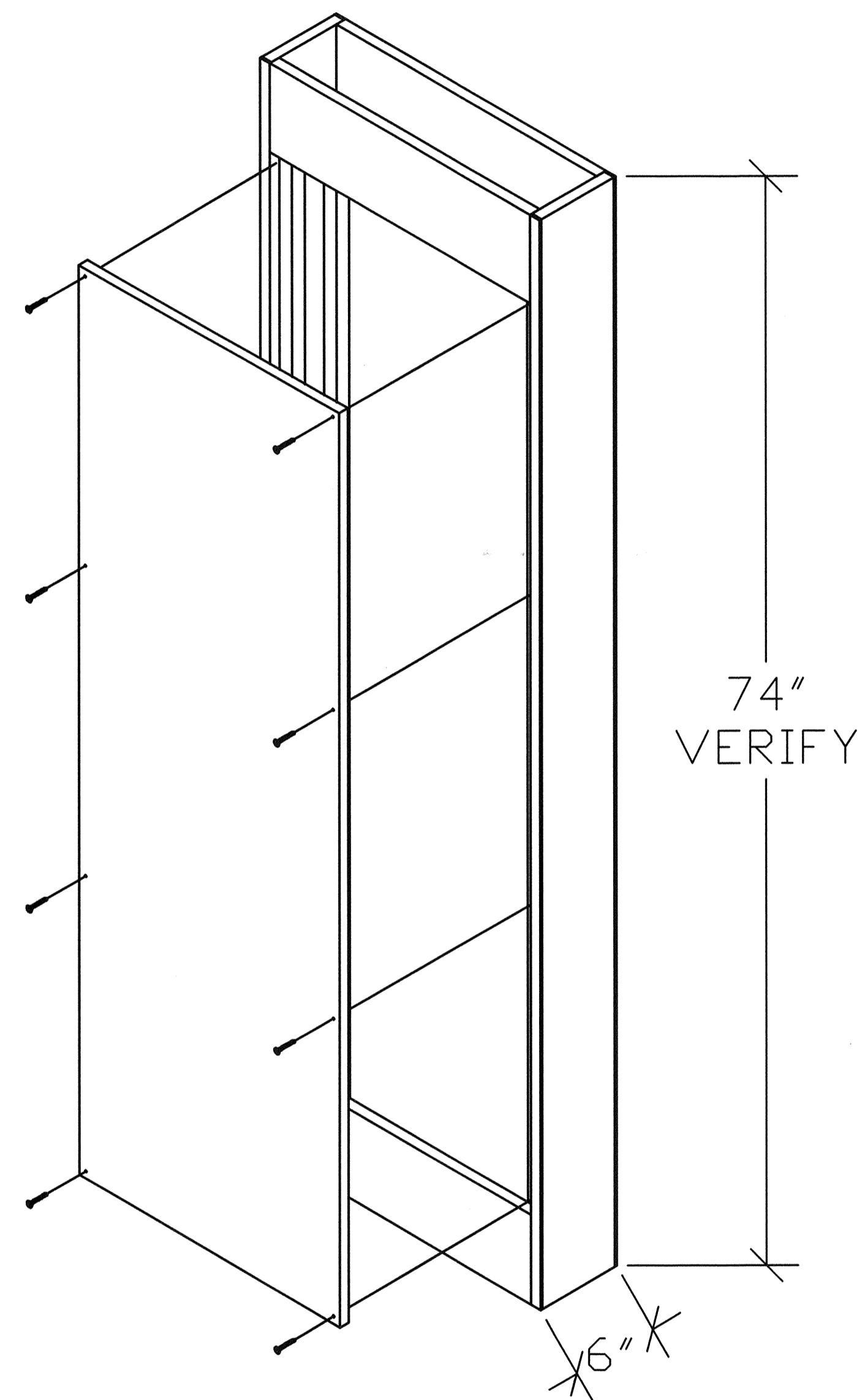
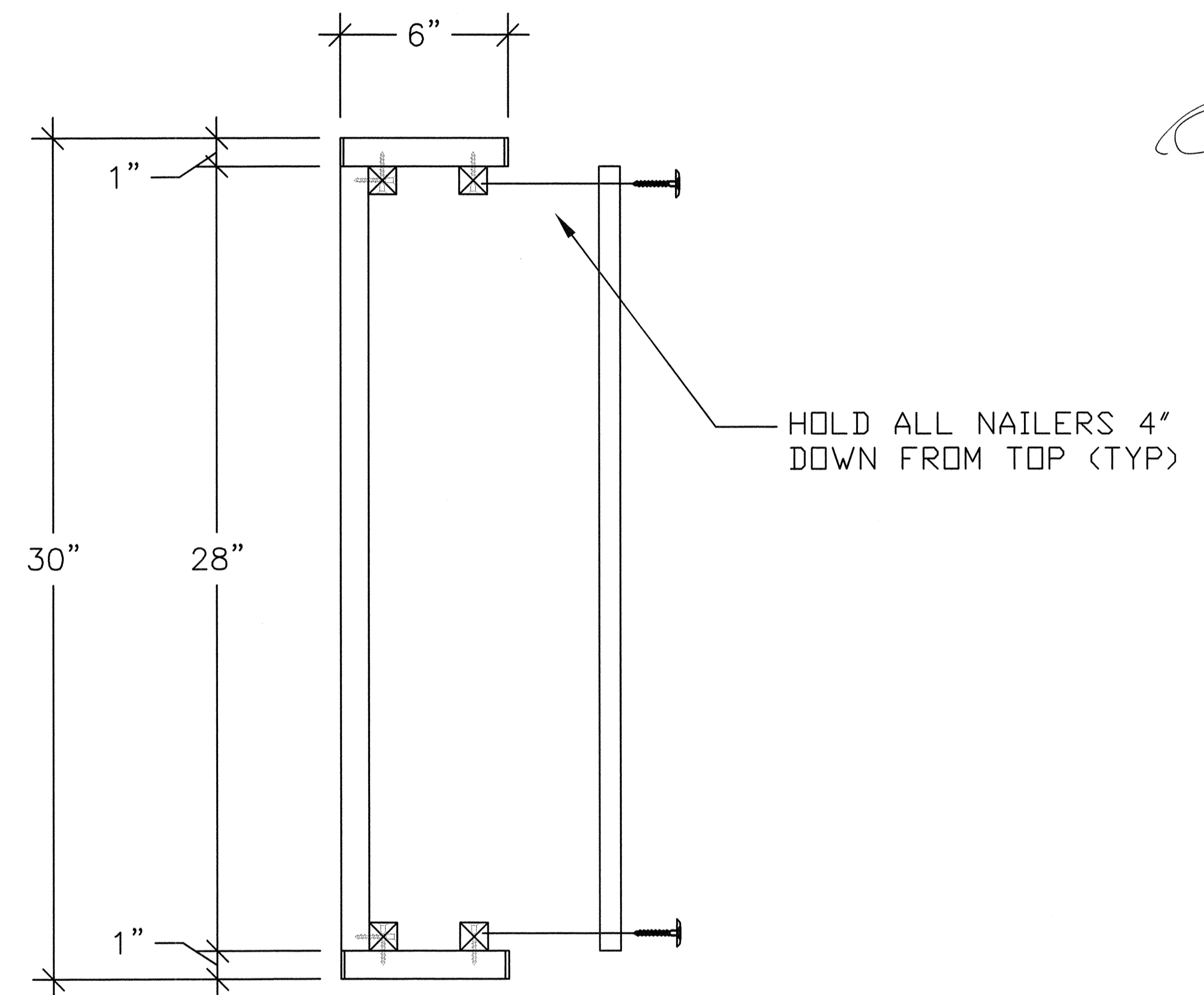


1 CASEWORK UTILITIES SHAFT ELEVATION
A7.8 SCALE: 1-1/2" = 1'-0"

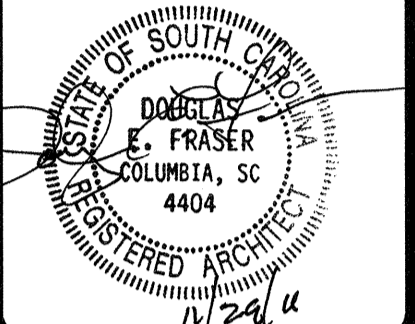


2 CASEWORK UTILITIES SHAFT AXONOMETRIC
A7.8 SCALE: 1-1/2" = 1'-0"



3 CASEWORK UTILITIES SHAFT DETAIL
A7.8 SCALE: 1-1/2" = 1'-0"

Partner In Charge	
DEF	
Project Architect	
DEF	
Drawn By	
MJW	
Date Drawn	
11-28-11	
Revisions	
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
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Project	PHRC LABORATORY 305 RENOVATION
	CASEWORK UTILITIES SHAFT
Sheet Title	



