

USC Byrnes Mechanical - Electrical Infrastructure Upgrades COLUMBIA, SC

A/E Project #14024.01
October 6, 2014
CONSTRUCTION DOCUMENTS

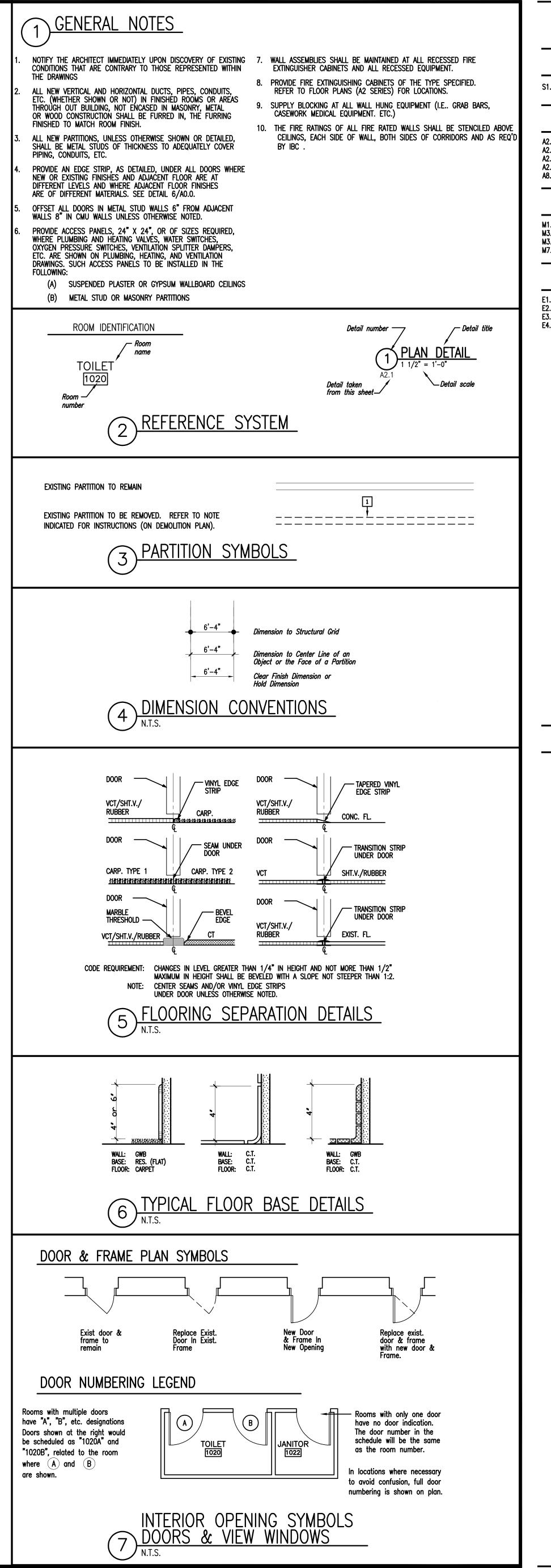
H27-Z153

Prepared by:



ASSOCIATES, INC.

Architects/Engineers/Planners 1201 Main Street Columbia, South Carolina 29201-3299 tel. 803-256-0000 fax 803-255-7243



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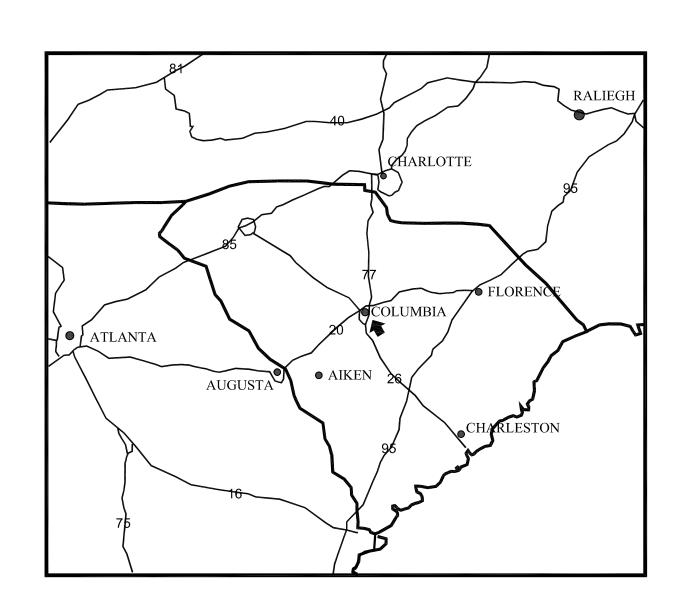
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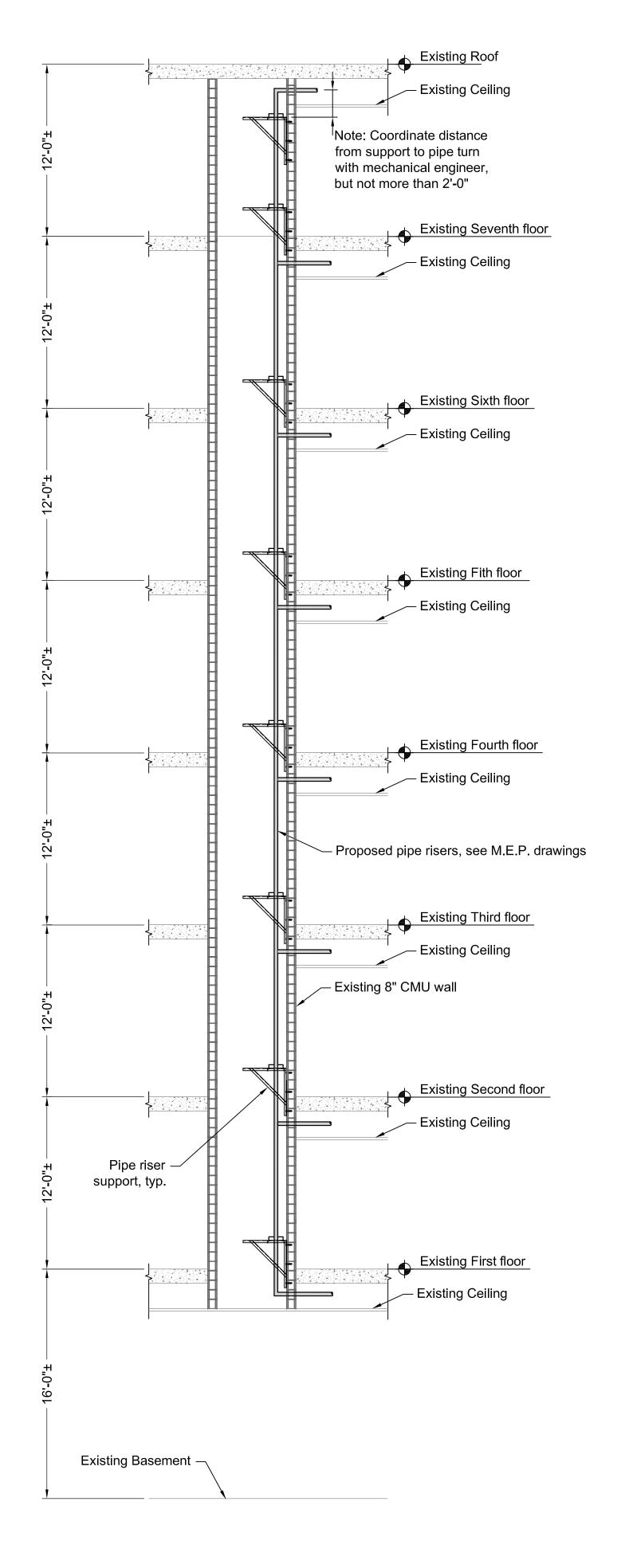
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KEY PLAN



SET NO.



General Notes:

1. Design Specifications: International Building Code (2012 Edition).

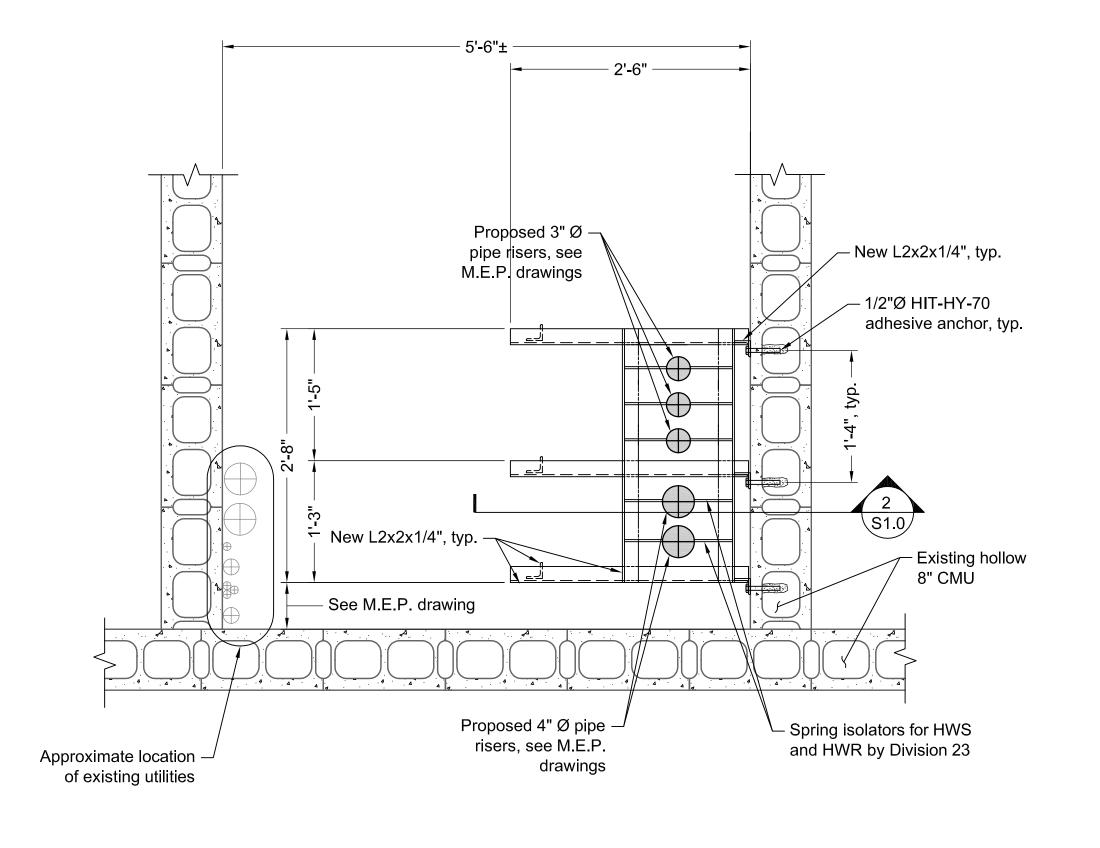
Design Loads: Dead Load: actual

Sds = 0.408Ip = 1.0

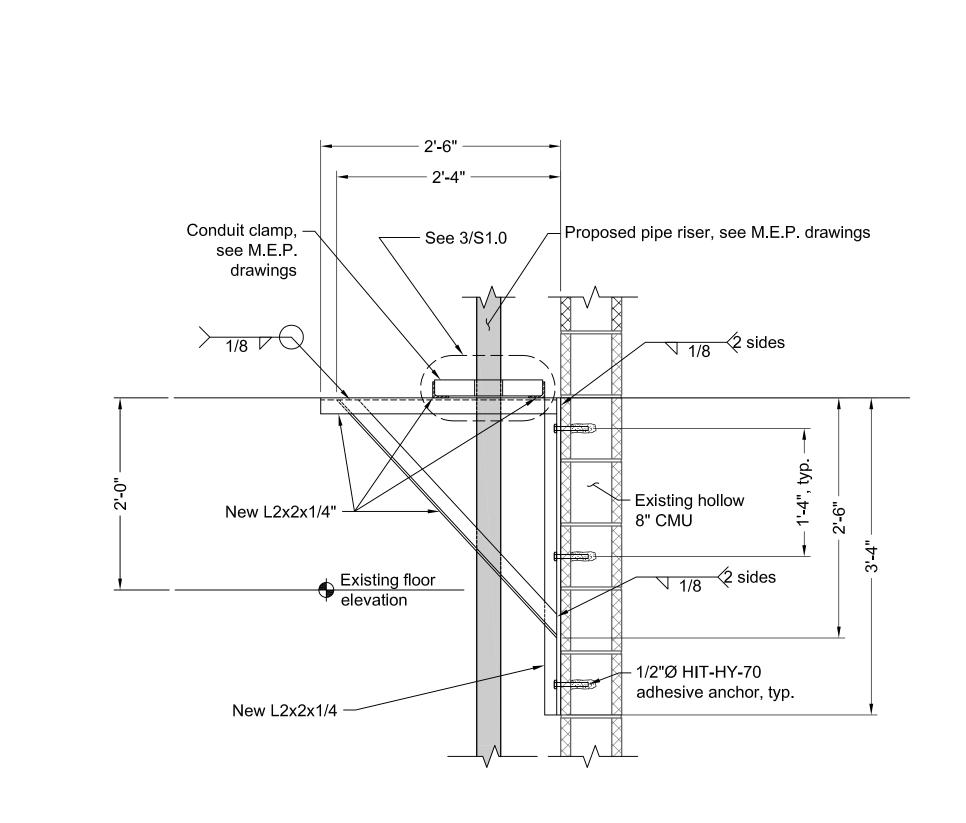
- 2. In case of a discrepancy in dimensions or details, between Mechanical and Electrical Structural drawings, not affecting strength, the Mechanical and Electrical plans shall govern. For dimensions and details not shown, see Mechanical and Electrical plans.
- 3. The construction falsework design (if any) is the responsibility of the Contractor. The design shall be performed by a Registered Engineer and shall be submitted for approval before commencing of the work.
- 4. Where a detail is shown on Structural drawings for one condition, it shall apply to all similar or like conditions, unless noted or shown otherwise on plans.
- 5. All items shall be tightly anchored or attached square, plumb, and true, or in other planes and shapes as shown on the drawings. Joints shall be tight, even,and free of offsets. No field altering of any members will be allowed that will cause them not to be in accordance with the
- drawings and specifications, without written approval of the Project Engineer. 6. The dimensions shown with a suffix "±" are approximate and shall be verified by the
- Contractor before fabrication.
- 7. If the Contractor finds a difference between these drawings & existing conditions, or finds any other conditions which prohibit execution of the work as directed in these drawings, the Contractor shall notify the Engineer immediately.
- 8. Any revision/modification to the original design during the shop drawing process, the Contractor shall clearly cloud line all the changes and shall receive approval from the Engineer in writing before fabrication. Any costs associated with correcting the unapproved change shall be at the Contractor's expense.

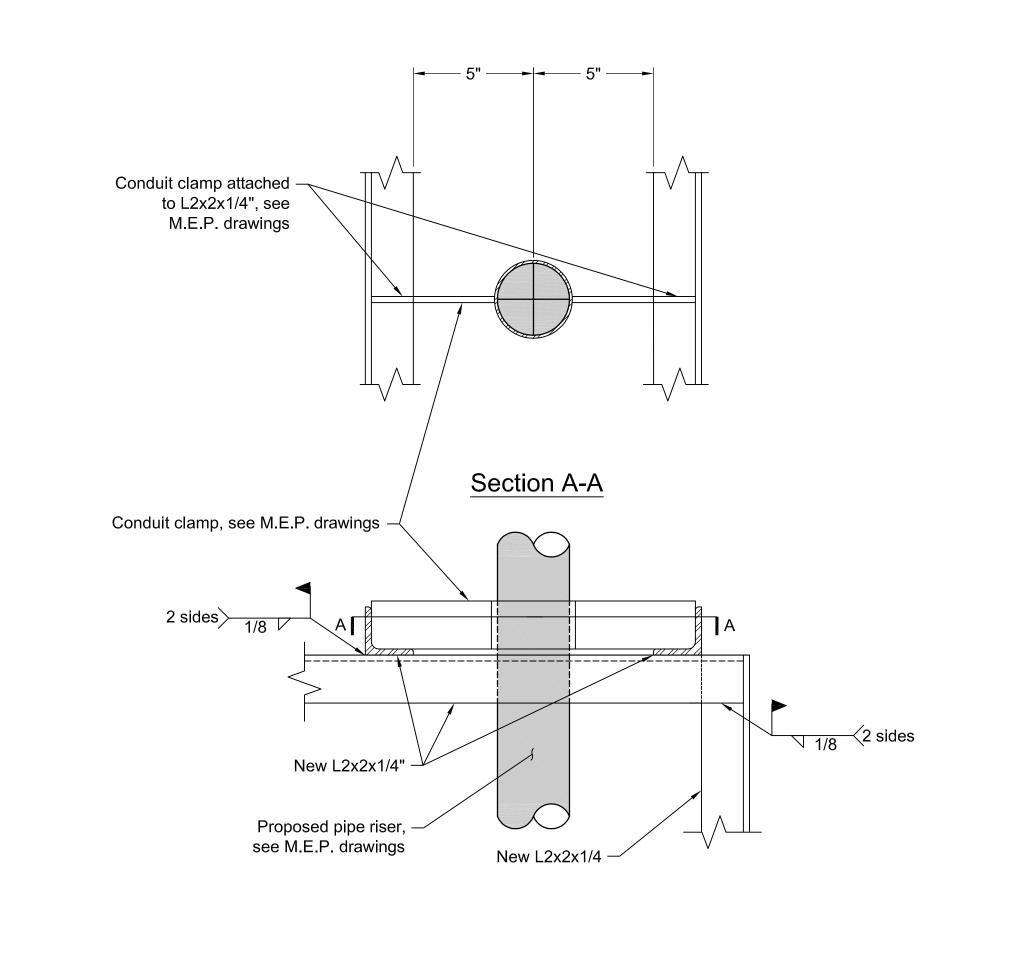
Structural and Miscellaneous Steel

- 1. All structural and miscellaneous steel shall conform to the Thirteenth Edition of the AISC "Specification for Structural Steel Buildings" and all its supplements, and to the AISC "Code of Standard Practice for Steel Buildings and Bridges".
- 2. All structural steel shall conform to ASTM A-36, FY=36,000 PSI unless otherwise noted. 3. All welded connections shall be done with E70XX electrodes with 3/16" min. material, unless otherwise noted. All welding shall comply with AWS D1-1 structural welding code the latest
- 4. The structural steel shall have one coat of anti-rust paint. Prior to painting, all steel surfaces shall be prepared in accordance with SSPC-SP3.
- 5. No openings in beams shall be permitted without the written permission of the engineer.
- 6. The use of a gas-cutting torch in the field for cutting holes or for correcting fabrication errors will not be permitted on structural framing members except w/ the written approval of the Engineer
- 7. An independent inspection agency shall be employed by the owner and approved by the engineer to inspect the structural steel in the field and verify that it conforms to the requirements of the contract documents.



