper size wire is used to power load (s).

1. Voltage drop shall not exceed 5% of load's stated voltage.

2. Wire length shall equal distance to load and back to supply (lock @ 50ft from power supply; wire length = 100 ft.) Two loads powered by on pair of wires draw double current and have half (50%) of resistance.

Wire Size	*Resistance Per 1,000 Feet*
12 Gauge	*1.6 OHM*
14 Gauge	*2.5 OHM*
16 Guage	*4.1 OHM*
18 Gauge	*6.4 OHM*
20 Gauge	*10.1 OHM*
22 Gauge	*16.0 OHM*

D. Furnish electrically operated hardware with power supply units, junction boxes, and other accessories needed for a complete, efficient installation. Coordinate electrified hardware requirements with all related trades at the Pre-Installation meeting, prior to project electrical rough-in.

E. Components Specified:

1. Power Transfers: Furnish type recessed into the door and frame to allow electrical power to pass from door to frame without the use of door cords or butt type transfer hinges for electric latch retraction function. Furnish manufacturer's back box of zinc dichromated treated steel , both power transfer and thru-wire butt hinge. Back boxes shall be provided to the hollow metal frame manufacture for installation on the frame prior to frame shipped to jobsite.

2. Electric Butt Hinge:

Electric Butt hinges shall comply with requirements for size, quantity, type, tcs., as set forth for non-electric butt hinges. Provide the number of electrified hinges as required for the opening, as close to the load to receive power. Electric hinges shall have a motar box fastened to the frame prior to installing the frame in the wall. Electric hinge shall permit passage of a constant flow of current from the jamb to door, regardless of door position. Provide the number of wires needed by the electro-mechanicl hardware it supports, plus two additional wires for future consideration. Continuous circuit hinge to have wires concealed with 12" lead.

3. Power Supply: Power Supply shall be tested and certified to meet UL294. Furnish type required for the specified electrical function. Power supply shall have a constant output rating at both 12v and 24v settings. Furnish as universal 120VAC to 240VAC input, and include polarized option board connectors. The fire alarm interface board shall allow outputs to be configured as switched (power cut) or unswitched (power continues) when a signal is provided.

4. Door Position Switch: Furnish concealed type in frame and door.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hardware installer is to provide the installation of all items identified in the Hardware Schedule except where indicated to be installed by other subcontractors.

B. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.

C. 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.

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

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 doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

G. Weather-stripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

H. Products furnished but not installed under this specification included:

1. Cylinders for locks for Storefront Entrance Doors.

F. Adjust and reinforce attachment substrate for proper installation and operation:

1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc.

G. Locate floor stops not more than 4 inches from the wall.

H. Verify actual locations of wiring connections before electrified door hardware is installed.

I. Examine doors and frames with the hardware installer for compliance with requirements for installation tolerances, labeled fire door assembly, wall and floor construction, and other conditions affecting door performance.

J. Existing door/frame conditions: The GC and all related trades shall review the existing conditions prior to ordering and installing any new hardware. Notify the architect of any exceptions. All existing doors scheduled to be re-worked and re-used shall be reviewed with the Finish Hardware Submittal and templates before the doors are prepped for the new hardware and re-hung in the door opening.

3.2 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 at no expense to the Owner.

B. Clean adjacent surfaces soiled by hardware installation.

C. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

D. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work 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.

E. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative[s] of the Finish Hardware manufacturer[s], 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 Owners Agent /

3.3 HARDWARE SCHEDULE

A. General: The hardware product materials for each door indicated under the Hardware Schedule are to be provided and installed and are to comply with requirements of this specification. Hardware Set Numbers are indicated in the “Hardware Schedule” attached herein to this specification and in the door schedule.

1. Hardware sets indicate quantity, item, product designation, size, finish and color, and manufacturer as basis of design.

END OF SECTION 087100