Project Number	
922x06	
Sheet	Of
A7.8	

ELECTRICAL DIAGRAMS

SYMBOL	DESCRIPTIONS
	AUTOMATIC TRANSFER DEVICE
	METERING DEVICES: A--AMMETER, V--VOLTMETER, PF--POWER FACTOR, HZ--FREQUENCY METER
	DIGITAL METER
	FUSE, FUSE SIZE AS INDICATED (50A)
	GROUND CONNECTION
	TRANSFORMER (DELTA -- RESISTANCE GROUNDED WYE SHOWN)
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	LIGHTNING ARRESTOR
	MOTOR STARTER CONTACTOR AND THERMAL OVERLOAD
	KIRK KEY INTERLOCK SYSTEM
	MOLDED CASE CIRCUIT BREAKER WITH RATINGS AS INDICATED
	SWITCH
	DRAW OUT DEVICE
	TEST TERMINAL BLOCK
	WIRING TERMINAL BLOCK
	INDICATOR OR PILOT LIGHT: R--RED, B--BLUE, W--WHITE, G--GREEN, A--AMBER
	ENCLOSED CIRCUIT BREAKER
	COMBINATION MAGNETIC MOTOR STARTER, ABBREVIATION INDICATES TYPE: FVNR, FVR, RVAT, 2S1W, 2S2W, SST
	VARIABLE FREQUENCY CONTROLLER W/FUSED DISCONNECT SWITCH
	VARIABLE FREQUENCY CONTROLLER
	MOTOR -- SINGLE WINDING UNLESS OTHERWISE NOTED: 2S2W = 2 SPEED 2 WINDING 2S1W = 2 SPEED 1 WINDING NUMERALS (IF SHOWN) INDICATE HP
	CONDUCTORS NOT CONNECTED
	CONDUCTORS CONNECTED

LIGHTING SYMBOLS

SYMBOL	DESCRIPTIONS	MH (UON)
	SINGLE POLE TOGGLE SWITCH	48" TOD
	SWITCH -- SUBLETTER INDICATES FIXTURES CONTROLLED	48" TOD
	DOUBLE POLE TOGGLE SWITCH	48" TOD
	THREE-WAY TOGGLE SWITCH (SPDT)	48" TOD
	FOUR-WAY TOGGLE SWITCH (DPDT)	48" TOD
	KEY OPERATED SWITCH	48" TOD
	THREE WAY DIMMER SWITCH CONTROLLING FIXTURES INDICATED WITH LOWERCASE o.	48" TOD
	MANUAL STARTER WITH OVERLOADS	48" TOD
	SWITCH WITH PILOT LIGHT	48" TOD
	DIMMER SWITCH	48" TOD
	LOW VOLTAGE CONTROL SWITCH	48" TOD
	OCCUPANCY SENSOR, WALL MOUNTED (180°)	
	OCCUPANCY SENSOR, CEILING MOUNTED (180°)	
	OCCUPANCY SENSOR, CEILING MOUNTED (360°)	
	FLUORESCENT LIGHTING FIXTURE -- RECESSED, SURFACE, OR PENDANT MOUNTED, TYPE AS SPECIFIED	
	FLUORESCENT LIGHTING FIXTURE -- 2 BALLAST	
	FLUORESCENT INDUSTRIAL LIGHTING FIXTURE	
	FLUORESCENT LIGHTING FIXTURE -- WALL MOUNTED, TYPE AS SPECIFIED	
	LIGHTING FIXTURE -- RECESSED, SURFACE, OR PENDANT MOUNTED	
	LIGHTING FIXTURE -- WALL MOUNTED TYPE AS SPECIFIED	
	WALL WASHER	
	ADJUSTABLE WALL WASHER	
	LIGHTING FIXTURE ON EMERGENCY OR NIGHT LIGHT CIRCUIT	
	EXIT SIGN -- CEILING OR PENDANT MOUNTED (SHADED PORTION INDICATES FACE)	
	EXIT SIGN -- WALL MOUNTED -- END, BACK	
	EXIT SIGN WITH DIRECTIONAL ARROWS	

POWER SYMBOLS

SYMBOL	DESCRIPTIONS	MH (UON)
	SIMPLEX RECEPTACLE	18" CTR
	DUPLEX RECEPTACLE. 'E' (IF SHOWN) INDICATES CONNECTED TO EMERGENCY CIRCUIT.	18" CTR
	DUPLEX RECEPTACLE, FLOOR MOUNTED	
	DUPLEX RECEPTACLE, SPLIT WIRED -- TOP HALF SWITCHED	18" CTR
	DUPLEX RECEPTACLE, CEILING MOUNTED	
	PEDESTAL TYPE DUPLEX RECEPTACLE	
	SPECIAL RECEPTACLE: 20A, 2P, 3W, 208V NEMA 6-20R	18" CTR
	SPECIAL RECEPTACLE: 30A, 2P, 3W, 208V NEMA 6-30R	18" CTR
	SPECIAL RECEPTACLE: 20A, 3P, 4W, 208/120V NEMA 14-20	18" CTR
	SPECIAL RECEPTACLE: 30A, 3P, 4W, 208V NEMA 15-30	18" CTR
	SPECIAL RECEPTACLE, FLOOR MOUNTED, NEMA 6-20R	
	PEDESTAL TYPE SPECIAL RECEPTACLE, NEMA 6-20R	
	DOUBLE DUPLEX RECEPTACLE	18" CTR
	RECEPTACLE MOUNTED 6" ABOVE BACK SPLASH OR COUNTER	
	GROUND FAULT INTERRUPTER TYPE RECEPTACLE	18" BOD
	EMERGENCY POWER OFF SWITCH	48" TOD
	JUNCTION BOX	
	MECHANICAL TERMINAL UNIT CONNECTION	
	ENCLOSED CIRCUIT BREAKER	
	NON-FUSED DISCONNECT SWITCH, 30A, 3P (UNLESS OTHERWISE NOTED)	
	FUSED DISCONNECT SWITCH -- FUSE SIZE AS INDICATED (40A)	
	MAGNETIC MOTOR STARTER	
	COMBINATION MAGNETIC MOTOR STARTER, ABBREVIATION INDICATES TYPE: FVNR, FVR, RVAT, 2S1W, 2S2W, SST	
	VARIABLE FREQUENCY CONTROLLER W/FUSED DISCONNECT SWITCH	
	MOTOR -- NUMERALS (IF SHOWN) INDICATE HP	
	GENERATOR -- NUMERALS (IF SHOWN) INDICATE KW	
	MANUAL MOTOR STARTER WITH THERMAL OVERLOADS	
	PANELBOARD	
	DISTRIBUTION PANELBOARD	
	TRANSFORMER	
	RACEWAY "UP" OR "TOWARDS"	
	RACEWAY "DOWN" OR "AWAY"	
	CIRCUIT CONCEALED IN WALLS OR CEILING SPACE. CONDUCTORS SHALL BE MINIMUM 2#12 AWG AND 1#12 AWG GROUND IN 3/4" CONDUIT, (UNLESS OTHERWISE NOTED)	
	BRANCH CIRCUIT HOMERUN TO PANELBOARD. QUANTITY OF CIRCUITS INDICATED BY ARROWS. NUMBER OF CONDUCTORS SHALL BE MINIMUM 4#12 AWG AND 1#12 AWG GROUND IN 3/4" CONDUIT, (UNLESS OTHERWISE NOTED)	
	RACEWAY RUN EXPOSED. CONDUCTORS SHALL BE MINIMUM 2#12 AWG AND 1#12 AWG IN 3/4" CONDUIT, (UNLESS OTHERWISE NOTED)	
	MULTI-OUTLET ASSEMBLY WITH RECEPTACLES LOCATED WHERE INDICATED	
	2 CELL MULTI-OUTLET ASSEMBLY WITH COMMUNICATION DEVICES AND RECEPTACLES LOCATED WHERE INDICATED	
	MULTI-OUTLET ASSEMBLY WITH COMMUNICATION OUTLETS LOCATED WHERE INDICATED	
	FLEXIBLE CONDUIT	

ELECTRICAL DRAWING

PRESENTATION

SYMBOL	DESCRIPTIONS
	REVISION NUMBER 2
	DRAWING NOTE NUMBER 2
	EQUIPMENT TAG NUMBER -- REFER TO EQUIPMENT SCHEDULE
	SECTION/ELEVATION IDENTIFICATION
	PART PLAN AND DETAIL IDENTIFICATION
	EXISTING LINE TYPE
	NEW ELECTRICAL WORK LINE TYPE
	FUTURE ELECTRICAL WORK LINE TYPE
	DEMOLITION LINE TYPE ON DEMOLITION DRAWINGS

SPECIAL SYSTEMS SYMBOLS

SYMBOL	DESCRIPTIONS	MH (UON)
	HORN TYPE SPEAKER	GENERAL NOTE 5
	FIRE ALARM FLASHING STROBE LIGHT -- WALL MOUNTED	GENERAL NOTE 5
	FIRE ALARM HORN	GENERAL NOTE 5
	COMBINATION FIRE ALARM HORN AND FLASHING STROBE LIGHT	GENERAL NOTE 5
	MAGNETIC DOOR HOLDER	
	FIRE ALARM ANNUNCIATOR PANEL	
	FIRE ALARM CONTROL PANEL	
	RESCUE ASSISTANCE MASTER CONTROL PANEL	48" TOD
	FIRE ALARM TRANSPONDER	
	RESCUE ASSISTANCE REMOTE STATION	48" TOD
	DIGITAL ALARM COMMUNICATOR TRANSMITTER	
	DOOR SOLENOID, ELECTRIC STRIKE -- LOCKING DEVICE CONNECTION POINT	
	FIRE ALARM PULL STATION	48" TOD
	HEAT DETECTOR	
	SMOKE DETECTOR (PHOTOELECTRIC), AB INDICATES AUDIBLE BASE, E INDICATES ELEVATOR CONTROLS	
	SMOKE DETECTOR (IONIZATION)	
	DUCT SMOKE DETECTOR	
	FIRE ALARM SYSTEM ADDRESSABLE RELAY -- CONTROL	
	FIRE ALARM SYSTEM ADDRESSABLE RELAY -- MONITOR	
	FIRE ALARM SYSTEM REMOTE ALARM LIGHT	
	FLOW SWITCH CONNECTION	
	TAMPER SWITCH CONNECTION	
	FIRE ALARM LINEAR BEAM SMOKE DETECTOR TRANSMITTER & RECEIVER	
	FIREMAN'S TELEPHONE JACK	48" TOD
	MONITOR SYSTEM JB	36" CTR
	CEILING SPEAKER, F -- FIRE ALARM	
	AMPLIFIER	
	KEYPAD	48" TOD
	CARD READER	48" TOD
	DOOR ALARM CONTACT	
	PROVIDE 4" SQUARE SQUARE, 2 1/8" DEEP BACKBOX WITH 1 GANG PLASTER RING AND 1" CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING FOR WALL MOUNTED TELEPHONE OUTLET ROUGH-IN	54" CTR
	PROVIDE 4" SQUARE SQUARE, 2 1/8" DEEP BACKBOX WITH 1 GANG PLASTER RING AND 1" CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING FOR TELECOMMUNICATIONS OUTLET ROUGH-IN	
	PROVIDE 4" SQUARE SQUARE, 2 1/8" DEEP BACKBOX WITH 1 GANG PLASTER RING AND 1" CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING FOR DATA OUTLET ROUGH-IN	18" CTR
	PROVIDE 4" SQUARE SQUARE, 2 1/8" DEEP BACKBOX WITH 1 GANG PLASTER RING AND 1" CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING FOR CATV OUTLET ROUGH-IN	18" CTR