1 - Plan Scale: 1" = 1'-0"







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CONSTRUCTION 743 GREENE STREET COLUMBIA, S.C. 29208 project name USC BYRNES MECHANICAL-ELECTRICAL INFRASTRUCTURE **UPGRADES** state project number

H27-Z153 project number

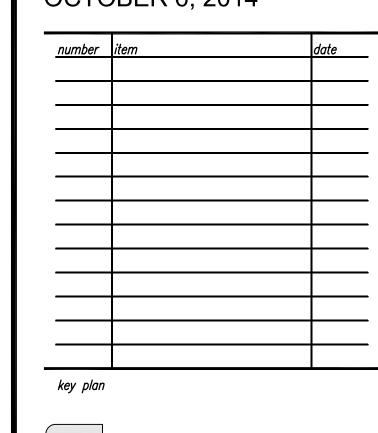
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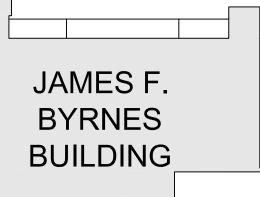




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OCTOBER 6, 2014







STRUCTURAL PIPE SUPPORT

Scale: 3" = 1'-0"

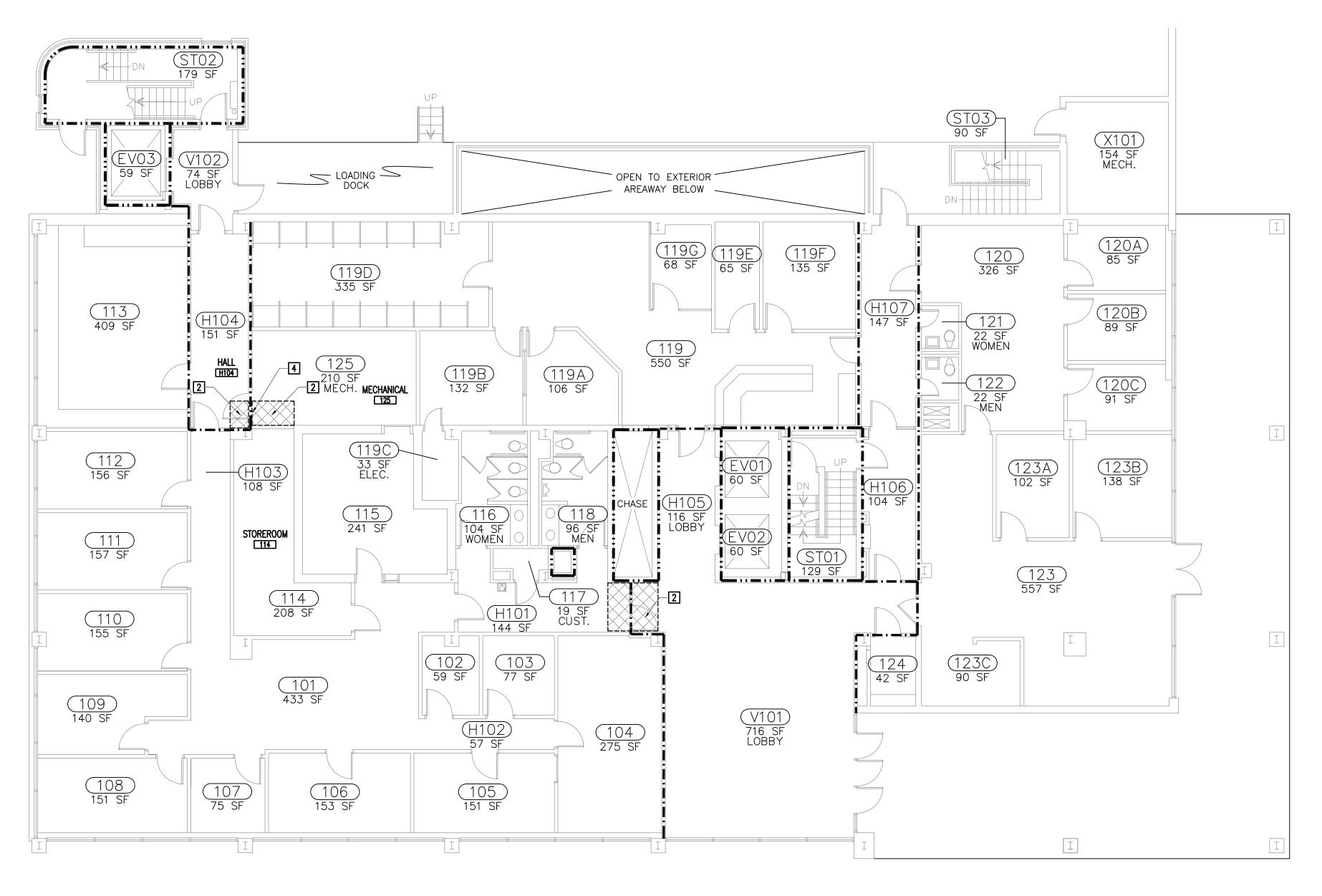
checked by WV

1 - Bynes Building Existing Mechnical Chase Elevation

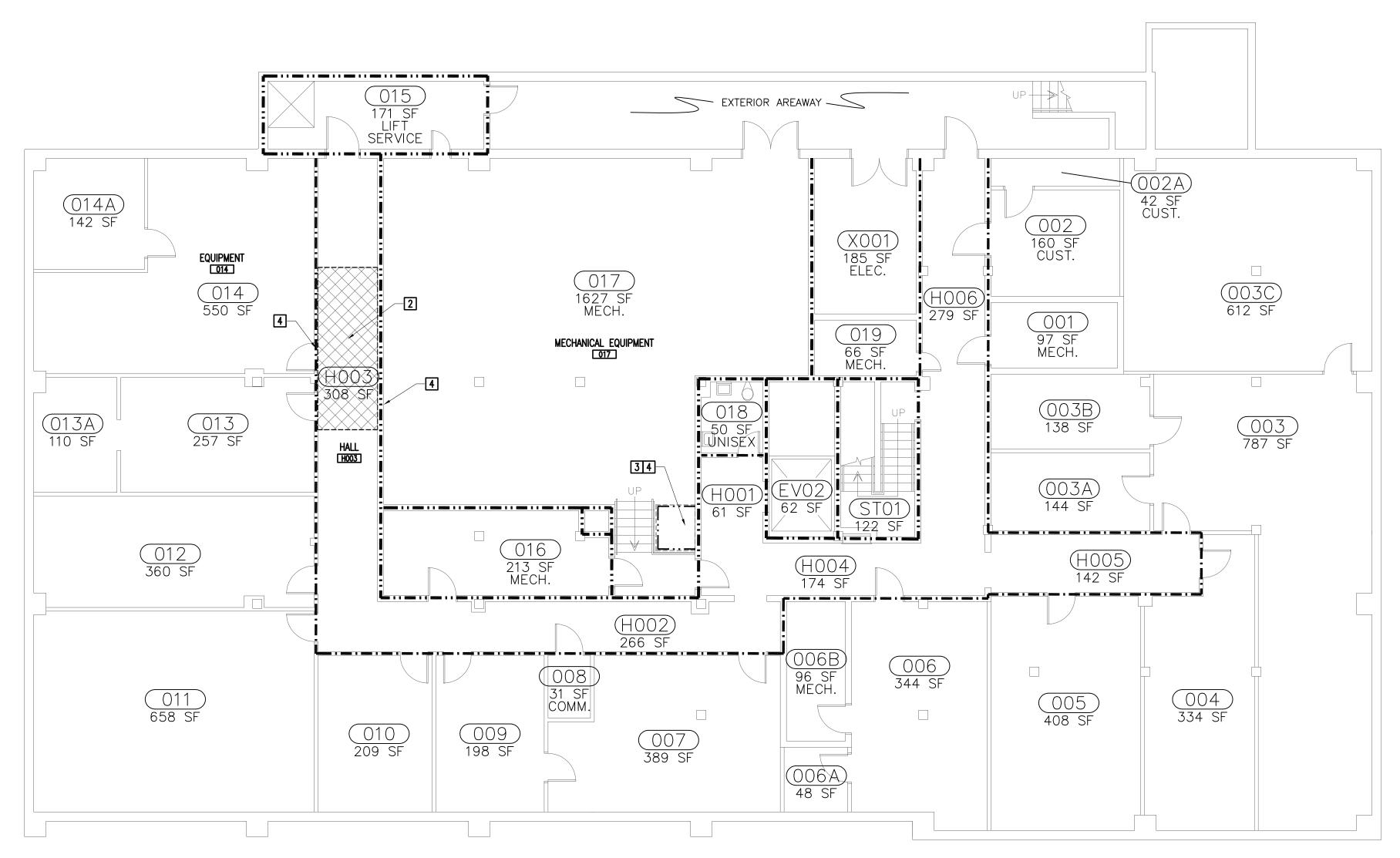
2 - Section Scale: 3/16" = 1'-0"

3 - Detail

Scale: 1" = 1'-0"



2 FIRST FLOOR PLAN
1/8"=1'-0"



GENERAL NOTES

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- 2. CONTRACTOR SHALL CLOSELY COORDINATE DEMOLITION WITH NEW CONSTRUCTION PLANS.
- 3. NOT ALL DEMOLITION REQUIRED BY THE INSTALLATION OF NEW MECHANICAL AND ELECTRICAL SYSTEMS IS NECESSARILY INDICATED ON ARCHITECTURAL PLANS. COORDINATE ADDITIONAL DEMOLITION WORK ON MECHANICAL, ELECTRICAL, AND PLUMBING SHEETS.
- 4. WHEREVER DEMOLITION DAMAGES EXISTING CONSTRUCTION TO REMAIN, THE CONTRACTOR SHALL REPAIR THOSE SURFACES TO THE FINISH AND QUALITY OF ADJACENT SURFACES OR THE ORIGINAL CONDITION.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PROVISIONS TO PROTECT THE EXISTING CONSTRUCTION TO REMAIN. CONSTRUCT DUST BARRIERS AS REQUIRED TO PREVENT THE PASSAGE OF DUST INTO OCCUPIED AREAS.
 PROTECT EXISTING SPRAYED—ON FIREPROOFING DURING DEMOLITION AND
- RENOVATION WORK. REPAIR ANY DAMAGED FIREPROOFING WITH LIKE MATERIAL MATCHING REQUIRED FIRE RATING, U.L. APPROVED.
- 7. INSTALL TEMPORARY BRACING PRIOR TO REMOVAL OF EXISTING CEILING GRID AS NECESSARY TO INSURE PLUMBNESS AND INTEGRITY OF EXISTING PARTITIONS TERMINATING AT CEILING GRID.
- 8. THERE ARE HAZARDOUS MATERIALS PRESENT IN ITEMS TO BE DEMOLISHED AND MODIFIED DURING RENOVATION ACTIVITIES. REFER TO THE HAZARDOUS MATERIALS SURVEY INCLUDED IN THE PROJECT MANUAL TO IDENTIFY SPECIFIC MATERIALS AND LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR MAKING PROVISIONS FOR THE DISTURBANCE, ABATEMENT AND REMOVAL OF THOSE DISTURBED MATERIALS.

DEMOLITION NOTES

- REMOVE EXISTING CEILING IN ITS ENTIRITY, INCLUSIVE OF LIGHT FIXTURES, SUPPLY AND RETURN GRILLES AND DIFFUSERS, AND ALL OTHER DEVICES ATTACHED TO CEILING GRID OR CEILING TILES. PROVIDE TEMPORARY HANGERS AS NECESSARY TO MAINTAIN INTEGRITY AND OPERATION OF DEVICES TO BE RE-INSTALLED. PROVIDE EDGE TRIM, HANGARS SUPPORTS AS NECESSARY FOR GRID THAT IS TO REMAIN.
- REMOVE AND RE-INSTALL EXISTING SUSPENDED ACOUSTICAL TILE CEILING AS REQUIRED FOR NEW WORK. SALVAGE ALL MATERIAL FOR RE-INSTALLATION.

 PROVIDE TEMPORARY SUPPORT FOR EXISTING CEILING MOUNTED DEVICES FOR RE-INSTALLATION. ADJUST EXISTING TIE WIRES AND/OR INSTALL NEW TIE WIRES AS REQUIRED TO LEVEL CEILING.
- REMOVE EXISTING PLASTER ENCASEMENT AND SHEET METAL DUCT AS REQUIRED FOR INSTALLATION OF NEW HVAC PIPE RISERS. INSTALL NEW 2-HOUR RATED PLASTER ENCLOSURE.
- FIRECAULK ALL PENETRATIONS OF RATED WALLS, FLOORS AND ENCLOSURES.
- REMOVE EXISTING FLOOR FINISH AS NECESSARY FOR THE INSTALLATION OF SPACES. PATCH EXISTING FLOOR FINISH AND BASE IN FINISHED ROOMS AS NECESSARY AND DETAILED IN FINISH SCHEDULE TO MATCH EXISTING ADJACENT

DASHED LINES INDICATE WORK
TO BE DEMOLISHED.

UNIVERSITY OF SOUTH CAROLINA ROOM IDENTIFICATION

ASSOCIATES, INC.

Design/Planning/Construction 1201 Main Street, Suite 2100 Columbia, S.C. 29201 tel. 803-256-0000 fax 803-255-7243

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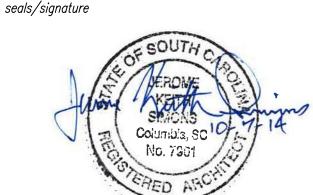


USC CAMPUS PLANNING AND CONSTRUCTION 743 GREENE STREET COLUMBIA, S.C. 29208 project name

USC BYRNES MECHANICAL-ELECTRICAL INFRASTRUCTURE UPGRADES state project number H27-Z153

project number 14024.01

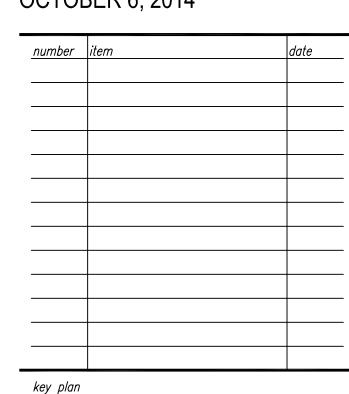
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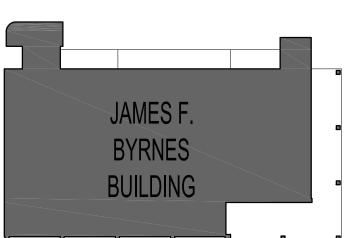