CIRCUIT DESIGNATIONS

	LIGHTING
	*CIRCUIT DESIGNATION
	SWITCH DESIGNATION
	POWER
	*CIRCUIT DESIGNATION
	* SEE NOTES FOR PANEL DESIGNATIONS FOR EACH AREA.

EQUIPMENT DESIGNATIONS

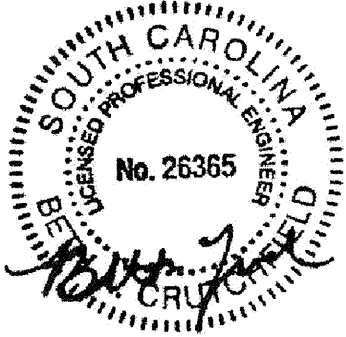
DESIGNATION	DESCRIPTIONS
SWGR	SWITCHGEAR
SWBD	SWITCHBOARD
PNL	PANELBOARD
MCC	MOTOR CONTROL CENTER
XFMR	TRANSFORMER

ELECTRICAL ABBREVIATIONS

A, AMP	-- AMPERE	KVAR	-- KILOVOLT AMPERES REACTIVE
AC	-- ALTERNATING CURRENT	KW	-- KILOWATTS
A/C	-- AIR CONDITIONING	KWH	-- KILOWATT HOUR
AFF	-- ABOVE FINISHED FLOOR	LA	-- LIGHTNING ARRESTOR
AFG	-- ABOVE FINAL GRADE	LC	-- LIGHTING CONTACTOR
AHU	-- AIR HANDLING UNIT	LTG	-- LIGHTING
AIC	-- AMPS INTERRUPTING CAPACITY	LTNG	-- LIGHTNING
ALT	-- ALTERNATE	LP	-- LIGHTING PANEL
ANN	-- ANNUNCIATOR	LRA	-- LOCKED ROTOR AMPERES
APPROX	-- APPROXIMATELY	MATV	-- MASTER ANTENNA TELEVISION
ARCH	-- ARCHITECT	MCB	-- MAIN CIRCUIT BREAKER
ATC	-- AUTOMATIC TEMPERATURE CONTROL	MCC	-- MOTOR CONTROL CENTER
ATS	-- AUTOMATIC TRANSFER SWITCH	MEH	-- METAL HALIDE
AWG	-- AMERICAN WIRE GAUGE	MH	-- MANHOLE, MOUNTING HEIGHT
BAS	-- BUILDING AUTOMATION SYSTEM	MLO	-- MAIN LUGS ONLY
BFC	-- BELOW FINISHED CEILING	MSP	-- MOTOR STARTER PANEL
BFG	-- BELOW FINISHED GRADE	MTD	-- MOUNTED
BLDG	-- BUILDING	MV	-- MERCURY VAPOR
BOD	-- BOTTOM OF DEVICE	NC	-- NORMALLY CLOSED
C, CND	-- CONDUIT	NEC	-- NATIONAL ELECTRICAL CODE
CATV	-- CABLE TELEVISION	NFSS	-- NON-FUSED SAFETY SWITCH
CB	-- CIRCUIT BREAKER	NO	-- NUMBER, NORMALLY OPEN
CCTV	-- CLOSED CIRCUIT TELEVISION	OC	-- ON CENTER
CKT	-- CIRCUIT	OCFI	-- OWNER FURNISHED CONTRACTOR INSTALLED
CL	-- CURRENT LIMITING	OFOI	-- OWNER INSTALLED
CLG	-- CEILING	OH	-- OVERHEAD
CONN	-- CONNECT	Ø, PH	-- PHASE
CPT	-- CONTROL POWER TRANSFORMER	P	-- POLE
CT	-- CURRENT TRANSFORMER	PB	-- PUSHBUTTON
CTR	-- CENTER	PF	-- POWER FACTOR
CU,CO	-- COPPER	PFCC	-- POWER FACTOR CORRECTION CAPACITOR
CX	-- CONNECT TO EXISTING	PL	-- PILOT LIGHT
DC	-- DIRECT CURRENT	PLC	-- PROGRAMMABLE LIGHTING CONTROL
DISC	-- DISCONNECT	PNL	-- PANEL
DN	-- DOWN	PP	-- POWER PANEL
DP	-- DISTRIBUTION PANEL	PR	-- PAIR
DPST	-- DOUBLE POLE SINGLE THROW	PT	-- POTENTIAL TRANSFORMER
DPDT	-- DOUBLE POLE DOUBLE THROW	PVC	-- POLYVINYL CHLORIDE
DT	-- DOUBLE THROW	Pp	-- PUMP
DWG	-- DRAWING	QTY	-- QUANTITY
E, EMERG	-- EMERGENCY	RCS	-- REMOTE CONTROL SWITCH
EA	-- EACH	REC, RECP	-- RECEPTACLE
EC	-- EMPTY CONDUIT	REQ'D	-- REQUIRED
EF	-- EXHAUST FAN	RFI	-- RADIO FREQUENCY INTERFERENCE
EH	-- ELECTRIC HEATER	RGS	-- RIGID GALVANIZED STEEL
ELEC	-- ELECTRIC	RLA	-- RUNNING LOAD AMPERES
ELEV	-- ELEVATION	RM	-- ROOM
ETR	-- EXISTING TO REMAIN	RVAT	-- REDUCED VOLTAGE AUTO TRANSFORMER
EX	-- EXISTING	RX	-- REMOVE EXISTING
EXP	-- EXPOSED	SC	-- SURGE CAPACITOR
EWC	-- ELECTRIC WATER COOLER	SEC	-- SECONDARY
FR	-- FRAME	SN, S/N	-- SOLID NEUTRAL
FA	-- FIRE ALARM	SP	-- SURGE PROTECTION
FAAP	-- FIRE ALARM ANNUNCIATOR PANEL	SPDT	-- SINGLE POLE DOUBLE THROW
FACP	-- FIRE ALARM CONTROL PANEL	SS	-- SAFETY SWITCH
FBO	-- FURNISHED BY OTHERS	SST	-- SOLID STATE
FC	-- FAN COIL	ST	-- SINGLE THROW
FDR	-- FEEDER	SW	-- SWITCH
FLA	-- FULL LOAD AMPERES	SWBD	-- SWITCHBOARD
FLR	-- FLOOR	TBR	-- TO BE REMOVED
FU	-- FUSED AND FUSIBLE	TC	-- TIME CLOCK
FUSS	-- FUSED SAFETY SWITCH	TEL, TELE	-- TELEPHONE
FVR	-- FULL VOLTAGE REVERSING	TOD	-- TOP OF DEVICE
FVNR	-- FULL VOLTAGE NON-REVERSING	TRANS/XFMR	-- TRANSFORMER
GEN	-- GENERATOR, GENERAL	TH	-- TUNGSTEN HALOGEN
GFI	-- GROUND FAULT INTERRUPTER	TTB	-- TELEPHONE TERMINAL BOARD
GFR	-- GROUND FAULT RELAY	TW	-- TWISTED
GRD	-- GROUND	TYP	-- TYPICAL
GRS	-- GALVANIZED RIGID STEEL	UG	-- UNDERGROUND
HID	-- HIGH INTENSITY DISCHARGE	UH	-- UNIT HEATER
HOA	-- HAND-OFF-AUTOMATIC	UON	-- UNLESS OTHERWISE NOTED
HP	-- HORSEPOWER	V	-- VOLTS
HPS	-- HIGH PRESSURE SODIUM	VFC	-- VARIABLE FREQUENCY CONTROLLER
HTR	-- HEATER	W	-- WATTS, WIRE
HV	-- HIGH VOLTAGE	W/	-- WITH
HZ	-- HERTZ	WP	-- WEATHER-PROOF
IG	-- ISOLATED GROUND	XP	-- EXPLOSION PROOF
JB	-- JUNCTION BOX	2S1W	-- 2 SPEED SINGLE WINDING
KCMIL	-- THOUSAND CIRCULAR MILS	2S2W	-- 2 SPEED DOUBLE WINDING
KV	-- KILOVOLTS		
KVA	-- KILOVOLT AMPERES		

GENERAL NOTES:

1. THIS IS A STANDARD SYMBOL LIST, SOME SYMBOLS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS.
2. REFER TO SPECIFICATIONS FOR DETAILED REQUIREMENTS.
3. PLAN & SECTION SYMBOLS MAY ALSO BE USED ON RISER DIAGRAMS.
4. ON SINGLE LINE DIAGRAMS FOR 3 PHASE SYSTEMS, DEVICE QUANTITY = 3 UNLESS OTHERWISE NOTED.
5. DEVICE SHALL BE MOUNTED A MINIMUM OF 80" AFF TO BOTTOM OF DEVICE LENS AND BELOW THE FINISHED CEILING OF NOT LESS THAN 6"
6. UNLESS OTHERWISE NOTED ALL INTERIOR CONDUITS AND BOXES SHALL BE CONCEALED.



Partner In Charge
DSC
Project Engineer
BAC
Drawn By
PAM
Date Drawn
11-28-11

Revisions

No.	Date.
No.	Date.
No.	Date.
No.	Date.
No.	Date.
No.	Date.
No.	Date.
No.	Date.

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-8639
FAX: 843-971-8641
www.rmfi.com
RMF PROJECT NUMBER: 311034.A0

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PHRC LABORATORY 305 RENOVATION

Project

Sheet Title
ELECTRICAL LEGEND AND ABBREVIATIONS

JHS
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1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

Project Number
922x06

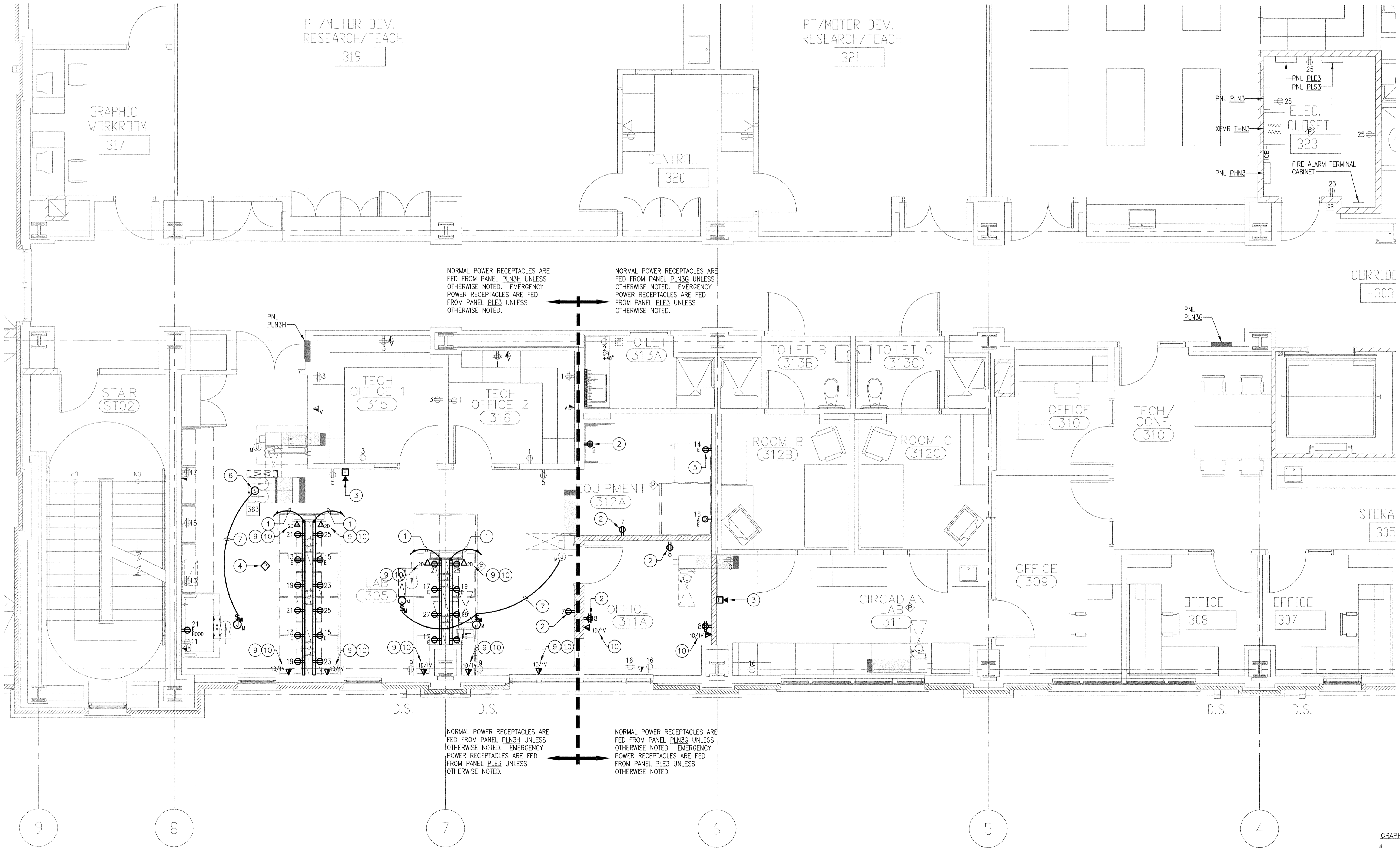
Sheet Or
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GENERAL FIRE ALARM NOTES:

1. EXISTING FIRE ALARM SYSTEM IS BY EDWARDS SYSTEMS TECHNOLOGY (EST). RE-CERTIFY FIRE ALARM SYSTEM AFTER EXISTING DEVICES HAVE BEEN RELOCATED.

DRAWING NOTES:

- 1 PROVIDE HOMERUN CONCEALED IN UTILITY CHASE.
- 2 RELOCATED RECEPTACLE.
- 3 RELOCATED FIRE ALARM STROBE DEVICE. COORDINATE WITH ARCHITECT FOR PATCHING OF EXISTING WALL.
- 4 RELOCATED SMOKE DETECTOR.
- 5 PROVIDE NEW EMERGENCY 120V CIRCUIT TO RECEPTACLE.
- 6 RELOCATED 120V MECHANICAL TERMINAL UNIT CONNECTION.
- 7 CONNECT TO EXISTING 120V MECHANICAL TERMINAL UNIT CIRCUIT ALREADY IN AREA.
- 8 NOT USED.
- 9 MOUNT 6" ABOVE BACK SPLASH OR COUNTER.
- 10 VOICE AND DATA REQUIREMENTS ARE FOR REFERENCE ONLY. COORDINATE TYPES AND QUANTITY WITH OWNER.



GRAPHIC SCALE
SCALE: 1/4"=1'-0"
UNIT OF MEASURE: FEET

Partner In Charge	DSC
Project Engineer	BAC
Drawn By	PAM
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9639
FAX: 843-971-9641
www.rmfi.com
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Project
PHRC LABORATORY 305 RENOVATION

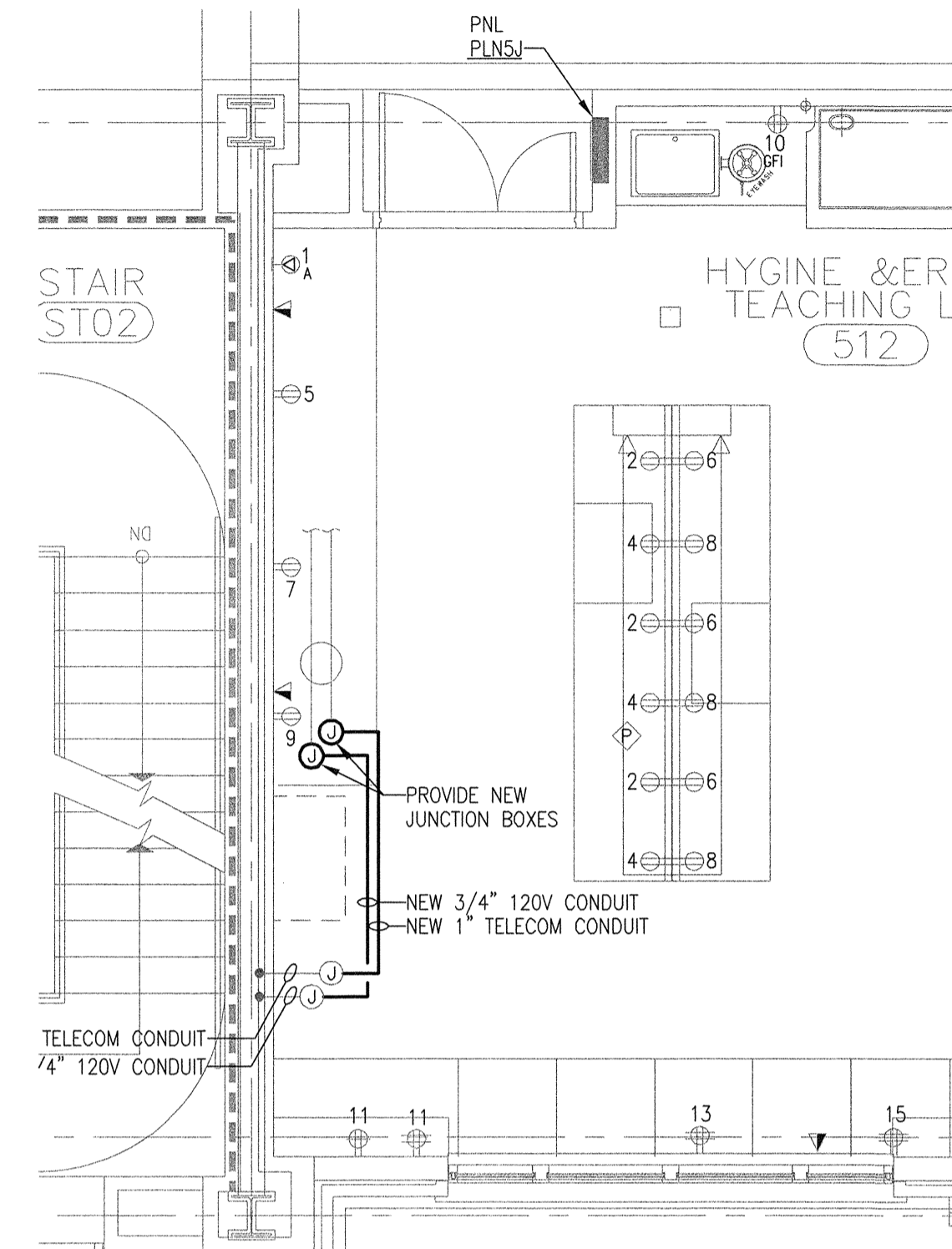
Sheet Title
**PARTIAL THIRD FLOOR PLAN -
ELECTRICAL POWER NEW WORK**