issued for CONSTRUCTION DOCUMENTS

OCTOBER 6, 2014







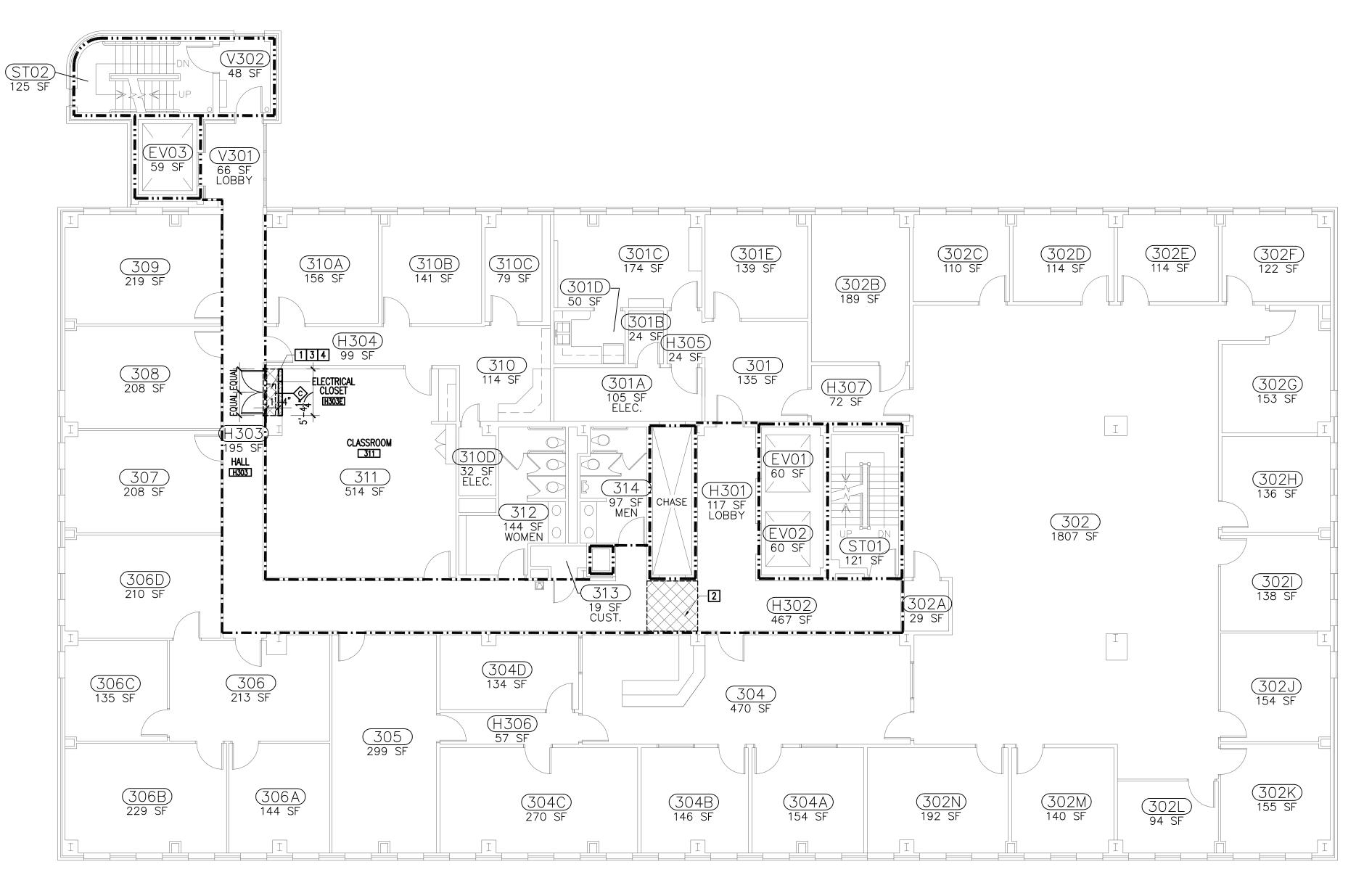
BASEMENT AND FIRST FLOOR PLANS

sheet number

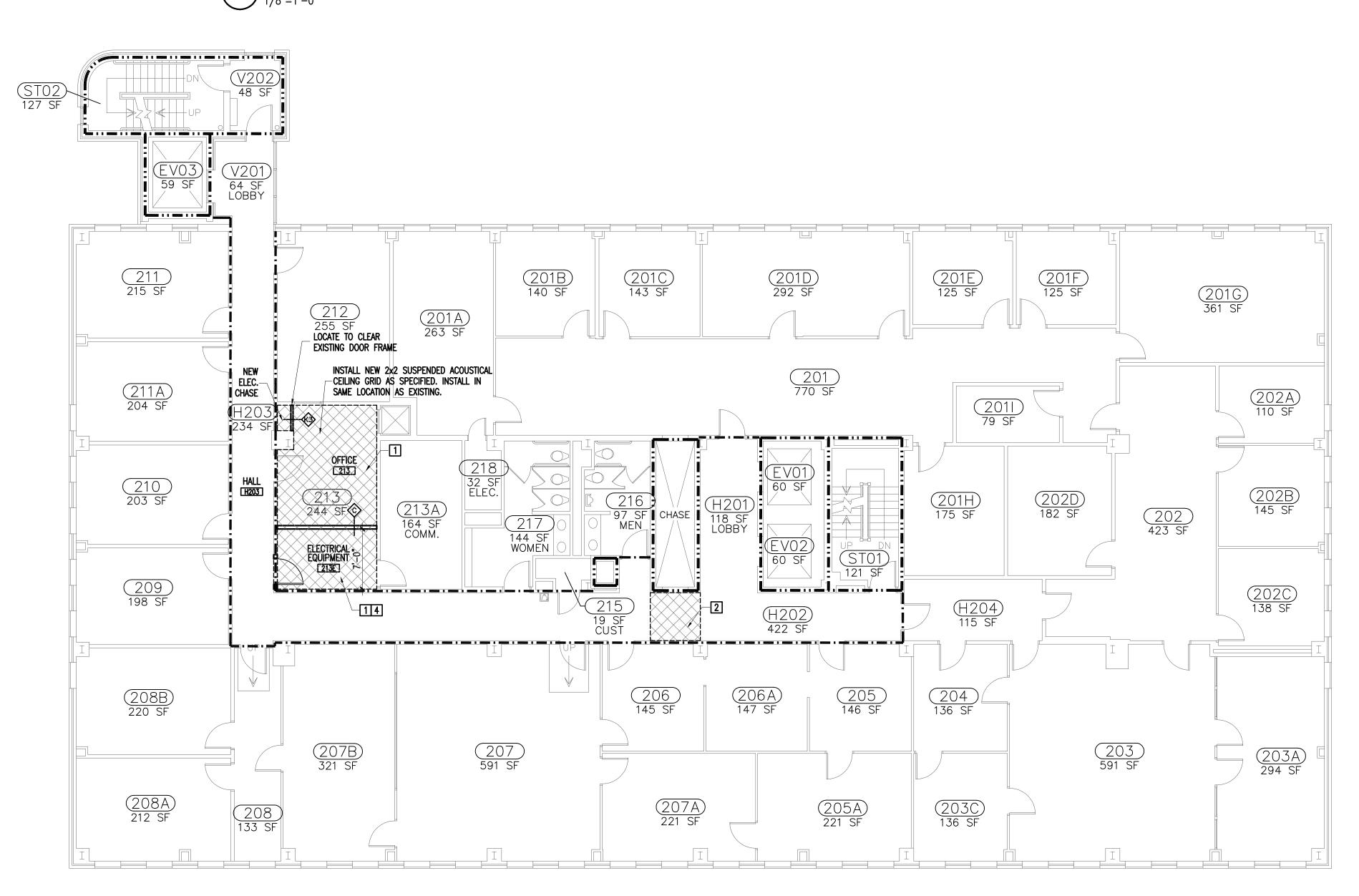
A2.0

drawn by RTC checked by JKS

1 BASEMENT FLOOR PLAN
1/8"=1'-0"



2 THIRD FLOOR PLAN 1/8"=1'-0"





GENERAL NOTES

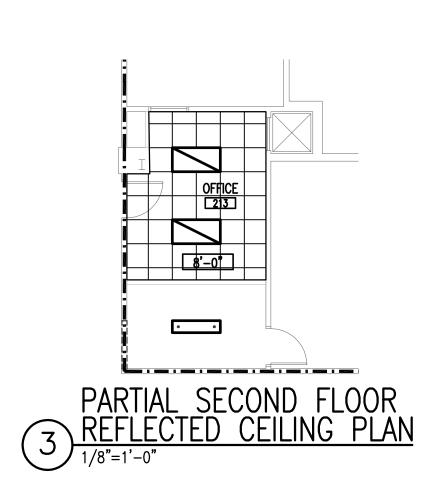
- NOTIFY THE ARCHITECT IF DISCREPANCIES ARE DISCOVERED IN THE FIELD BETWEEN WHAT IS EXISTING AND WHAT IS SHOWN ON THE DRAWNGS. DO NOT PROCEED WITH DEMOLITION UNTIL THE DISCREPANCY IS RESOLVED BY THE ARCHITECT.
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- 6. PROTECT EXISTING SPRAYED—ON FIREPROOFING DURING DEMOLITION AND RENOVATION WORK. REPAIR ANY DAMAGED FIREPROOFING WITH LIKE MATERIAL MATCHING REQUIRED FIRE RATING, U.L. APPROVED.
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- 3 REMOVE EXISTING CABINETRY.
- REMOVE EXISTING FLOOR FINISH AS NECESSARY FOR THE INSTALLATION OF SPACES. PATCH EXISTING FLOOR FINISH AND BASE IN FINISHED ROOMS AS NECESSARY AND DETAILED IN FINISH SCHEDULE TO MATCH EXISTING ADJACENT

DASHED LINES INDICATE WORK TO BE DEMOLISHED.

UNIVERSITY OF SOUTH CAROLINA ROOM IDENTIFICATION





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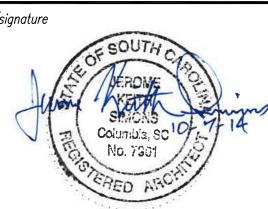


USC CAMPUS PLANNING AND CONSTRUCTION 743 GREENE STREET **COLUMBIA, S.C. 29208** project name USC BYRNES MECHANICAL-

ELECTRICAL INFRASTRUCTURE **UPGRADES** state project number H27-Z153

project number 14024.01

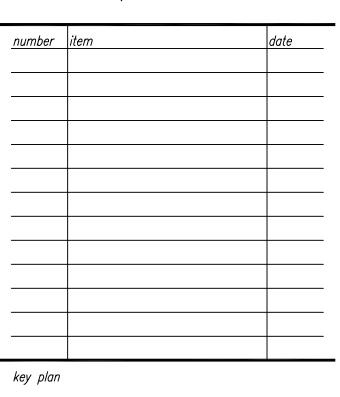
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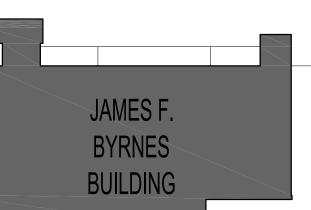




CONSTRUCTION DOCUMENTS

october 6, 2014



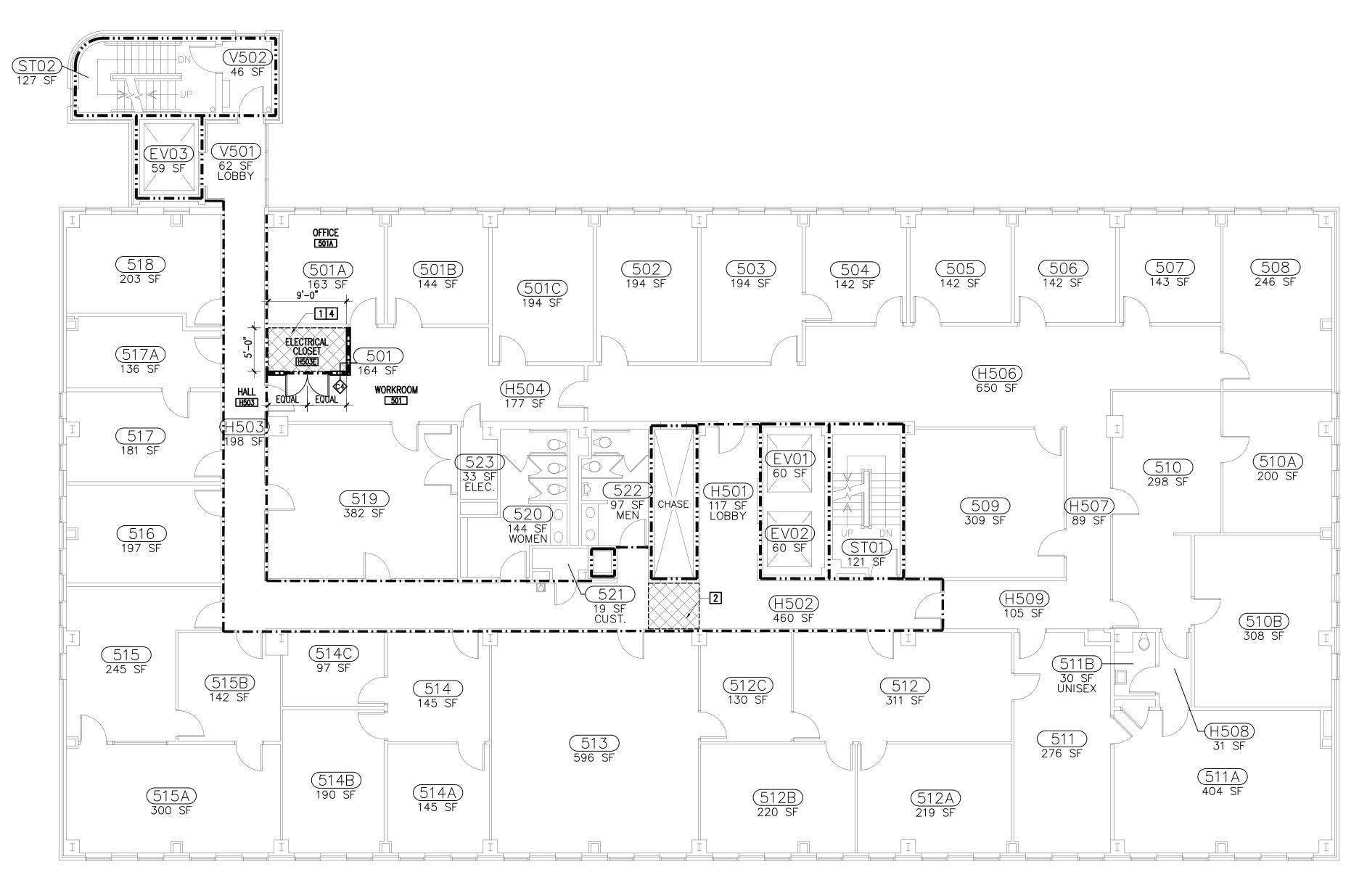




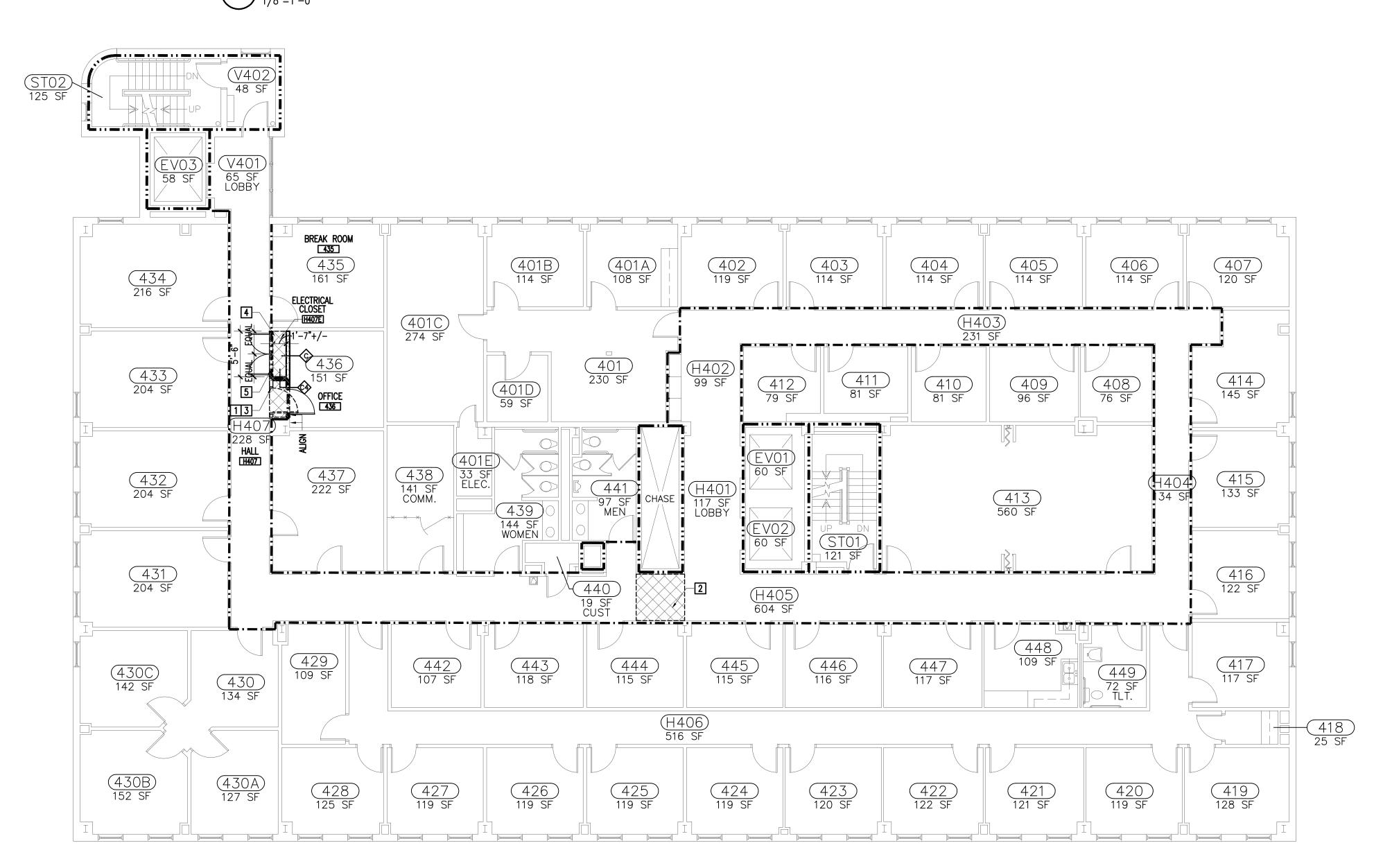
SECOND AND THIRD FLOOR PLANS

sheet number

drawn by RTC checked by **JKS**



2 FIFTH FLOOR PLAN 1/8"=1'-0"



FOURTH FLOOR PLAN

1/8"=1'-0"

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- REMOVE EXISTING WALL, DOOR AND FRAME. SALVAGE LOCKSET AND HINGES FOR RE-INSTALLATION IN NEW WALL. PATCH EXISTING WALL TO MATCH EXISTING ADJACENT FINISHES.
- REMOVE EXISTING FLOOR FINISH AS NECESSARY FOR THE INSTALLATION OF SPACES. PATCH EXISTING FLOOR FINISH AND BASE IN FINISHED ROOMS AS NECESSARY AND DETAILED IN FINISH SCHEDULE TO MATCH EXISTING ADJACENT
- REMOVE PORTION OF EXISTING WALL AS NECESSARY TO INSTALL NEW DOOR AND

---- DASHED LINES INDICATE WORK TO BE DEMOLISHED.

> UNIVERSITY OF SOUTH CAROLINA 161 SF ROOM IDENTIFICATION

ASSOCIATES, INC.

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Civil - Structural - Survey 7 Clusters Court Columbia, SC 29210 Voice: (803) 772-8420 Fax: (803) 772-9120 Email: consult@chaoinc.com



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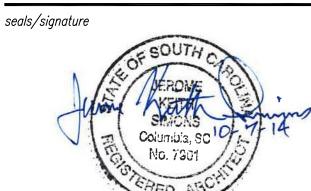
USC CAMPUS PLANNING AND