JHS Architecture
Integrated Design

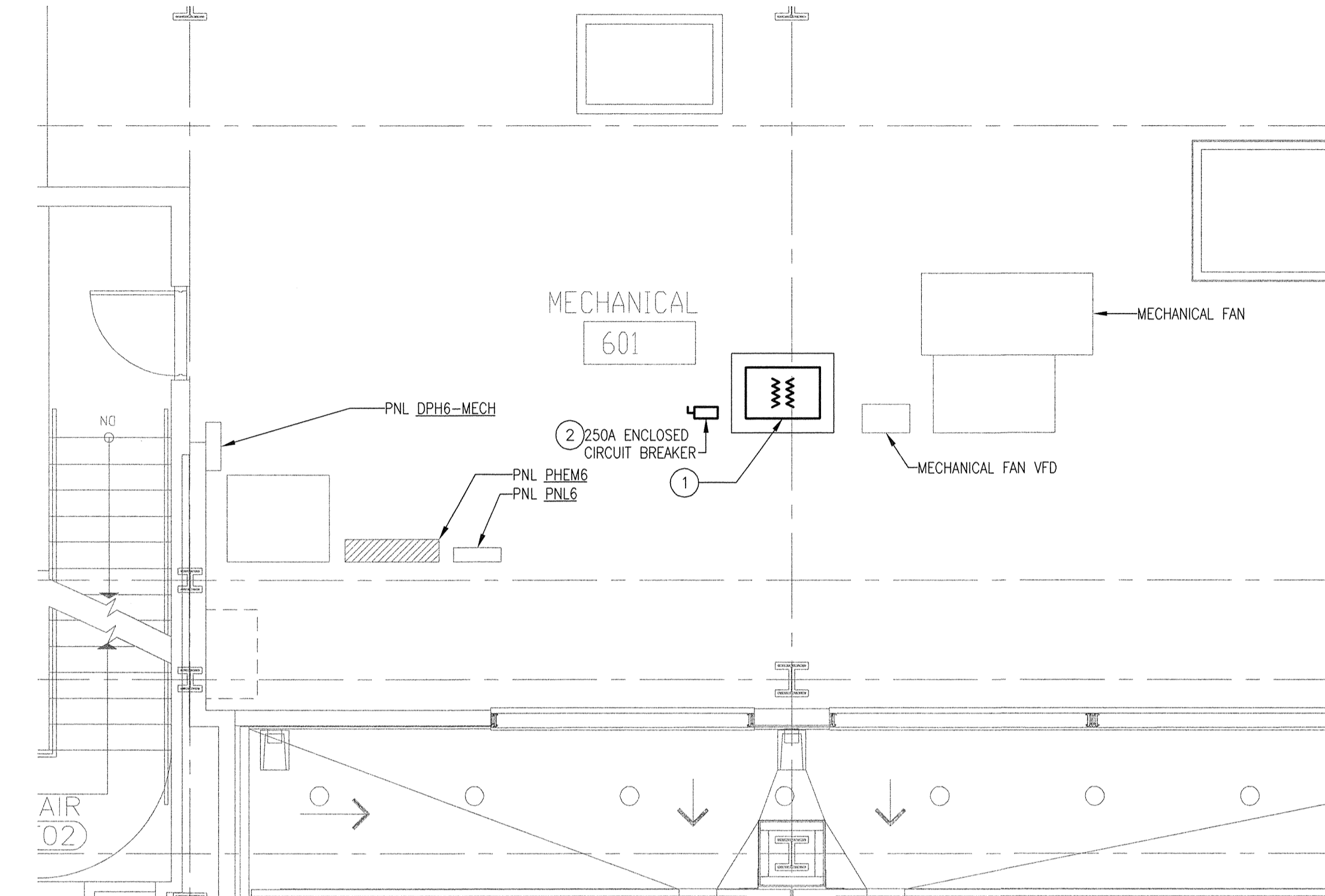
1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

Project Number
922x06

Sheet
E1.1

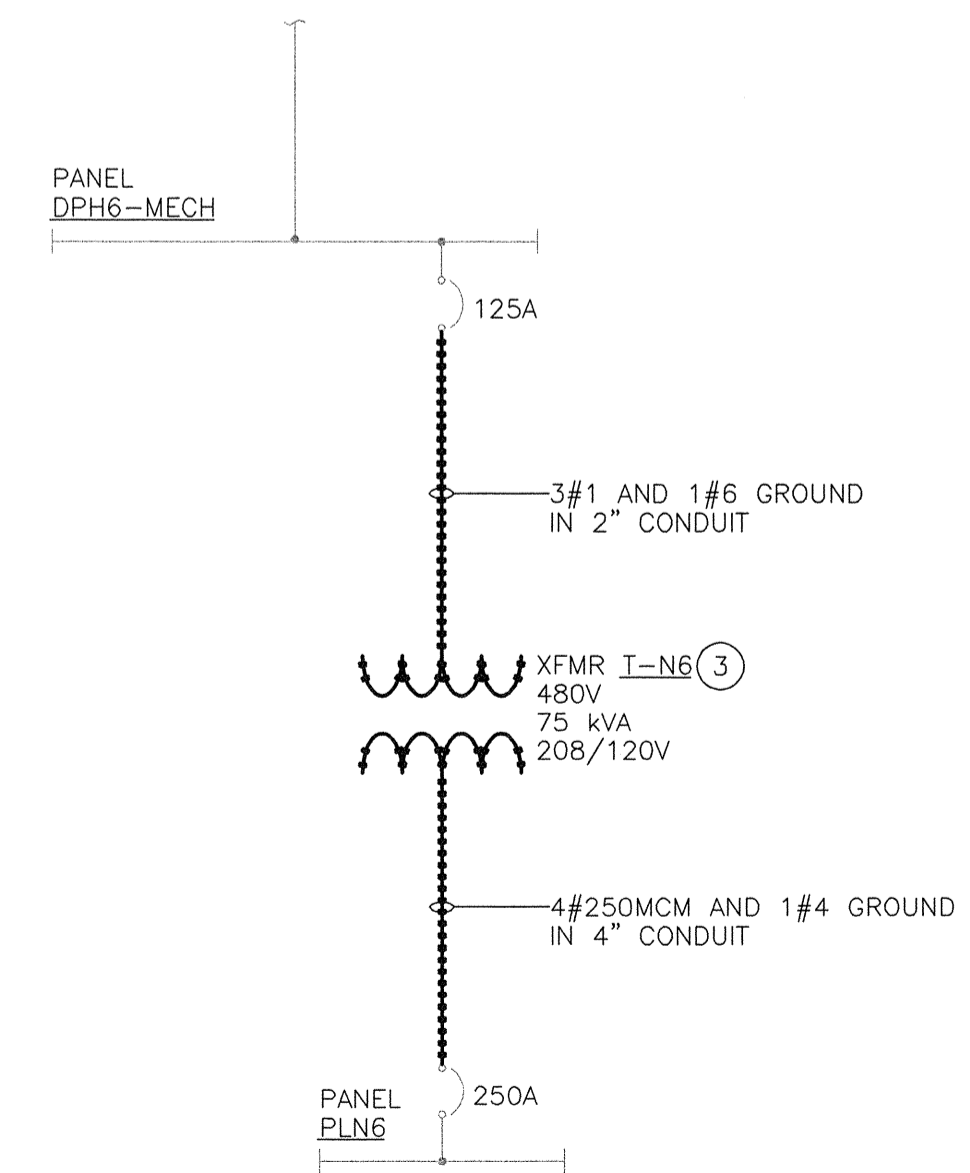
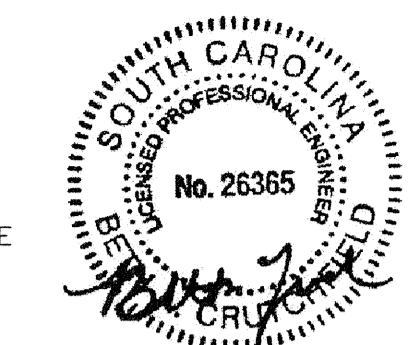


PARTIAL FIFTH FLOOR-
ELECTRICAL NEW WORK
SCALE: 1/4"=1'-0"



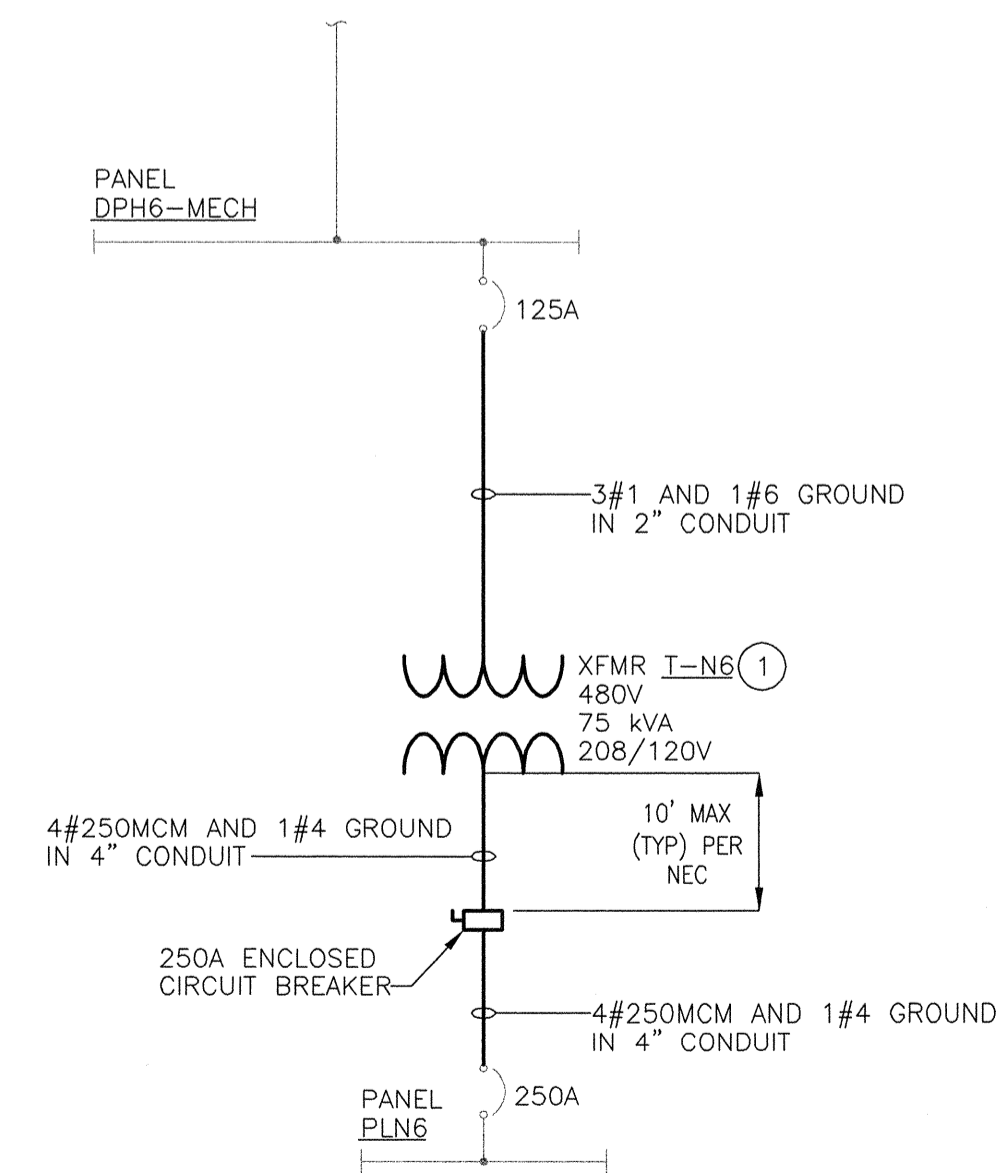
PENTHOUSE - ELECTRICAL NEW WORK
SCALE: 1/4"=1'-0"

- DRAWING NOTES:**
- RELOCATED 480V~208/120V TRANSFORMER T-N6. PROVIDE 4" EQUIPMENT PAD.
 - PROVIDE KINDORF SUPPORTS FOR MOUNTING.
 - EXISTING 480V~208/120V TRANSFORMER T-N6 TO BE RELOCATED.



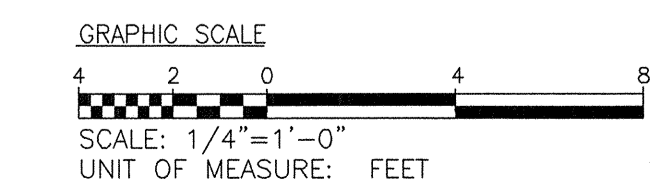
SINGLE LINE DIAGRAM - DEMOLITION

SCALE: NONE 1



SINGLE LINE DIAGRAM - NEW WORK

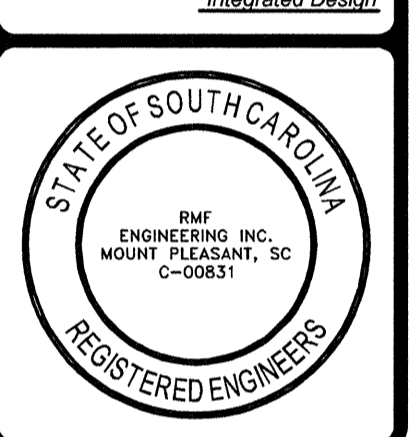
SCALE: NONE 2



Partner In Charge	DSC
Project Engineer	BAC
Drawn By	FAM
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
No.	Date
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No.	Date
No.	Date
No.	Date
No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9839
FAX: 843-971-9841
www.rmfi.com
RMF PROJECT NUMBER: 311034.00

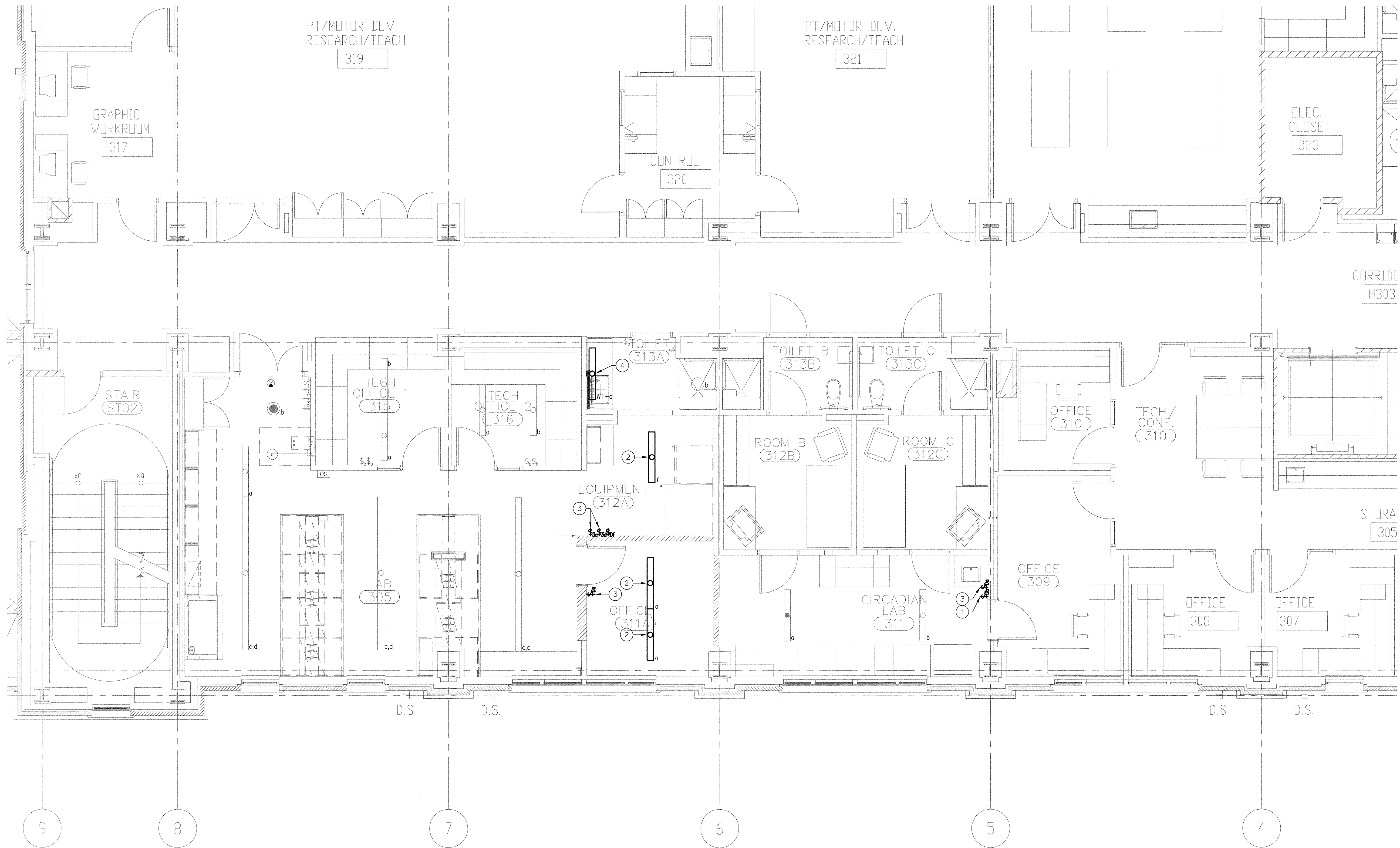
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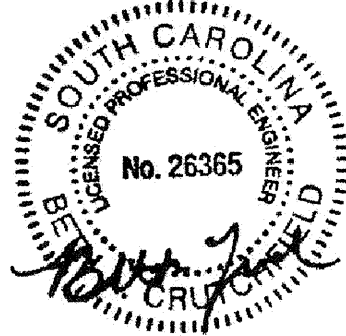
Project	PHRC LABORATORY 305 RENOVATION
Sheet Title	PARTIAL THIRD FLOOR PLAN - ELECTRICAL POWER NEW WORK

JHS Architecture
Integrated Design
1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

Project Number	922x06
Sheet	Of
	E1.2



- DRAWING NOTES:
- 1 PROVIDE A NEW SINGLE POLE, DIMMABLE LIGHTING SWITCH IN EXISTING SWITCH LOCATION.
 - 2 RELOCATED PENDANT MOUNTED LIGHTING FIXTURE. CONNECT TO LIGHTING CIRCUIT AND SWITCH LEGS AS INDICATED ON THE PLANS.
 - 3 RELOCATED LIGHTING SWITCH.
 - 4 CONNECT TO EXISTING LIGHTING CIRCUIT ALREADY IN AREA.