H27-Z153 project number

UPGRADES

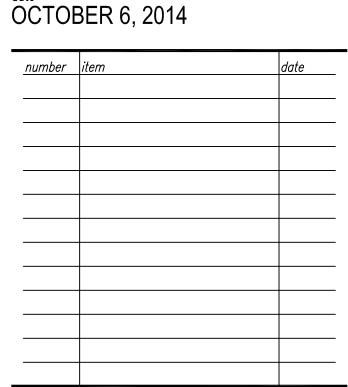
state project number

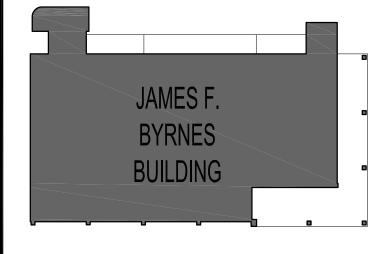
14024.01





CONSTRUCTION DOCUMENTS



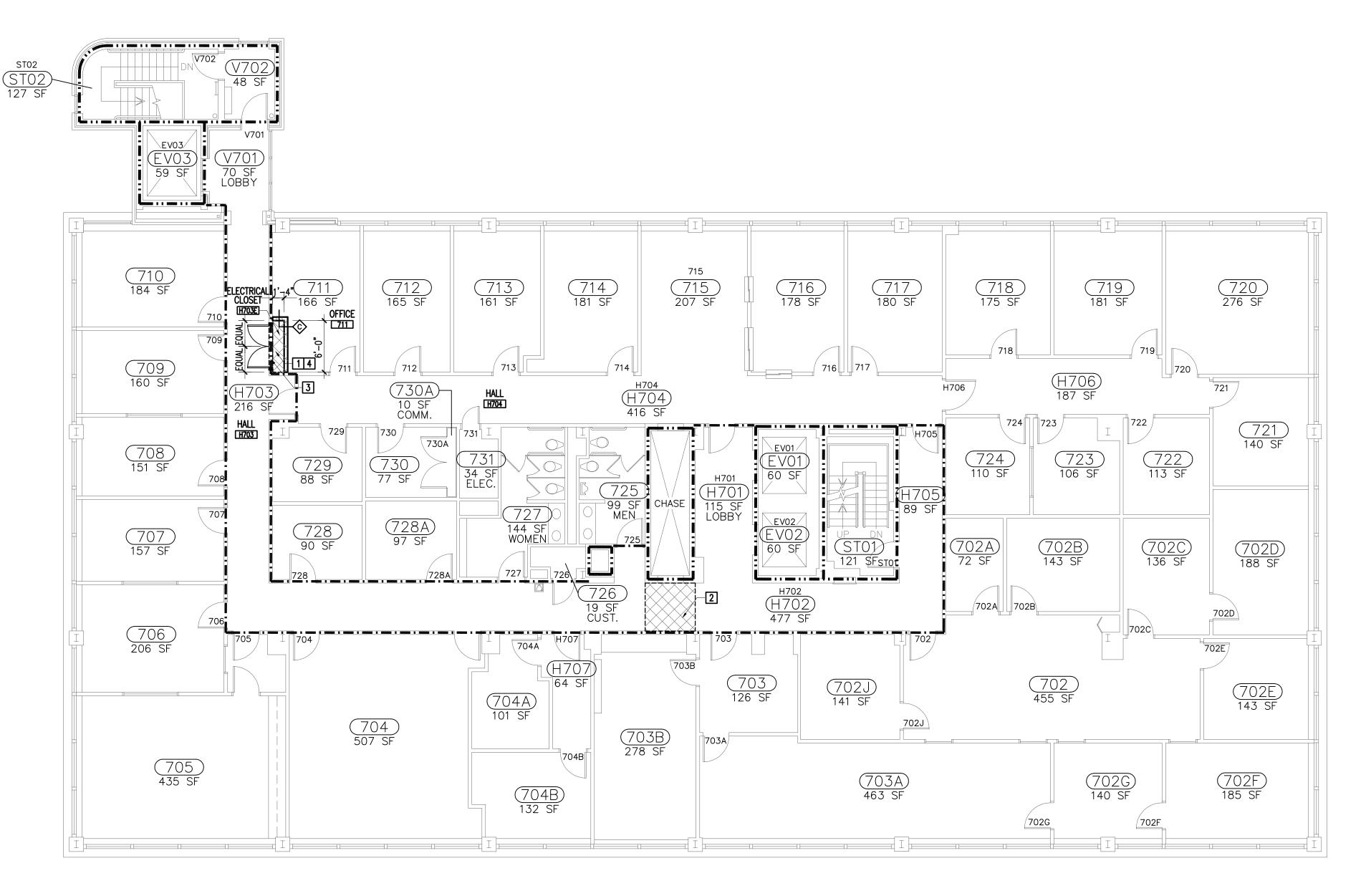




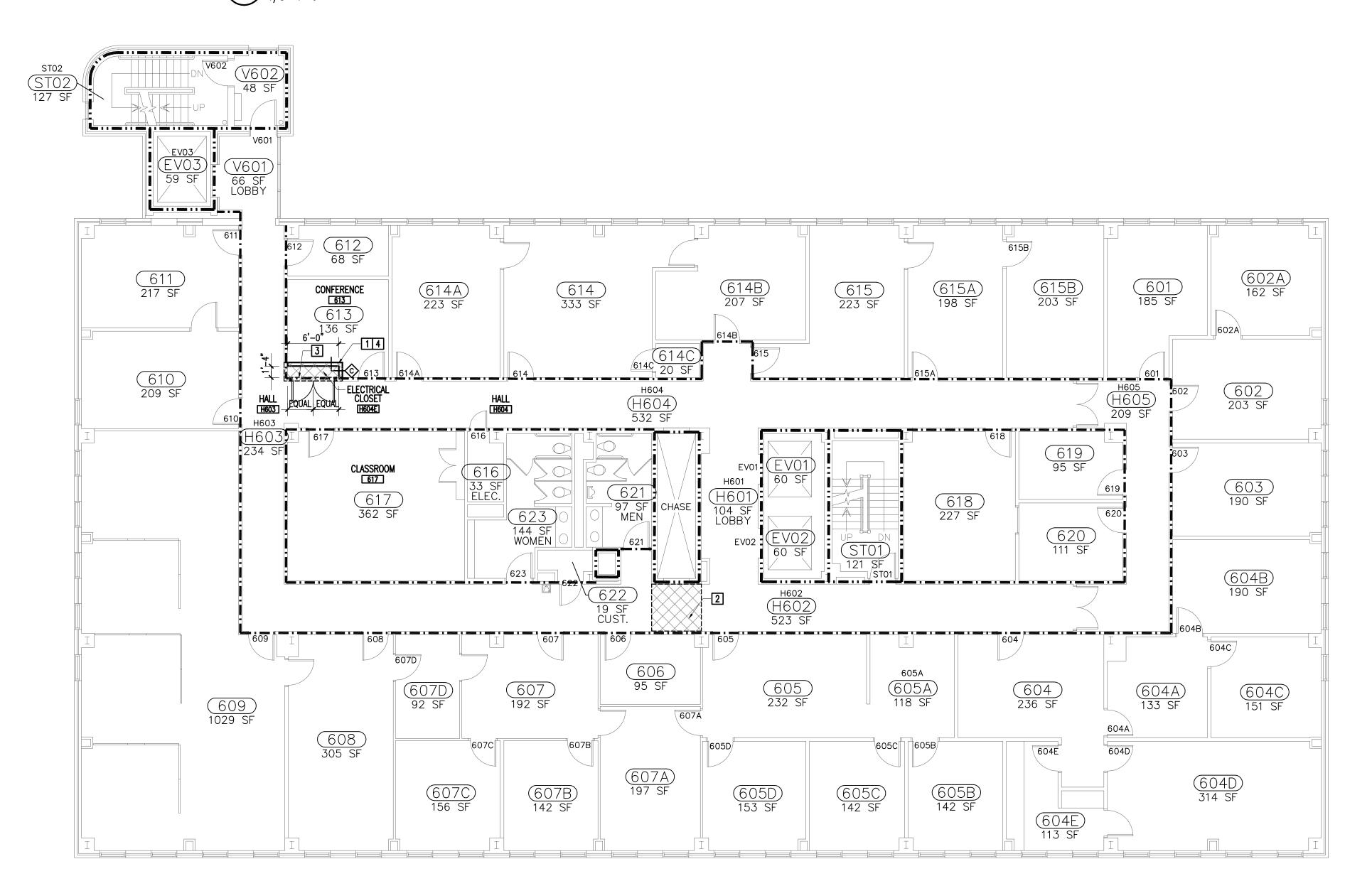
FOURTH AND FIFTH FLOOR PLANS

sheet number

<u>drawn by</u> RTC checked by JKS



2 SEVENTH FLOOR PLAN 1/8"=1'-0"



1) SIXTH FLOOR PLAN
1/8"=1'-0"

GENERAL NOTES

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- 6. PROTECT EXISTING SPRAYED—ON FIREPROOFING DURING DEMOLITION AND RENOVATION WORK. REPAIR ANY DAMAGED FIREPROOFING WITH LIKE MATERIAL MATCHING REQUIRED FIRE RATING, U.L. APPROVED.
- 7. INSTALL TEMPORARY BRACING PRIOR TO REMOVAL OF EXISTING CEILING GRID AS NECESSARY TO INSURE PLUMBNESS AND INTEGRITY OF EXISTING PARTITIONS TERMINATING AT CEILING GRID.
- 8. THERE ARE HAZARDOUS MATERIALS PRESENT IN ITEMS TO BE DEMOLISHED AND MODIFIED DURING RENOVATION ACTIVITIES. REFER TO THE HAZARDOUS MATERIALS SURVEY INCLUDED IN THE PROJECT MANUAL TO IDENTIFY SPECIFIC MATERIALS AND LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR MAKING PROVISIONS FOR THE DISTURBANCE, ABATEMENT AND REMOVAL OF THOSE DISTURBED MATERIALS.

DEMOLITION NOTES

REMOVE EXISTING CEILING IN ITS ENTIRITY, INCLUSIVE OF LIGHT FIXTURES, SUPPLY AND RETURN GRILLES AND DIFFUSERS, AND ALL OTHER DEVICES ATTACHED TO CEILING GRID OR CEILING TILES. PROVIDE TEMPORARY HANGERS AS NECESSARY TO MAINTAIN INTEGRITY AND OPERATION OF DEVICES TO BE RE-INSTALLED. PROVIDE EDGE TRIM, HANGARS SUPPORTS AS NECESSARY FOR GRID THAT IS TO REMAIN.

REMOVE AND RE-INSTALL EXISTING SUSPENDED ACOUSTICAL TILE CEILING AS REQUIRED FOR NEW WORK. SALVAGE ALL MATERIAL FOR RE-INSTALLATION.

PROVIDE TEMPORARY SUPPORT FOR EXISTING CEILING MOUNTED DEVICES FOR RE-INSTALLATION. ADJUST EXISTING TIE WIRES AND/OR INSTALL NEW TIE WIRES AS REQUIRED TO LEVEL CEILING.

3 REMOVE PORTION OF EXISTING WALL AS NECESSARY TO INSTALL NEW DOOR AND FRAME.

REMOVE EXISTING FLOOR FINISH AS NECESSARY FOR THE INSTALLATION OF SPACES. PATCH EXISTING FLOOR FINISH AND BASE IN FINISHED ROOMS AS NECESSARY AND DETAILED IN FINISH SCHEDULE TO MATCH EXISTING ADJACENT

DASHED LINES INDICATE WO TO BE DEMOLISHED.

UNIVERSITY OF SOUTH CAROLINA ROOM IDENTIFICATION

ASSOCIATES, INC.

Design/Planning/Construction 1201 Main Street, Suite 2100 Columbia, S.C. 29201 tel. 803-256-0000 fax 803-255-7243

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743 GREENE STREET
COLUMBIA, S.C. 29208
project name
USC BYRNES MECHANICALELECTRICAL INFRASTRUCTURE
UPGRADES
state project number

H27-Z153

project number
14024.01

CONSTRUCTION

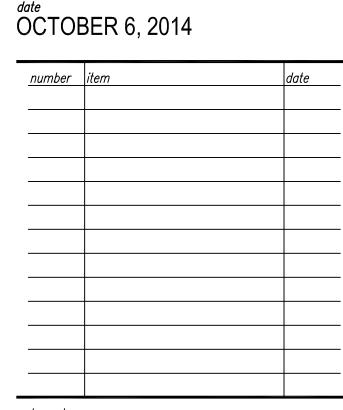
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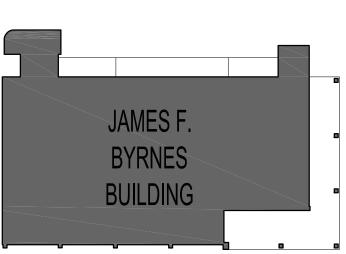




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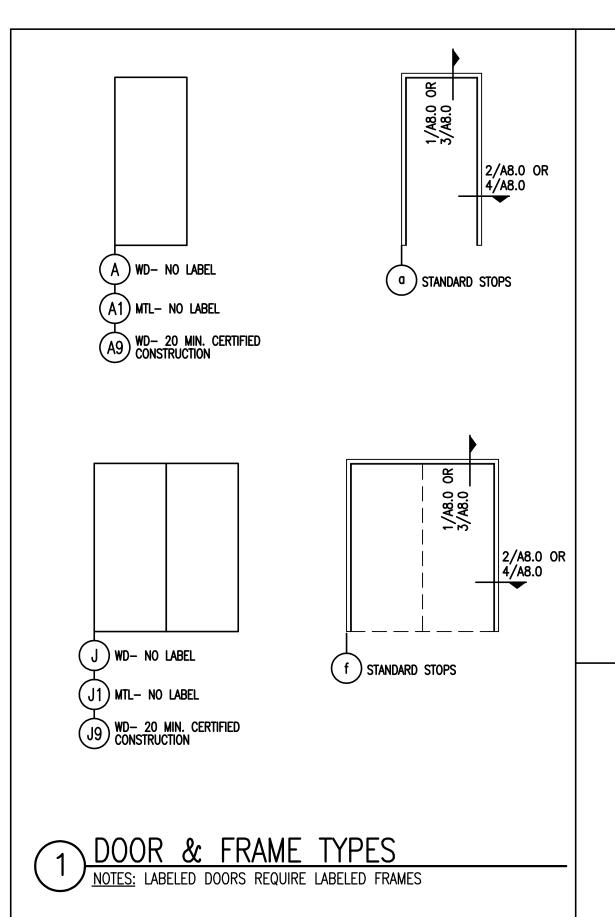


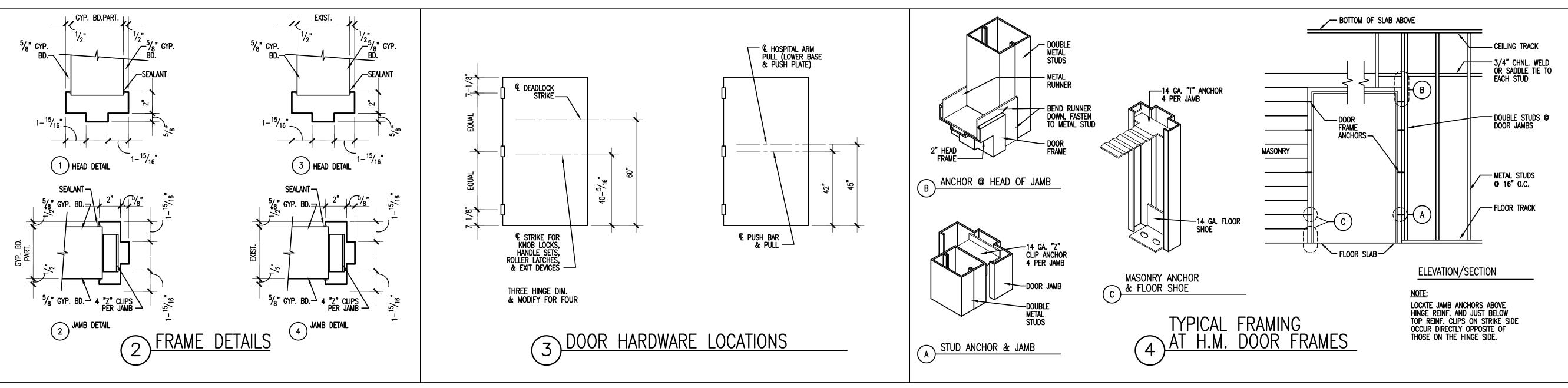


SIXTH AND SEVENTH FLOOR PLANS

sheet number

A2.3





DOOR SCHEDULE						
ROOM NAME	DOOR NUMBER	DOOR ELEV	DOOR SIZE	FRAME ELEV	HDWR SET	REMARKS
ELECTRICAL CLOSET 213E	213E	A9	3'-0" X 7'-0"	а	S-01	
ELECTRICAL EQUIPMENT H303E	H303	J9	5'-0" X 7'-0"	f	S-02	
ELECTRICAL EQUIPMENT H407E	H407	J9	5'-0" X 7'-0"	f	S-02	
OFFICE 436	436	A9	3'-0" X 7'-0"	а	0-01	
ELECTRICAL EQUIPMENT H503E	H503	J9	5'-0" X 7'-0"	f	S-02	
ELECTRICAL EQUIPMENT H604E	H604	J9	5'-0" X 7'-0"	f	S-02	
ELECTRICAL EQUIPMENT H703E	H703	J9	5'-0" X 7'-0"	f	S-02	

HARDWARE SCHEDULE

HARDWARE SET S-01 1-LOCKSET (STOREROOM FUNCTION) 3-HINGÉS

1-LOCKSET (STOREROOM FUNCTION) 3-HINGÉS (REUSE EXISTING) 1-CLOSER 1-WALL STOP

HARDWARE SET 0-01

HARDWARE SET S-02 1 LOCKSET (STOREROOM FUNCTION) 6-HINGES

1-SURFACE FLUSHBOLT (MANUAL)

1-CLOSER (ACTIVE LEAF)

SEALANT CONT. BOTH SIDES SEALANT CONT. BOTH SIDES FINISH CEILING PER R.F.S. (TYP.) [NOT APPLICABLE WHEN WALL TEMINATES © EXIST. CLG.]	UNDERSIDE OF SLAB, BEAM OR CEILING EXTEND GWB TO STRUCTURE ABOVE WHERE NO CEILING IS SCHEDULED FINISH CEILING PER
5/8" GWB (TYPE C, C1, C2, C3) 5/8" FIRE RESISTIVE GWB (TYPE C3, C5, C6) 2-1/2" STL. STUD (TYPE C3) 3-5/8" STL. STUD (TYPE C1, C5) 6" STL. STUD (TYPE C1, C5) 6" STL. STUD (TYPE C2, C6) FIN. FL. TYP. 34" (TYPE C3) 44" (TYPE C3) 44" (TYPE C3) 44" (TYPE C3) 44" (TYPE C3) (TYPE C3) (TYPE C3) (TYPE C4) 51" (TYPE C1, C5) 74" (TYPE C2, C6)	FINISH CEILING PER R.F.S. (TYP.) [NOT APPLICABLE WHEN WALL TEMINATES © EXIST. CLG.] 5/8" GWB 2-1/2" STL. STUD (TYPE K3) 3-5/8" STL. STUD (TYPE K1) 6" STL. STUD (TYPE K2) FIN. FL. TYP. 31" (TYPE K3) 44" (TYPE K3) 44" (TYPE K3) 45" (TYPE K1) 68" (TYPE K1)
NON-RATED TYPES: C, C1, C2, C3 1 HR. U.L. DES. U465 TYPES: C4, C5, C6 STC 40 GA FILE NO. WP 1200	NON-RATED TYPES: K, K1, K2, K3

5 PARTITION TYPES
NOT TO SCALE

ROOM	ROOM NAME	FLOOR		BASE	WALL	8	CEI	LING	
NUMBER	TOOM TOURL	FINISH	ACCENT	BASE	FINISH	ACCENT	FINISH	ACCENT	REMARKS
213	OFFICE	EXIST	_	VB	PNT	_	ACT	_	-
213E	ELECTRICAL EQUIPMENT	VCT	_	VB	PNT	-	-	_	-
H303E	ELECTRICAL CLOSET	VCT	_	VB	PNT	_	_	_	-
311	CLASSROOM	EXIST		VB	PNT	_	_	_	-
H407E	ELECTRICAL EQUIPMENT	VCT		VB	PNT	_	_	_	-
436	OFFICE	EXIST	_	VB	PNT	_	_	_	REMOVE AND REINSTALL ACT
H503E	ELECTRICAL CLOSET	VCT	_	RB	PNT	_	_	_	-
H604E	ELECTRICAL CLOSET	VCT	_	VB	PNT	_	_	_	_
613	CONFERENCE	EXIST	_	VB	PNT	_	_	_	_
H703E	ELECTRICAL CLOSET	VCT	_	VB	PNT	_	_	_	_
711	OFFICE	EXIST	_	VB	PNT	_	_	_	-
			1 1						

FINISH LEGEND	
	SYMBOL
ACOUSTICAL CEILING TILE	ACT
VINYL COMPOSITION TILE	VCT
VINYL BASE	VB
CARPET	CPT
PAINT	PT
EXISTING PLASTER (UNFINISHED)	EP
EXISTING FINISH TO REMAIN	EXIST

ROOM FINISH NOTES:

1. FINISH MATERIALS AND COLORS IN ROOMS ADJACENT TO NEW ELECTRICAL EQUIPMENT ROOMS TO MATCH EXISTING FINISHES. 2. ONLY FINISHES REQUIRED ON 5TH FLOOR ARE INSIDE NEW ELECTRICAL EQUIPMENT ROOM.

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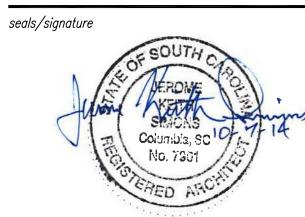


USC CAMPUS PLANNING AND CONSTRUCTION 743 GREENE STREET **COLUMBIA, S.C. 29208**

USC BYRNES MECHANICAL-ELECTRICAL INFRASTRUCTURE UPGRADES state project number H27-Z153

project number 14024.01

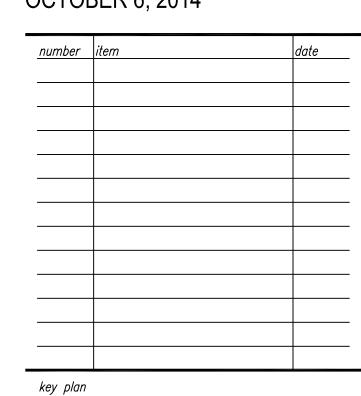
project name





CONSTRUCTION DOCUMENTS

OCTOBER 6, 2014



JAMES F. BYRNES BUILDING



DOOR AND FRAME TYPES AND **DETAILS, PARTITION TYPES** DOOR SCHEDULE ROOM FINISH SCHEDULE

sheet number

drawn by RTC checked by TMW

MECHANICAL DEMOLITION NOTES

- DRAWINGS SHOW GENERAL INTENT OF DEMOLITION. QUANTITIES, LOCATIONS, SIZES AND EQUIPMENT ARE SHOWN TO INDICATE TYPE OF SYSTEM INSTALLED AND DOES NOT NECESSARILY REPRESENT EXACT CONDITIONS. CONTRACTOR SHALL FIELD VERIFY BEFORE BIDDING.
- DEMOLITION OF EQUIPMENT, SYSTEMS, AND COMPONENTS SHALL INCLUDE ALL SUPPORTS, PADS, HANGERS, INSULATION, CONTROLS, STARTERS, ACCESSORIES, AND APPURTENANCES NOT REQUIRED FOR THE INSTALLATION OF THE NEW SYSTEM.
- WHEN PARTIAL DEMOLITION OF A SYSTEM IS INDICATED, THE PART OF THE SYSTEM SHOWN TO REMOVED SHALL BE REMOVED TO THE ACTIVE MAIN OR BRANCH IF NOT REQUIRED FOR THE INSTALLATION OF THE NEW SYSTEM. THE ACTIVE MAIN OR BRANCH SHALL BE REPAIRED TO MATCH NEW INSTALLATION AS MUCH AS PRACTICAL. IF SYSTEM IS INSULATED, INSULATION SHALL BE PATCHED AND FINISHED REPAIR (IE: VAPOR BARRIER, COATING, ETC.)
- . PATCHING OF BUILDING STRUCTURES AND FINISHES SHALL PERTAIN TO ALL WALLS, FLOORS, SLABS, ROOFS, STRUCTURES, AND FINISHES. PATCHES SHALL MATCH EXISTING STRUCTURE, FIRE RATING AND FINISH.
- 5. ALL OPENINGS CREATED BY THE ABANDONMENT OR REMOVAL OF EXISTING SYSTEMS SHALL BE PATCHED.
- 6. ALL WALLS, ROOFS, SLABS, STRUCTURES, AND FINISHES WHOSE FINISH IS IRREGULAR DUE TO THE REMOVAL OF SYSTEMS, SUPPORTS, PADS, ACCESSORIES, AND

APPURTENANCES SHALL BE PATCHED.

7. ALL FINISHES SHALL MATCH EXISTING FINISH. WHEN FINISH OBVIOUSLY DOES NOT MATCH EXISTING FINISH SUCH AS SHADE OF PAINT, AGE OF FINISH, ETC., THE FINISH SHALL BE APPLIED TO THE PATCH AND THE SURFACE IN ALL DIRECTIONS

UNTIL A SURFACE CHANGE OF A MINIMUM OF 45 DEGREES.

. REMOVAL OF SYSTEMS SHALL INCLUDE COMPLETE SYSTEM WHENEVER PRACTICAL. IF NOT, SYSTEM (IE: PIPE, CONDUIT,

ETC.) SHALL BE REMOVED TO 1 INCH BELOW SURFACE.

MECHANICAL GENERAL NOTES

DO NOT SCALE DRAWINGS; SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC. USE ECCENTRIC REDUCERS (FOT) ON PUMP SUCTION AND CONCENTRIC REDUCERS ON PUMP DISCHARGE. USE

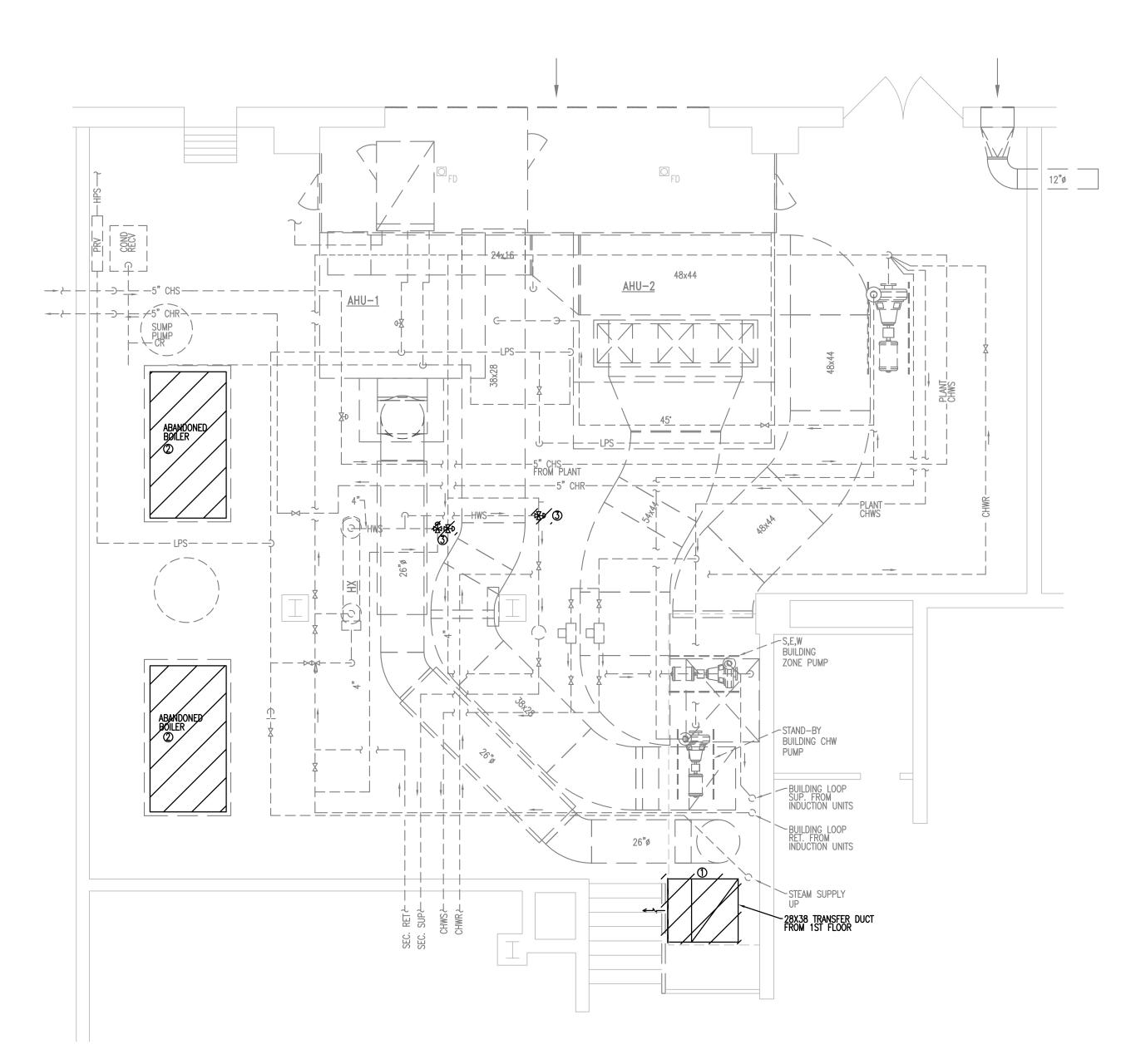
ECCENTRIC REDUCERS ON AUTOMATIC VALVES WHERE

- 3. EXTEND ALL DRAIN LINES TO NEAREST FLOOR DRAIN OR AS INDICATED. ROUTE TO AVOID INTERFERENCE WITH
- PASSAGEWAYS. CONDENSATE DRAINS SHALL BE TRAPPED. SLOPE DRAIN LINES 1/8" PER FOOT. 4. ALL PIPING SHALL PITCH DOWN IN DIRECTION OF FLOW OR
- AS INDICATED ON DRAWINGS: 1" PER 40 FEET WITH MANUAL AIR VENTS AT ALL HIGH POINTS, AND 3/4" DRAIN VALVES AT ALL LOW POINTS.
- ALL PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS, ROOFS AND PARTITIONS EXCEPT WHERE PROHIBITED BY FIRE CODES.
- 6. EXTEND DRAIN LINES FROM RELIEF VALVES TO 2" ABOVE NEAREST FLOOR DRAIN OR AS INDICATED. ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS AND FURTHER SUPPORTS OR HANGERS SHALL BE ADJACENT TO ELBOWS, TO PREVENT WEIGHT OF PIPING BEING PLACED ON THE EQUIPMENT. SUPPORT DETAILS SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER.
- ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE.
- CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY MARKED.
- 10. RUNOUTS SHALL PITCH DOWN IN DIRECTION OF FLOW A MINIMUM OF 1" IN 30 FEET. 11. PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, AIR VOLUME CONTROLLERS, FAN COIL UNITS, EXHAUST FANS, SUPPLY FANS, AND ALL OTHER EQUIPMENT

AND APPURTENANCES.

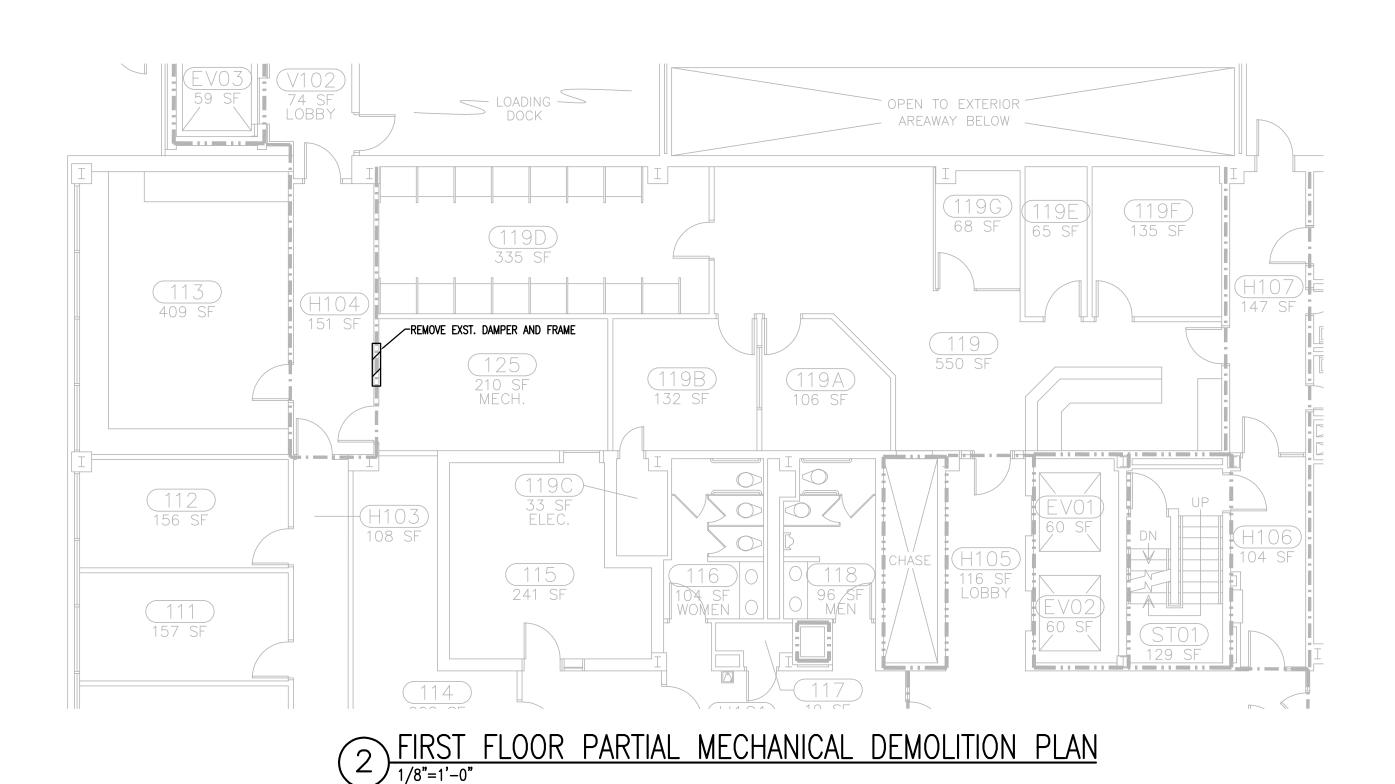
FOR HW PIPING SYSTEM

- 12. ALL DUCT IS GALVANIZED SHEET METAL EXCEPT AS NOTED. 13. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
- 14. AIR DISTRIBUTION UNITS SHALL HAVE TRIM REQUIRED FOR FINISHED SERVICE. 15. COORDINATE ORIENTATION OF SUPPLY AND RETURN PIPING
- BEFORE FABRICATION. 16. PROVIDE DIELECTRIC FITTINGS AT ALL LOCATIONS WHERE
- DISSIMILAR METALS ARE JOINED IN PIPING AND DUCT 17. PROVIDE SPRING TYPE RISER EXPANSION COMPENSATION



1) BASEMENT MECHANICAL PLAN

- DEMOLITION KEYNOTES ① REMOVE 28x38 TRANSFER DUCT FROM 1ST FLOOR, INCLUDING DAMPERS AND OPENINGS. PATCH AND REPAIR OPENINGS LEFT IN CHASE.
- ② EXISTING BOILERS TO BE REMOVED UNDER SEPARATE CONTRACT TO MAKE WAY FOR PUMPS UNDER THIS SCOPE ③ REPLACE EXISTING MIXING VALVES



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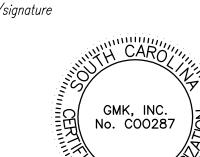


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USC BYRNES MECHANICAL-ELECTRICAL INFRASTRUCTURE **UPGRADES** state project number H27-Z153

project number

project name

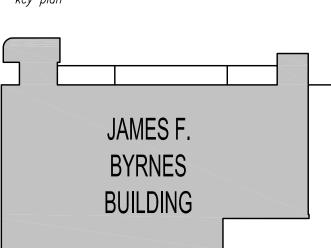




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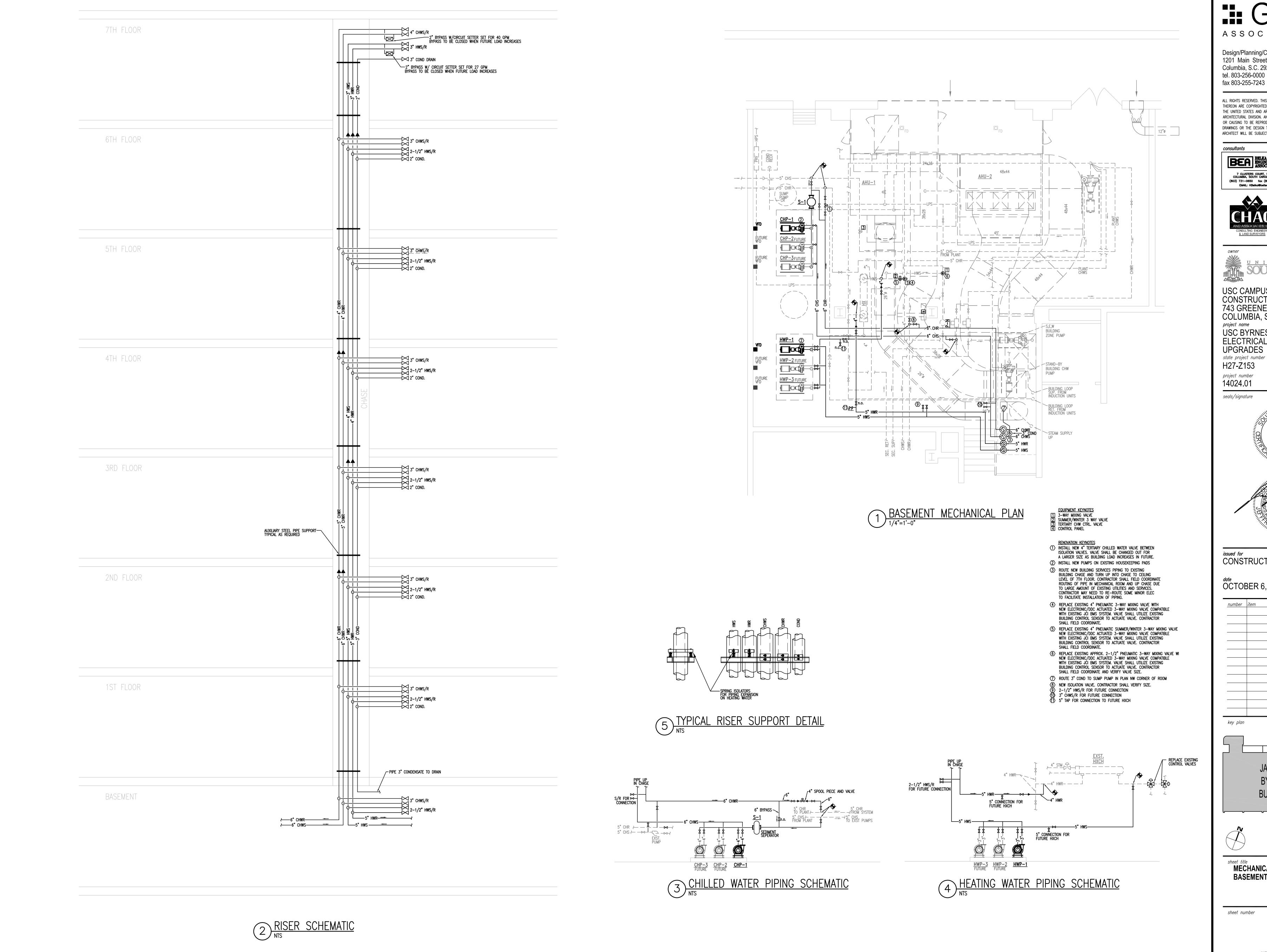
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MECHANICAL PIPING
BASEMENT DEMOLITION **FLOOR PLAN**

sheet number



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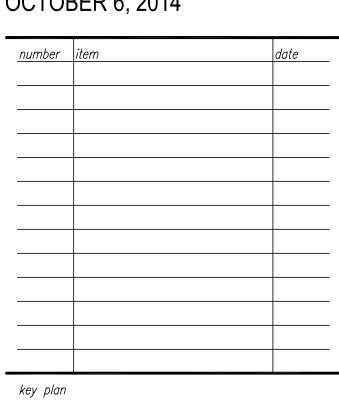


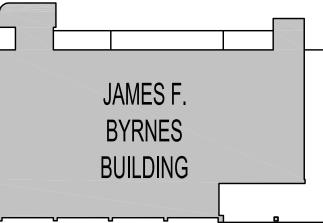




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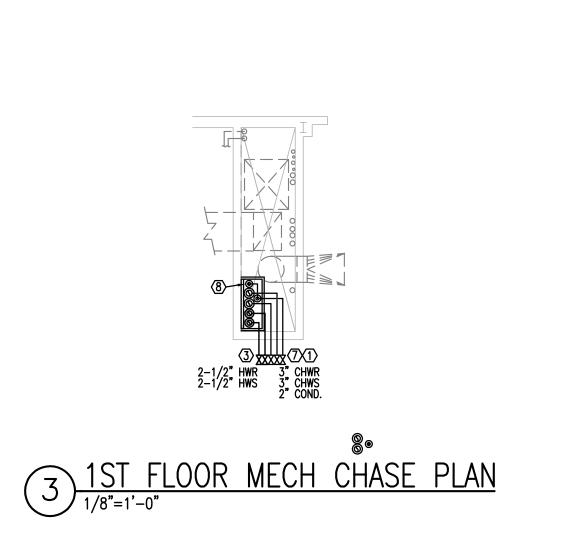






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MECHANICAL PIPING
BASEMENT FLOOR PLAN

sheet number



RENOVATION KEYNOTES

CONTRACTOR SHALL REMOVE GRILLE, FIRE DAMPER AND BLOCK IF NECESSARY TO ACCESS SHAFT. REPLACE

(2) CONTRACTOR SHALL PROVIDE STEEL PIPE SUPPORTS IN CHASE TO SUPPORT NEW PIPE RISER. INSTALLATION MUST ALLOW FOR HOT WATER PIPING EXPANSION.