Partner In Charge	DSC
Project Engineer	BAC
Drawn By	PAM
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
No.	Date
No.	Date
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No.	Date
No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9639
FAX: 843-971-9641
www.rmfi.com
RMF PROJECT NUMBER: 311034.00

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JHS Architecture
Integrated Design

STATE OF SOUTH CAROLINA
RMF ENGINEERING, INC.
MOUNT PLEASANT, SC
C-00831
REGISTERED ENGINEERS

Project

PHRC LABORATORY 305 RENOVATION

Sheet Title

PARTIAL THIRD FLOOR PLAN -
ELECTRICAL LIGHTING NEW WORK

JHS
Architecture
Integrated Design

1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

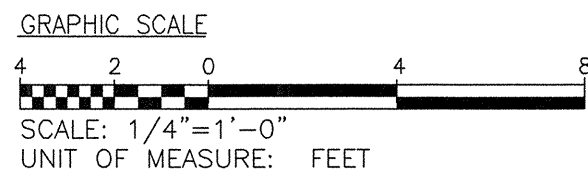
Project Number

922x06

Sheet

Of

E2.1



LIGHTING FIXTURE SCHEDULE														
FIXTURE TYPE	DESCRIPTION	LOUVER/ LENS	LAMPS				BALLAST		VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MANUFACTURER	FIXTURE TYPE
			TYPE	WATTAGE	QTY.	COLOR TEMP.	TYPE	QTY.						
W1	4' WALL MOUNTED FLUORESCENT	ACRYLIC	T8	32	2	3500°K	ELECTRONIC, SEE NOTE #1	1	UNV	62	SURFACE	MOUNT 7'-6" AFF BOD	LITHONIA #WP-2-32-MVOLT-GE8101S WILLIAMS #29-4-232-A-EB2-UNV COLUMBIA #WPM4-232-EU	W1

LIGHTING FIXTURE SCHEDULE NOTES:

- REFER TO PROJECT MANUAL SPECIFICATIONS FOR EQUIPMENT/ PRODUCT PERFORMANCE CRITERIA.
- MANUFACTURERS LISTED IN THE LIGHTING FIXTURE SCHEDULE ARE USED TO ESTABLISH A BASIS OF DESIGN FOR QUALITY AND PERFORMANCE. PROVIDE MANUFACTURERS LISTED OR AN APPROVED ALTERNATE EQUAL MANUFACTURER.



PANEL NO.: PLN3H				CLIENT: USC SPH																																																																							
USAGE: LIGHTING/RECEPTACLE				MOUNTING: SURFACE																																																																							
LOCATION: 3RD FLOOR RM 305				PANEL TYPE: LIGHTING & APPLIANCE																																																																							
PHASES 3				ENGINEER: BAC																																																																							
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<table><tr><td colspan="4">PANEL LOADS</td><td>CONNECTED (KVA)</td><td>DIVERSITY FACTOR %</td><td>DEMAND (KVA)</td></tr><tr><td colspan="4">LIGHTING</td><td>0.00</td><td>100%</td><td>0.00</td></tr><tr><td colspan="4">HVAC COOLING*</td><td>0.00</td><td>100%</td><td>0.00</td></tr><tr><td colspan="4">HVAC HEATING*</td><td>0.00</td><td>100%</td><td>0.00</td></tr><tr><td colspan="4">MOTORS</td><td>0.00</td><td>100%</td><td>0.00</td></tr><tr><td colspan="4">KITCHEN EQUIPMENT</td><td>0.00</td><td>100%</td><td>0.00</td></tr><tr><td colspan="4">RECEPTACLES (1st 10 KVA)</td><td>2.40</td><td>100%</td><td>2.40</td></tr><tr><td colspan="4">RECEPTACLES (>10 KVA)</td><td>0.00</td><td>50%</td><td>0.00</td></tr><tr><td colspan="4">MISCELLANEOUS</td><td>0.00</td><td>100%</td><td>0.00</td></tr></table> <p>* LOAD VALUES HAVE BEEN ADJUSTED TO REFLECT WORST CASE LOADING FOR EQUIPMENT WITH BOTH COOLING AND HEATING SYSTEMS.</p>													PANEL LOADS				CONNECTED (KVA)	DIVERSITY FACTOR %	DEMAND (KVA)	LIGHTING				0.00	100%	0.00	HVAC COOLING*				0.00	100%	0.00	HVAC HEATING*				0.00	100%	0.00	MOTORS				0.00	100%	0.00	KITCHEN EQUIPMENT				0.00	100%	0.00	RECEPTACLES (1st 10 KVA)				2.40	100%	2.40	RECEPTACLES (>10 KVA)				0.00	50%	0.00	MISCELLANEOUS				0.00	100%	0.00
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SCHEDULE KEY	
LIGHTING FIXTURE SCHEDULE	
PANEL PLN3H	PANEL PLE3

Partner In Charge	DSC
Project Engineer	BAC
Drawn By	PAM
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9539
FAX: 843-971-9541
www.rmf.com
RMF PROJECT NUMBER: 311034.A0

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STATE OF SOUTH CAROLINA
REGISTERED ENGINEERS
RMF ENGINEERING INC.
MOUNT PLEASANT, SC
C-00831

Project	PHRC LABORATORY 305 RENOVATION
Sheet Title	ELECTRICAL SCHEDULES

JHS Architecture
Integrated Design

1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
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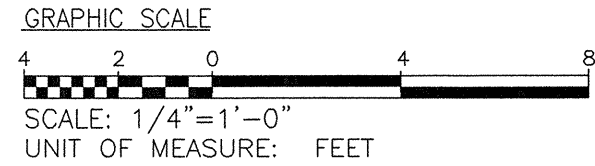
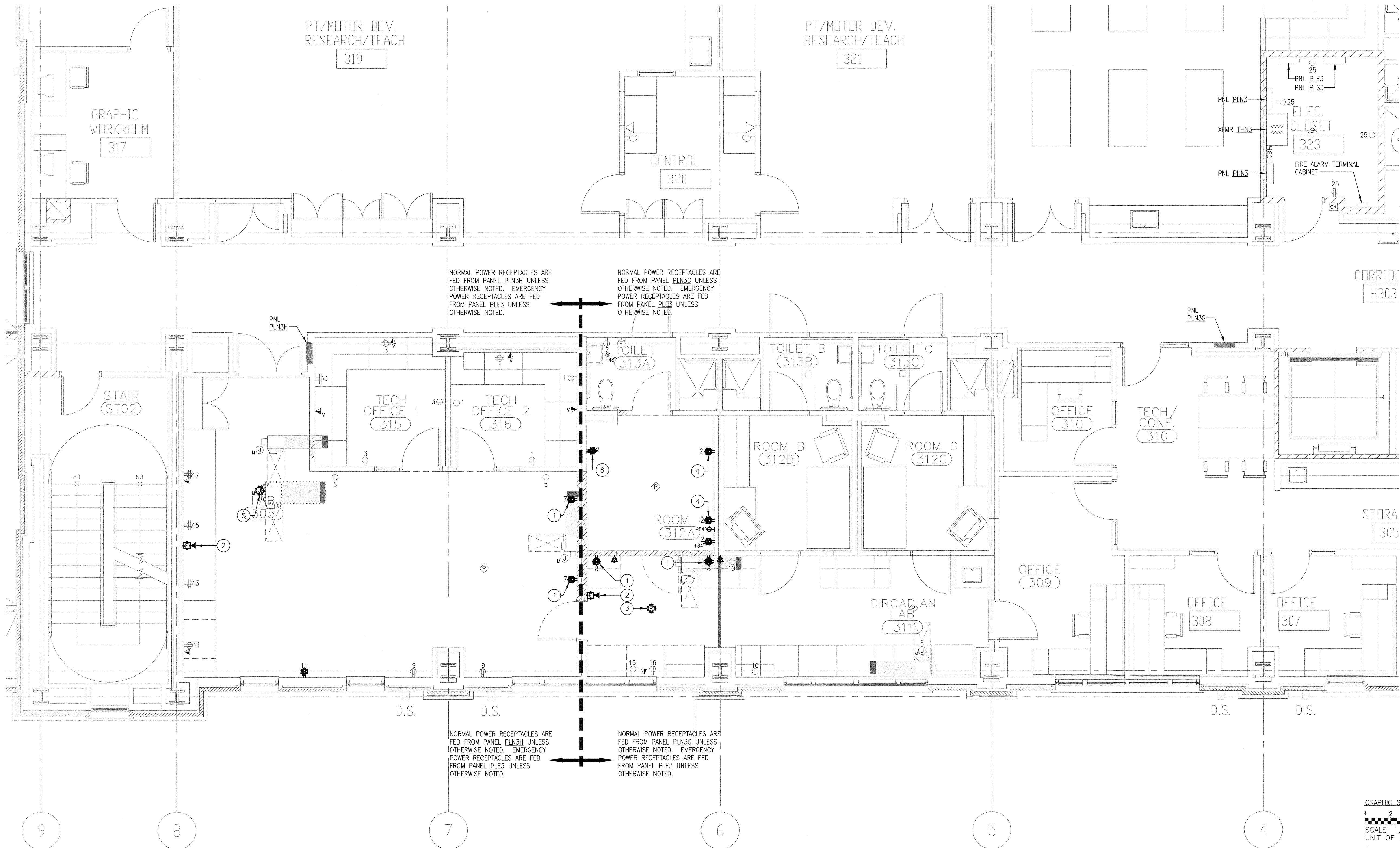
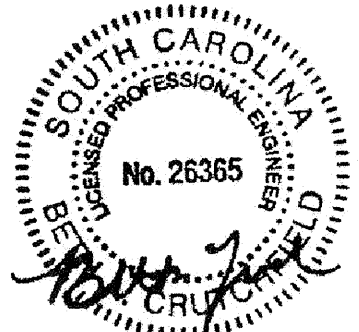
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E6.1	