WATER EQUIPMENT. INSTALL VALVE ABOVE CORRIDOR.
CONTRACTOR SHALL REMOVE CEILING TILE, STORE
AND RE-INSTALL AFTER CONSTRUCTION IN AREA
REQUIRED FOR INSTALLATION OF ISOLATION VALVES

PIPE RISER TO BE INSTALLED IN EXISTING RETURN

AIR SHAFT. PROVIDE ALL NECESSARY TEMPORARY RIGGING AND SUPPORTS NECESSARY TO INSTALL PIPING WHILE SYSTEM AND BUILDING IS IN OPERATION.

(5) ALL PIPING LOCATED IN SHAFT SHALL BE FLANGED NO WELDING SHALL BE DONE WITHIN SHAFT FOOTPRINT

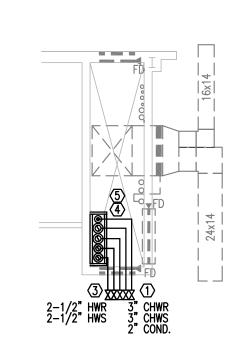
(7) CONTRACTOR SHALL PROVIDE TEMPORARY WALL OPENING IF NECESSARY TO ACCESS SHAFT. REPLACE AND REPAIR/REINSTALL LINTEL AND REINSTALL WALL

(8) IMMEDIATELY ABOVE 1ST FLOOR CEILING, TRANSITION CONDENSATE PIPE OVER AGAINST THE WEST SHAFT WALL AND CONTINUE AT THIS LOCATION UP TO 7TH FLOOR.

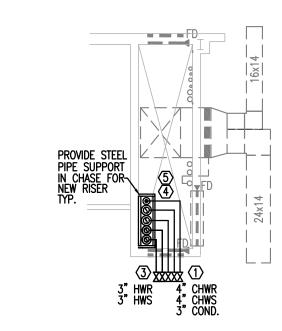
BLOCK AFTÉR INSTALLATION OF RISER PIPING.

6 MOUNT FAN-COIL ABOVE DOOR AND ROUTE CHILLED WATER

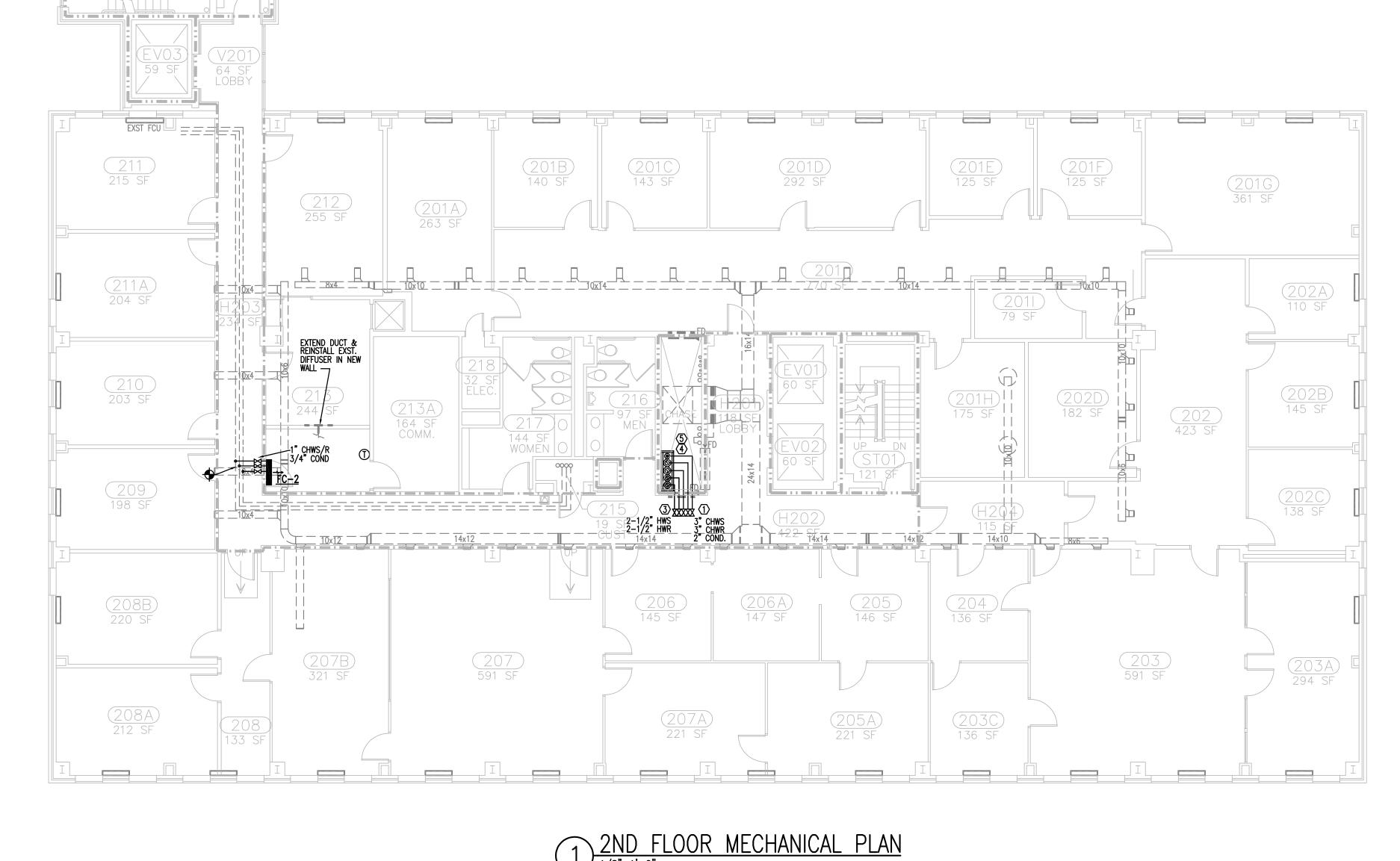
(3) INSTALL NEW ISOLATION VALVES AT EACH FLOOR FOR FUTURE CONNECTION OF CHILLED AND HOT



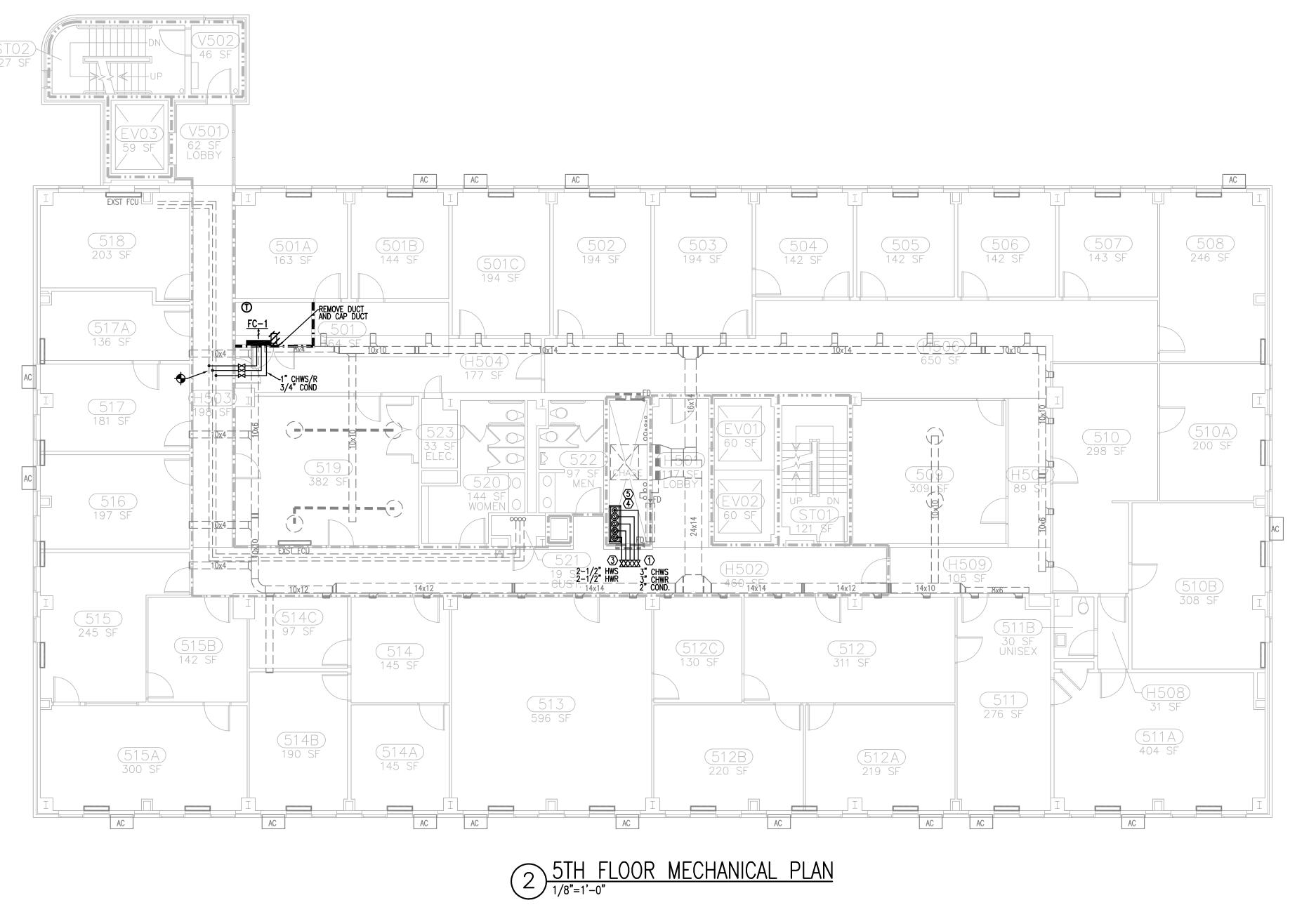
4 3RD THROUGH 6TH FLOOR MECH CHASE PLAN



5 7TH FLOOR MECH CHASE PLAN



1) 2ND FLOOR MECHANICAL PLAN



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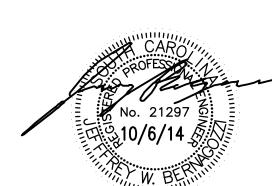
USC CAMPUS PLANNING AND CONSTRUCTION 743 GREENE STREET COLUMBIA, S.C. 29208

project name USC BYRNES MECHANICAL-ELECTRICAL INFRASTRUCTURE UPGRADES state project number H27-Z153

project number 14024.01

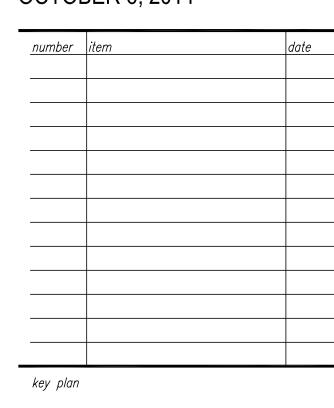
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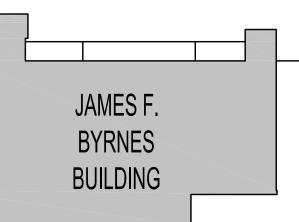


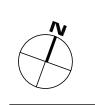


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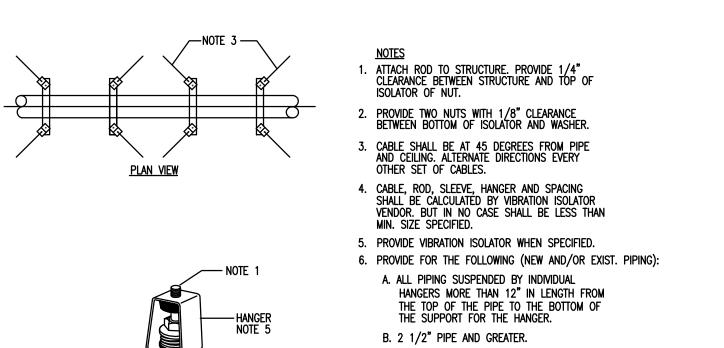
MECHANICAL PIPING

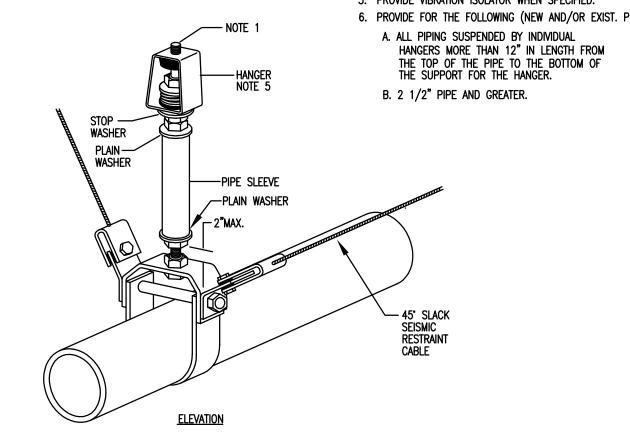
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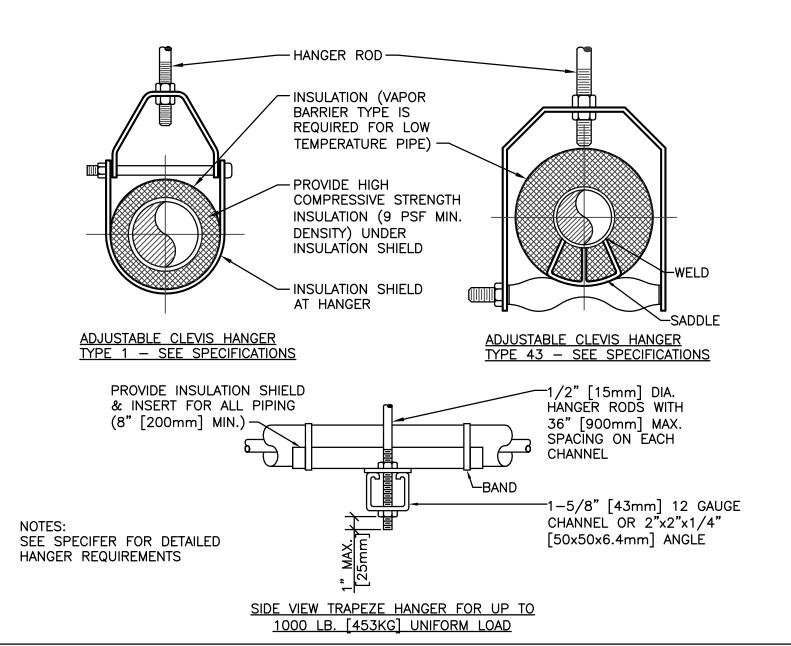
FIFTH FLOOR PLAN

sheet number

M3.5

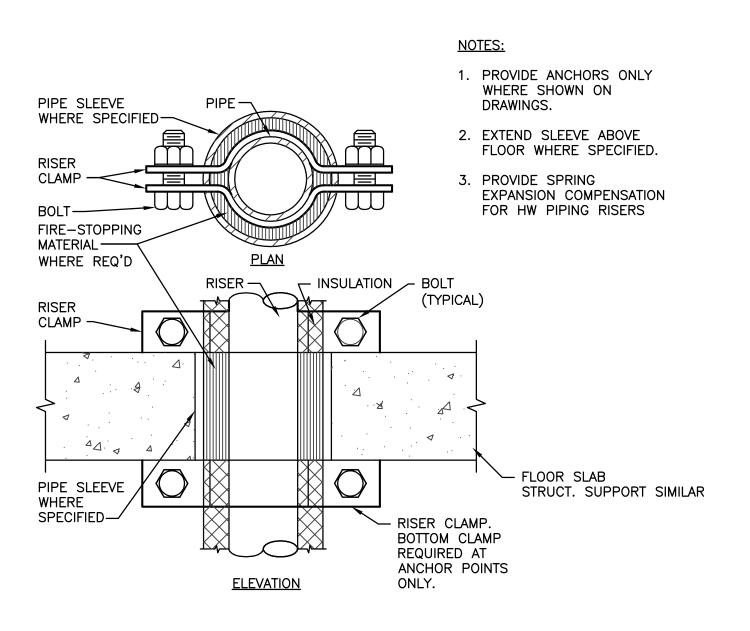




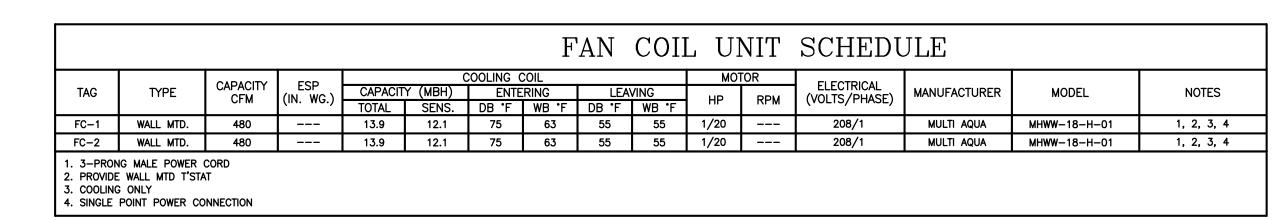


	MAXIMUM PIPE/TUBING SUPPORT SPACING																		
NOM. SIZ	E[mm]	THRU 3/4 THRU [20]	1 [25]	1 1/4 [32]	1 1/2 [40]	2 [50]	2 1/2 [65]	3 [75]	4 [100]	5 [125]	6 [150]	8 [200]	10 [250]	12 [300]	14 [350]	16 [400]	18 [450]	20 [500]	24 [600]
PIPE	FT. [mm]	7 [2100]	7 [2100]	7 [2100]	9 [2700]	10 [3000]	11 [3400]	12 [3700]	14 [4100]	16 [4900]	17 [5200]	19 [5800]	22 [6700]	23 [7000]	25 [7600]	27 [8200]	28 [8500]	30 [9100]	32 [9600]
TUBING	FT. [mm]	5 FT [1500]	6 [1800]	7 [2100]	8 [2400]	8 [2400]	9 [2700]	10 [3000]	12 [3700]	13 [4000]	14 [4100]	16 [4900]	1 1	-	-	-	-	_ _	_ _
NOTE	TOBING [mm] [1500] [1800] [2100] [2400] [2400] [2700] [3000] [4000] [4100] [4900] - - - - - - - - -																		

7 PIPE HANGER DETAIL NTS

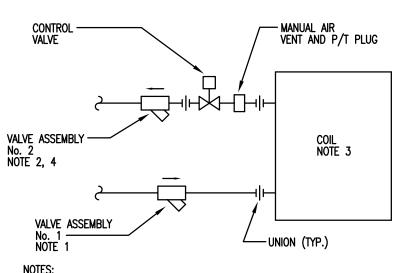


8 PIPE RISER SUPPORT DETAIL



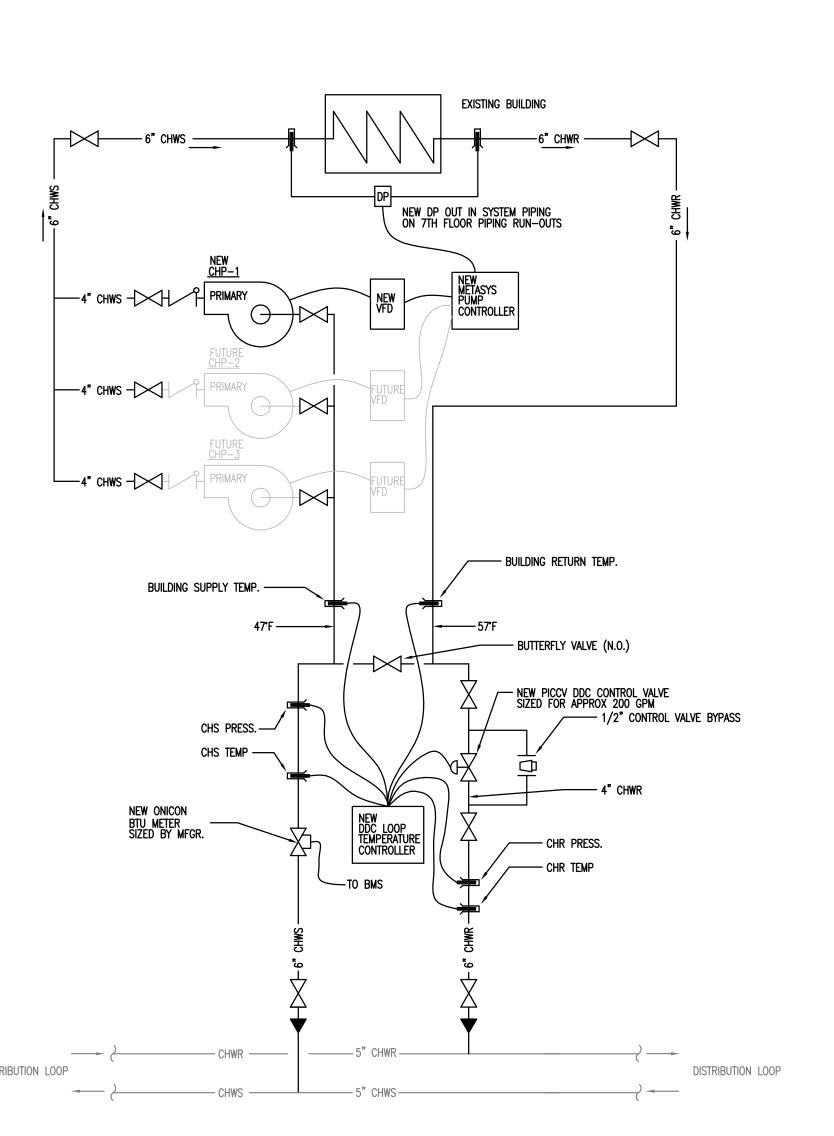
	PUMP SCHEDULE												
TAG	SERVICE	TYPE	FLOW (GPM)	HEAD FT (PSI)	EFFICIENCY (%)	110	MOTOR		ELECTRICAL (VOLTS/PHASE)	EMERGENCY POWER	MANUFACTURER	MODEL	NOTES
			(01 141)	FT (F3I)	(/6)	HP	RPM	TYPE	(VOLIS/TIMSE)	TOWER			
CHP-1	CHILLED WATER	END SUCT.	200	80	73	10	1800	ODP	480/3		BELL AND GOSSETT	1510 2-1/2BB	1, 2, 3, 4
HWP-1	HEATING WATER	END SUCT.	135	85	64.4	7.5	1800	ODP	480/3		BELL AND GOSSETT	1510 2-1/2BB	1, 2, 3, 4
2. STD SE 3. INVERTE	1. FUTURE 3 PUMP PARALLEL OPERATION 2. STD SEAL WITH FLUSH LINE 3. INVERTER DUTY MOTOR 4. VARIBABLE FREQUENCY DRIVE												

	AIR/DIRT SEPARATOR											
TA	٠G	SERVICE	SIZE GPM	CONNECTION	MANUFACTURER	MODEL	REMARKS					
S-	-1	CHW	570	6"	B&G	CRSN						

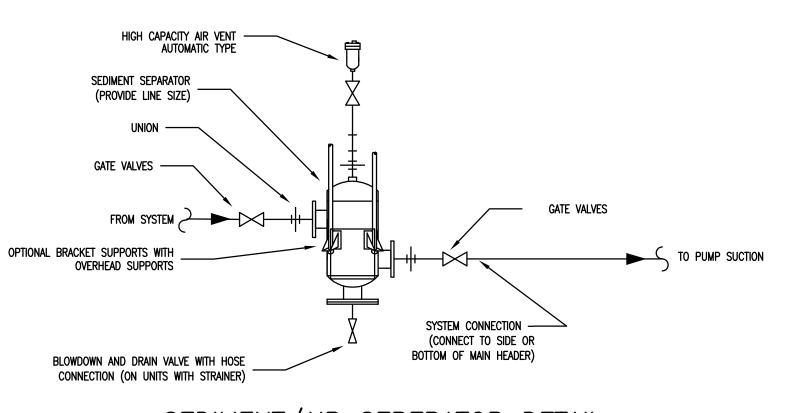


- VALVE ASSEMBLY No. 1: COMBINATION BALL VALVE, Y-STRAINER, UNION, 2P/T'S, HOSE END DRAIN VALVE WITH CAP AND CHAIN.
- 2. VALVE ASSEMBLY No. 2: AUTOMATIC FLOW CONTROL VALVE, 2P/T'S, BALL VALVE. 3. PROVIDE ON EQUIPMENT UP TO 80 GPM
- IF FLOW MODULE CAN NOT BE REMOVED WITHOUT REMOVAL OF ASSEMBLY, THE BALL VALVES MUST BE SEPARATED FROM FLOW DEVICE BY A UNION.
- TWO WAY COIL PIPING DETAIL

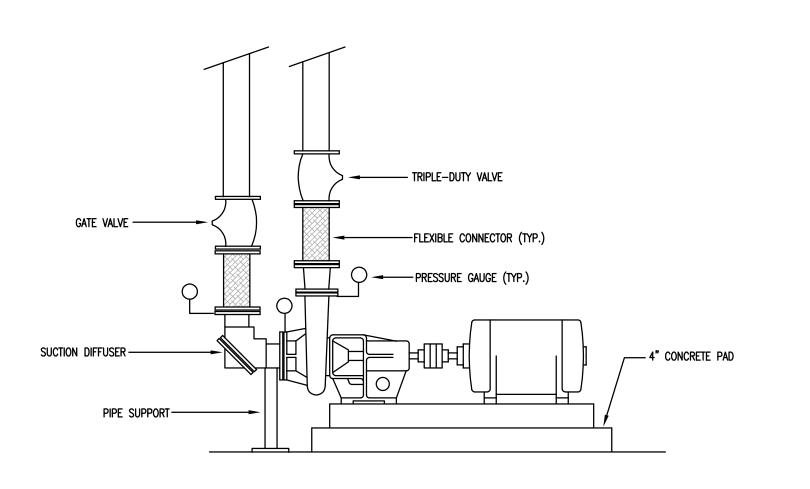
 ATTS





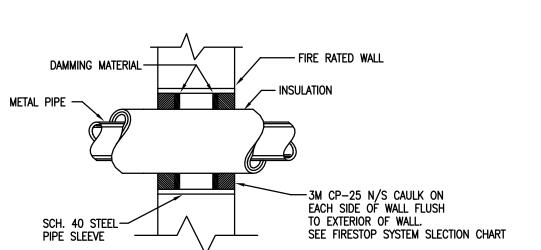


1 SEDIMENT/AIR SEPERATOR DETAIL



2 BASE MOUNTED PUMP DETAIL NTS

SYS	TEM	SELECTION CHART		
FIRE RATING	UL SYSTEM NO.	FIRE SYS	UL STEM NO.	
		METAL PIPE THROUGH CONCRETE/CONCRETE BLOCK		
2-HOUR	WL1058	1/2" - 6" STEEL PIPE		
1-HOUR	WL1052	1 4 / 6 7 4 7 - 1 2 - 6 - 6 - 6 - 1 - 1 - 1 - 1 - 1 - 1 - 1	J1150	
		1/2" - 12" STEEL PIPE 4-HOUR CA	J1007	
····		MULTIPLE METAL PIPE THROUGH CONCRETE/CONCRETE BLO	CK	
1-HOUR	WL5022	1/2" OR SMALLER STEFL PIPE AND/OR	CAJ1140	
2-HOUR	WL5027	4" OR SMALLER COPPER PIPE, 3-HOUR CAL		
2-HOUR	WL5029	EMT OR CONDUIT		
TE BLOCK		INSULATED METAL PIPE THROUGH CONCRETE/CONCRETE BLO	OCK	
3-HOUR	CAJ1156	1/2" - 8" STEEL PIPE WITH 1" THICK	15046	
3-HOUR	CAJ1155	1/2" - 6" STEEL PIPE OR 1/2" - 4" COPPER PIPE, EMT OR 2-HOUR CAL	J504	
3-HOUR	CAJ1154	MULTIPLE INSULATED PIPES, MAXIMUM		
2-HOUR	CAJ1158	QUANTITY OF 4 1/2" -2" STEEL PIPE, COPPER PIPE, EMT OR CONDUIT WITH 3/4" GLASS	CAJ5044	
	FIRE RATING 2-HOUR 1-HOUR 1-HOUR 2-HOUR 2-HOUR 3-HOUR 3-HOUR	FIRE RATING SYSTEM NO. 2—HOUR WL1058 1—HOUR WL1052 WALL 1—HOUR WL5022 2—HOUR WL5027 2—HOUR WL5029 TE BLOCK 3—HOUR CAJ1156 3—HOUR CAJ1155	FIRE RATING NO. PENETRATION ITEM FIRE RATING NO. METAL PIPE THROUGH CONCRETE/CONCRETE BLOCK 1/2" - 6" STEEL PIPE 1/2" - 4" EMT OR STEEL CONDUIT (NO SLEEVE) WHERE FLEXIBLE SEALANT IS REQUIRED 1/2" - 12" STEEL PIPE 1/2" - 12" STEEL PIPE 1/2" OR SMALLER STEEL PIPE A-HOUR CALED A-HOUR CALED A-HOUR WL5022 2-HOUR WL5029 TE BLOCK 3-HOUR CAJ1156 3-HOUR CAJ1155 1/2" - 8" STEEL PIPE WITH 1" THICK GLASS FIBER 1/2" - 6" STEEL PIPE WITH 1" THICK GLASS FIBER 1/2" - 8" STEEL PIPE OR 1/2" - 4" COPPER PIPE, EMT OR CONDUIT WITH 1-1/2" GLASS FIBER MULTIPLE INSULATED PIPES, MAXIMUM QUANTITY OF 4 1/2" - 2" STEEL PIPE, COPPER PIPE, 2-HOUR CALED A-HOUR CALED A-	



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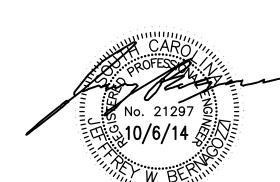
CONSTRUCTION 743 GREENE STREET COLUMBIA, S.C. 29208 project name USC BYRNES MECHANICAL-

ELECTRICAL INFRASTRUCTURE **UPGRADES** state project number H27-Z153

project number 14024.01

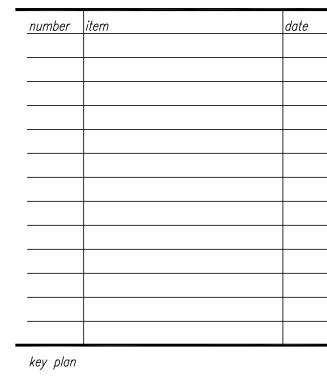
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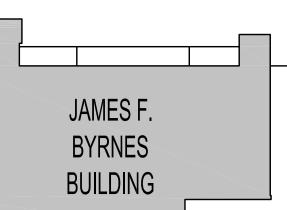


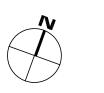


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october 6, 2014







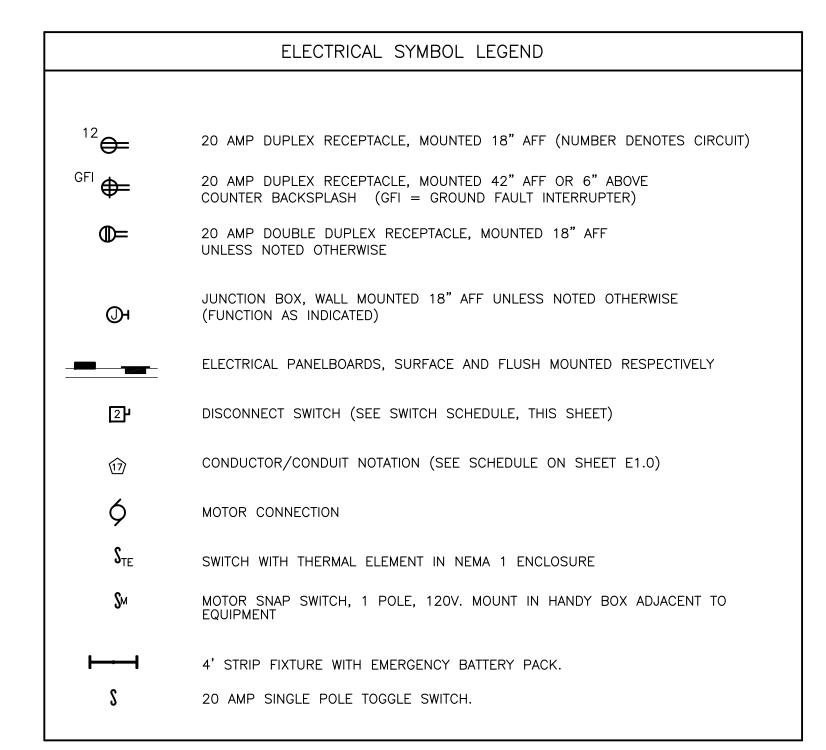
MECHANICAL DETAILS AND SPECIFICATIONS

sheet number

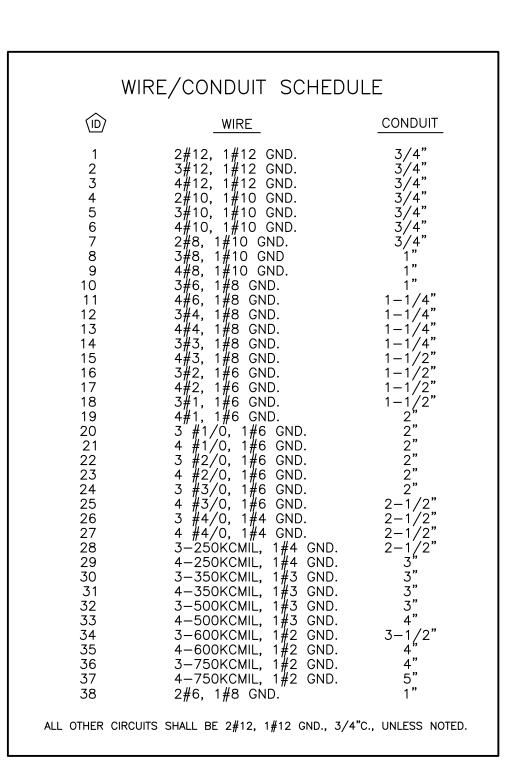
480/277V, 3 PH., 4W, 60 HZ 800 AMP MAIN BREAKER SURFACE MOUNTED 65,000 A.I.C. SYM. (MINIMUM)				PANEL "B1" SE RATED		480/277V, 3 PH., 4W, 60 HZ 100 AMP MAIN BREAKER SURFACE MOUNTED 22,000 A.I.C. SYM. (MINIMUM)		PANEL "B2"
LOADS SERVED	BKR. LOAD CI AMP KVA N	KT. (S / N)	CKT. LOAD BKR. NO. KVA AMP	LOADS SERVED		LOADS SERVED	BKR. LOAD CKT. (S / N) CKT. LOAD BK NO. KVA AM	R. LOADS SERVED
PANEL "H2"	400 -	1 3 5	2 – 4 – 6 – 400	PANEL "H4"	33)	② CHP-1	20 4.2 1 4.2 3 4.2 5 4 4.2 20	D HWP-1
PANEL "B2"	100 -	7 9 11	8 — - 10 — — - 12 —	SPACE		SPARE	20 - 9 10 - 20	SPARE
SURGE PROTECTION DEVICE (SPD)		13	- 14 — - 16 — — - 18 —	SPACE		SPARE	20 - 13 - 15 - 17 - 18 - 20	SPARE
		CONNECTED LOADS (K	VA)			SPARE SPARE SPARE	20 - 19 20 - 20 20 - 20 22 - 20	O SPARE O SPARE O SPARE
		TOTAL LOADS (KVA 0.0)				CONNECTED LOADS (KVA) ØA <u>8.4</u> ØB <u>8.4</u> ØC <u>8.4</u>	
							TOTAL LOADS (KVA) 25.2	

	J-BOX 7 4" X 6" X 4" JUNCTION BOX		4-11/16"SQ X 2" DEEP J-BOX JUNCTION BOX 7A
7TH FLOOR	EMPTY 2"C.		← EMPTY 1"C.
5TH FLOOR	J-BOX 4" x 6" x 4" JUNCTION BOX EMPTY 2"C. 200A	A-11/16"SQ X 2" DEEP JUNCTION BOX NEW PANEL H5 400 AMP 480/277V 3ø, 4W	BOX 6A EMPTY 1"C.
STH FLOOR		= #1 IN 1" C.	
	J-BOX 4" x 6" x 4" JUNCTION BOX		16"SQ X 2" DEEP JUNCTION BOX
4TH FLOOR	EMPTY 2"C.	EMPT	Y 1"C.
4" X 6" X 4" JUNCTION BOX	J-BOX 3 4-11/16"SQ X 2" DEE JUNCTION BOX	J-BOX 3A	
EMPTY 2"C. ————————————————————————————————————		EMPTY 1"C.	
200 AMP GENERAL DUTY, NEMA 1 DISC.SWITCH FUSED 150A (TYP.)	200A 150A 200A 150A 150A NEW PANEL L2 150 AMP NEW XFMR "T2" 112.5 3ø, 4W 20 #1 IN	NEW PANEL H2 400 AMP 480/277V 3ø, 4W 1" C.	
	TAP EXISTING SERVICE TO FEED NEW PANEL "B1". IF TAPPED AHEAD OF MAIN BREAKER, CONTRACTOR SHALL PROVIDE SERVICE GROUND. IF TAPPED AFTER MAIN BREAKER, FEEDER GROUND IS REQUIRED.	CONSTRUCTION	ANY FIRST FLOOR N SHALL BE FED FROM SECOND FLOOR WHEN/IF IS DETERMINED.
	TWO SETS OF 4-500Kcmil, 2/0 GNI IN 4"C EACH.		
EXISTING TRANSFORMERS IN VAULT TO BE REPLACED BY OWNER.	RGROUND SFORMER 'AULT EXISTING SWITCHBOARD 1600 AMP 3ø, 4W EXISTING BUSWAY TO BE RETAINED.	NEW PANEL B1 800 AMP M.B. 3ø, 4W 480/277V NEW BREAKER 400 AMP 480/277V 3ø, 4W NEW BREAKER 100 AMP 480/277V 3ø, 4W NEW BREAKER 100 AMP 480/277V 3ø, 4W	#8 GND. IN 2"C. REW PANEL B2 100 AMP 2 480/277V 3ø, 4W CHP-1 HWP-1

	LIGHTING FIXTURE SCHEDULE												
SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	MODEL NUMBER	OPTICAL ELEMENT	MOUNTING	VOLTS	LAMPS					
—	А	4' FLUORESCENT WRAP FIXTURE WITH WIREGUARD, 2 LAMPS WITH 1400 LUMEN BATTERY PACK	LITHONIA	LB 2 32 MVOLT GEB10IS EL14	NONE	CEILING MOUNTED	277	2 - F32T8/TL741/ALTO					
·	В	2' X 4' FLUORESCENT TROFFER 2 LAMPS	LITHONIA	2GT8 2 32 A12125 MVOLT	ACRYLIC LENS	GRID MOUNTED	277	2 - F32T8/TL741/ALTO					



MOUNTING HEIGHTS INDICATED IN THIS LEGEND SHALL BE TO CENTERLINE OF DEVICE BOX. ALL SWITCHES AND PULL STATIONS SHALL BE INSTALLED TO BE ADA—COMPLIANT (NOT GREATER THAN 48"AFF TO TOGGLE/LEVER).



	ELECTRICAL DRAWING INDEX
1	ELECTRICAL SYMBOL LEGEND & POWER SINGLE-LINE DIAGRAM
2	BASEMENT AND FIRST FLOOR POWER PLANS
3	SECOND, THIRD AND FOURTH FLOOR ELECTRICAL PLANS
4	FIFTH, SIXTH AND SEVENTH FLOOR ELECTRICAL PLANS



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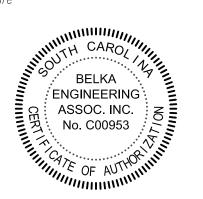


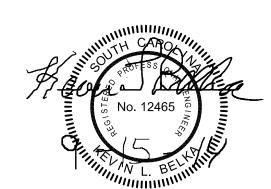
USC CAMPUS PLANNING AND CONSTRUCTION 743 GREENE STREET COLUMBIA, S.C. 29208 project name USC BYRNES MECHANICAL-

ELECTRICAL INFRASTRUCTURE **UPGRADES** state project number

H27-Z153 project number

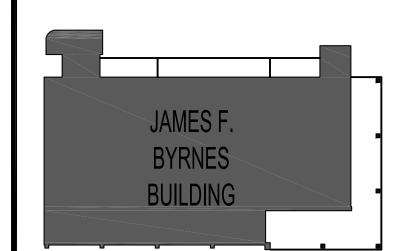
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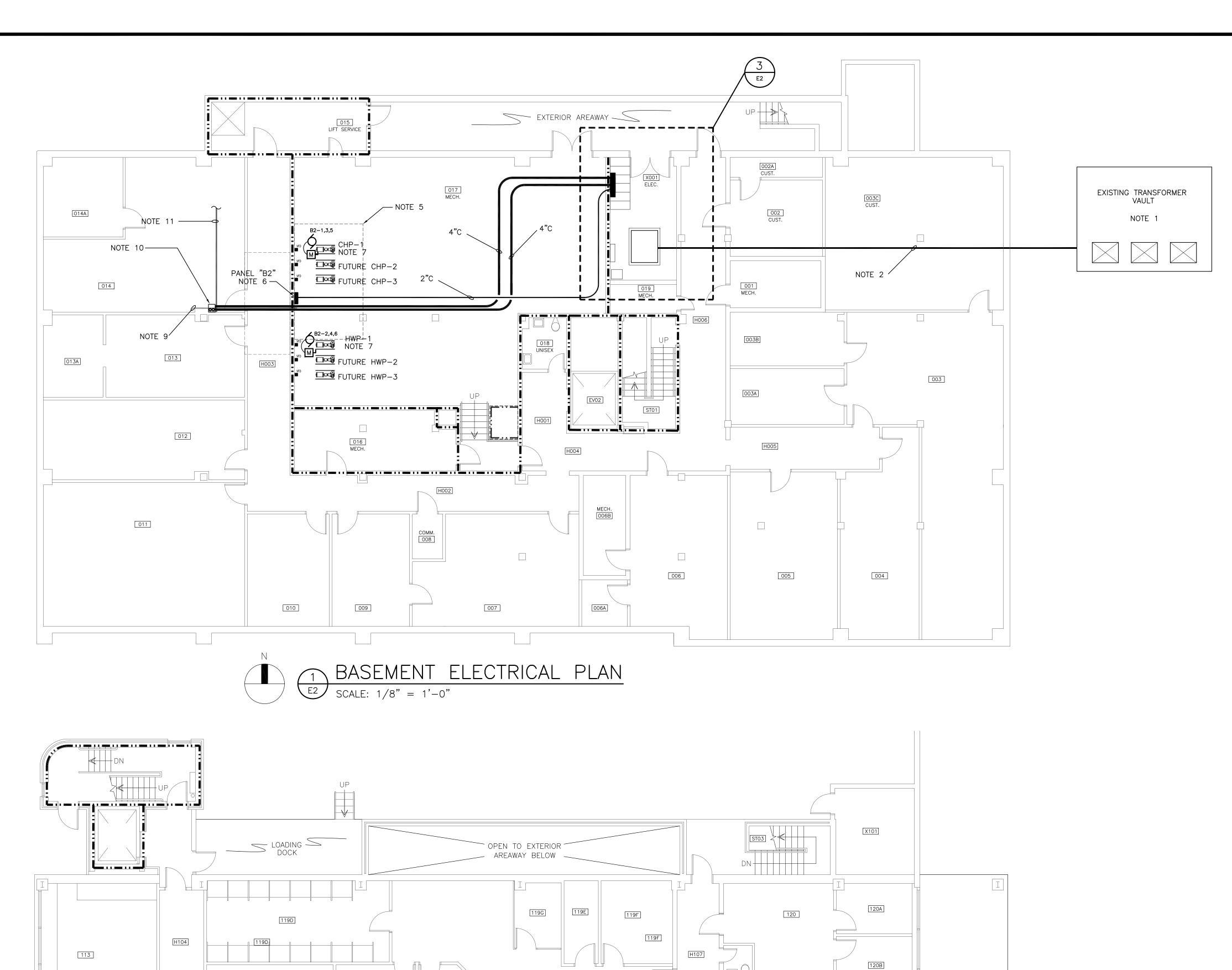


PARTIAL SINGLE LINE DIAGRAM AND SCHEDULES

drawn by TSR checked by KLB

PARTIAL SINGLE LINE DIAGRAM

SCALE: NONE



125

(2) 4"C WITH 4-500Kcmil
1#3 GND FROM NEW PANEL
"B1" IN BASEMENT BELOW. RISING
TO ABOVE 1ST FLOOR CEILING AND
THEN TO NEW 14" X 14" X 12" PULLBOX
MOUNTED ADJACENT TO COLUMN ABOVE
FIRST FLOOR CEILING.

FIRST FLOOR ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

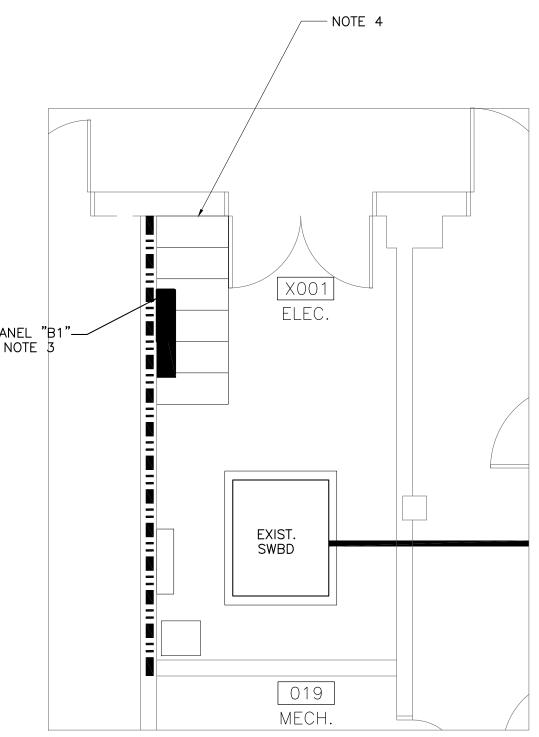
(2) 4"C WITH 4-500Kcmi 1#3 GND ABOVE 1ST FLOOR CEILING ROUTED THROUGH PULLBOX TO SECOND FLOOR,

RISING IN CHASE.

111

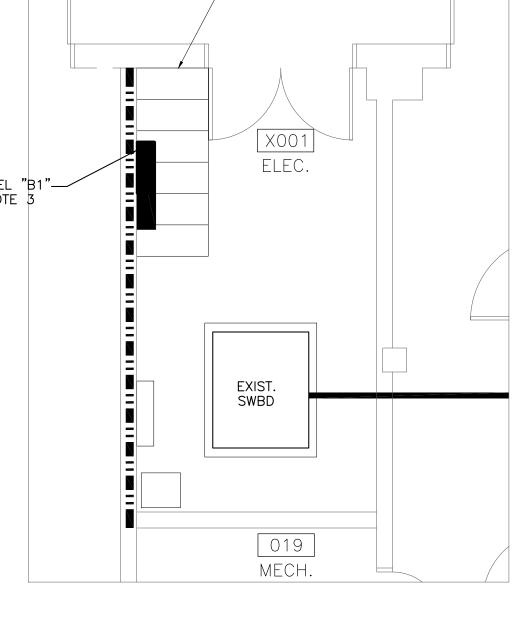


- 1. EXISTING TRANSFORMER VAULT. FIELD VERIFY LOCATION. EXISTING TRANSFORMERS IN VAULT TO BE REPLACED BY OWNER.
- 2. EXISTING ELECTRICAL BUSWAY FED FROM EXISTING TRANSFORMERS IN VAULT.
- 3. NEW 800 AMP M.B. 480/277V PANEL "B1". PROVIDE (2) 400 AMP 3 POLE BREAKERS AND (1) 100 AMP 3 POLE BREAKER IN NEW PANEL. TAP EXISTING MAIN WITH TWO SETS OF 4-500Kcmil, 2/0 GND IN 4"C EACH AS FEEDERS FOR NEW PANEL "B1". FIELD VERIFY LOCATION OF NEW PANEL WITH RESPECT TO EXISTING NOTE 4 TRANSFORMERS TO REMAIN.
- 4. IN THIS AREA THERE ARE (6) SINGLE PHASE TRANSFORMERS, 2 SETS OF 3. ONE SET IS LIVE TO REMAIN. THE OTHER SET IS DEAD. CONTRACTOR SHALL REMOVE THE DEAD SET IN AN EFFORT TO CREATE MORE USABLE SPACE.
- 5. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY WITH MECHANICAL CONTRACTOR WHICH TWO EXISTING BOILERS ARE TO BE REMOVED. ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL CONNECTIONS FOR THESE BOILERS IN THEIR ENTIRETY.
- 6. PROVIDE NEW 100 AMP M.B. 480/277V 24 CKT PANEL "B2" IN THIS AREA. PANEL SHALL BE FED WITH 4#3, 1#8 GND IN 2"C FROM NEW 800 AMP PANEL "B1". SEE PANELBOARD SCHEDULE SHEET E1.0. FIELD VERIFY OPTIMAL LOCATION FOR PANELBOARD.
- 7. PROVIDE 3#12, #12GND IN 3/4" CONDUIT FROM 20 AMP 3 POLE BREAKER IN PANEL "B2". CONNECT PUMPS THROUGH VFD FURNISHED WITH PUMPS.
- 8. (NOT USED).
- 9. RE-ROUTE EXISTING 3/4" CONDUIT SUCH THAT IT'S PATH DOES NOT OBSTRUCT NEW PULLBOX OR 4" CONDUIT ROUTING.
- 10. PROVIDE NEW 14"H X 14"W X 12"D PULL BOX MOUNTED AGAINST TOP OF COLUMN IN STORAGE RM. 014. PROVIDE (2) 4"C WIH 4-500Kcmil, 1#3 GND FROM NEW PANEL "B1" ROUTED THROUGH PULL BOX AND UP THROUGH FIRST FLOOR MECHANICAL ROOM.
- 11. EXISTING 2.5" CONDUIT TO REMAIN. COORDINATE WORK AROUND THIS CONDUIT.



BASEMENT ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"



JAMES F. BYRNES BUILDING

BASEMENT AND FIRST FLOOR **ELECTRICAL PLANS**

> <u>drawn by TSR</u> checked by KLB



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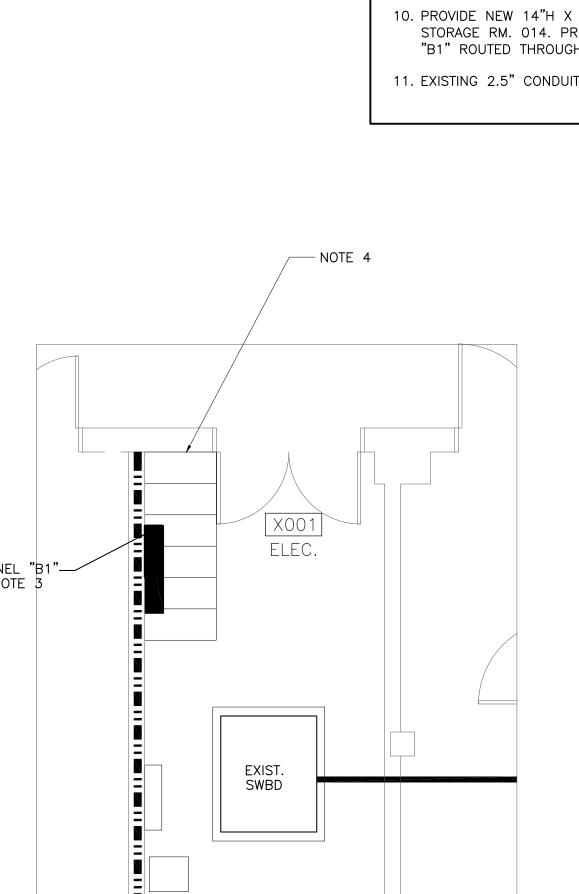
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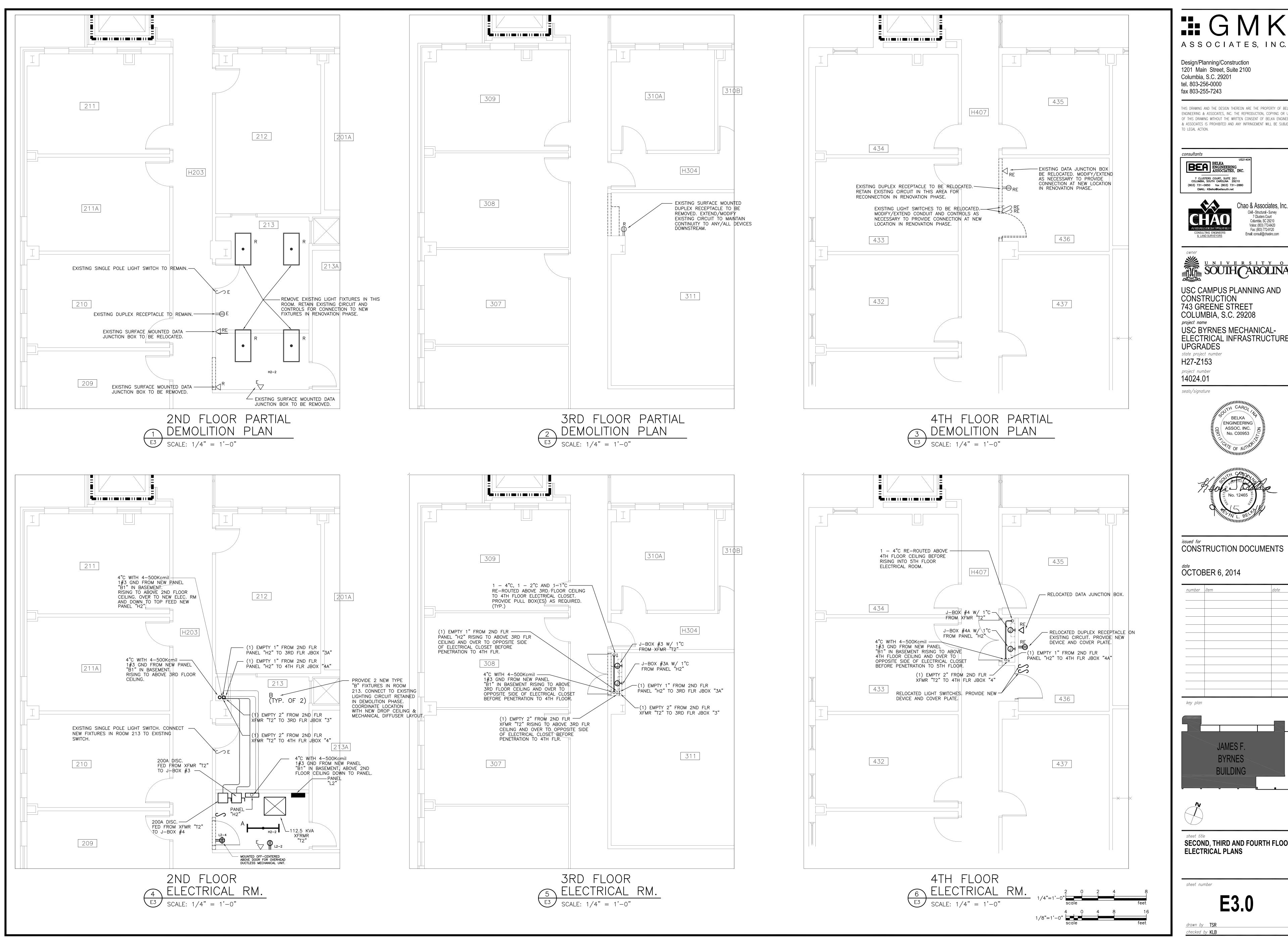
UPGRADES state project number

project number

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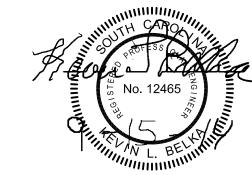


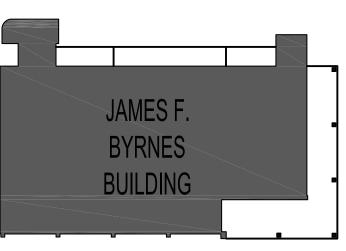


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SECOND, THIRD AND FOURTH FLOOR

E3.0