DEMOLITION NOTES:

- 1. EXISTING CONDITIONS SUCH AS LIGHTING, RECEPTACLES, ETC. WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL ELECTRICAL ITEMS IN THE FIELD PRIOR TO THE START OF ANY WORK.
- 2. SHOULD THE CONTRACTOR ENCOUNTER ANY MAJOR ELECTRICAL ITEMS, I.E. PANELS, FEEDERS, JUNCTION BOXES ETC. WHICH ARE NOT ADDRESSED ON THE DRAWINGS, HE SHALL BRING THEM TO THE ATTENTION OF THE ENGINEER. THE ENGINEER WILL REVIEW THE ITEM IN QUESTION AND GIVE THE NECESSARY DIRECTION.
- 3. THE OWNER SHALL BE GIVEN A FIRST RIGHT OF REFUSAL FOR ALL ELECTRICAL EQUIPMENT WHICH IS TO BE REMOVED. ALL ELECTRICAL EQUIPMENT WHICH IS DESIRED BY THE OWNER SHALL BE STORED ON THE SITE WHERE DIRECTED BY THE OWNER. THE CONTRACTOR SHALL PROMPTLY DISPOSE OF ALL ELECTRICAL ITEMS WHICH ARE REMOVED AND THE OWNER DOES NOT WANT TO KEEP.
- 4. IN GENERAL, ALL EXISTING ELECTRICAL DEVICES, LIGHTING FIXTURES, PANELS, CONDUITS, WIRING, JUNCTION BOXES, ETC. SHALL BE REMOVED IN THEIR ENTIRETY. THESE ITEMS ARE INDICATED WITH HEAVY DASHED LINES. ITEMS THAT ARE EXISTING TO REMAIN ARE INDICATED WITH A LIGHT CONTINUOUS LINE.
- 5. ALL BRANCH CIRCUIT AND TELEPHONE WIRING WHICH MUST BE IN SERVICE AND WHICH IS DISCONNECTED AS A RESULT OF THE DEMOLITION WORK SHALL BE PROPERLY RECONNECTED.
- 6. EXISTING SMOKE DETECTORS AND DUCT SMOKE DETECTORS SHALL BE TEMPORARILY DISCONNECTED DURING DEMOLITION AND OTHER DUST PRODUCING ACTIVITIES. COORDINATE THE TEMPORARY DISCONNECTION WITH FACILITIES.

DEMOLITION NOTES CONTINUED:

- 7. WHERE EXISTING DEVICES REMAIN IN WALLS WHICH RECEIVE A NEW FINISH, CONTRACTOR SHALL PROVIDE ALL NECESSARY OUTLET BOX EXTENSIONS, PLASTER RINGS, ETC. SO THAT DEVICES INSTALLED IN THE SAME MANNER AS EXISTING (I.E. FLUSH CONCEALED, ETC.).
 - 8. DURING CONSTRUCTION, COORDINATE WORK WITH USC FIRE MARSHAL TO KEEP BUILDING FIRE PROTECTION IN SERVICE.
- DRAWING NOTES:
- 1 EXISTING RECEPTACLE TO BE RELOCATED. EXTEND EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E1.1 FOR NEW LOCATION.
 - 2 EXISTING FIRE ALARM STROBE DEVICE TO BE RELOCATED. EXISTING EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E1.1 FOR NEW LOCATION.
 - 3 EXISTING FIRE ALARM SMOKE DETECTOR TO BE RELOCATED. EXISTING EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E1.1 FOR NEW LOCATION.
 - 4 EXISTING 120V CIRCUIT TO RECEPTACLE TO BE REMOVED. EXISTING RECEPTACLE AND BACKBOX TO REMAIN. A NEW EMERGENCY CIRCUIT SHALL BE PULLED TO THIS LOCATION. SEE DRAWING E1.1 FOR MORE INFORMATION.
 - 5 EXISTING MECHANICAL TERMINAL UNIT TO BE REMOVED. EXISTING 120V CIRCUIT TO BE REUSED. EXTEND EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E1.1 FOR MORE INFORMATION.
 - 6 EXISTING RECEPTACLE TO BE RELOCATED TO ABOVE COUNTER. EXTEND EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E1.1 FOR NEW LOCATION.



Partner In Charge	DSC
Project Engineer	BAC
Drawn By	PAM
Date Drawn	11-28-11
Revisions	
No.	Date
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No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9639
FAX: 843-971-9641
www.rmfi.com
RMF PROJECT NUMBER: 311034-A0

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JHS Architecture
Integrated Design

STATE OF SOUTH CAROLINA
RMF ENGINEERING, INC.
MOUNT PLEASANT, SC
C-60851
REGISTERED ENGINEERS

Project

PHRC LABORATORY 305 RENOVATION

Sheet Title

PARTIAL THIRD FLOOR PLAN -
ELECTRICAL POWER DEMOLITION

JHS
Architecture
Integrated Design

1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

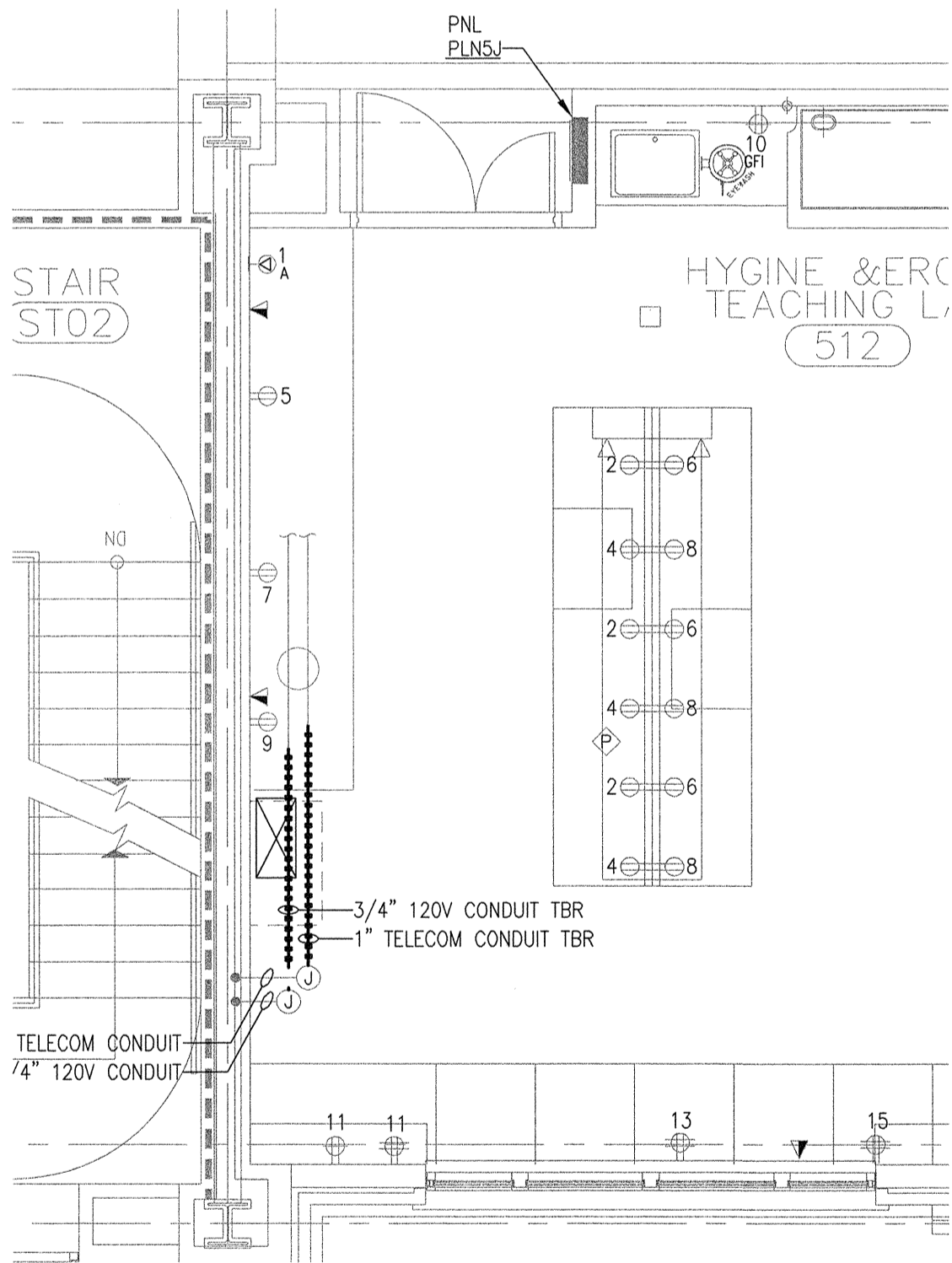
Project Number

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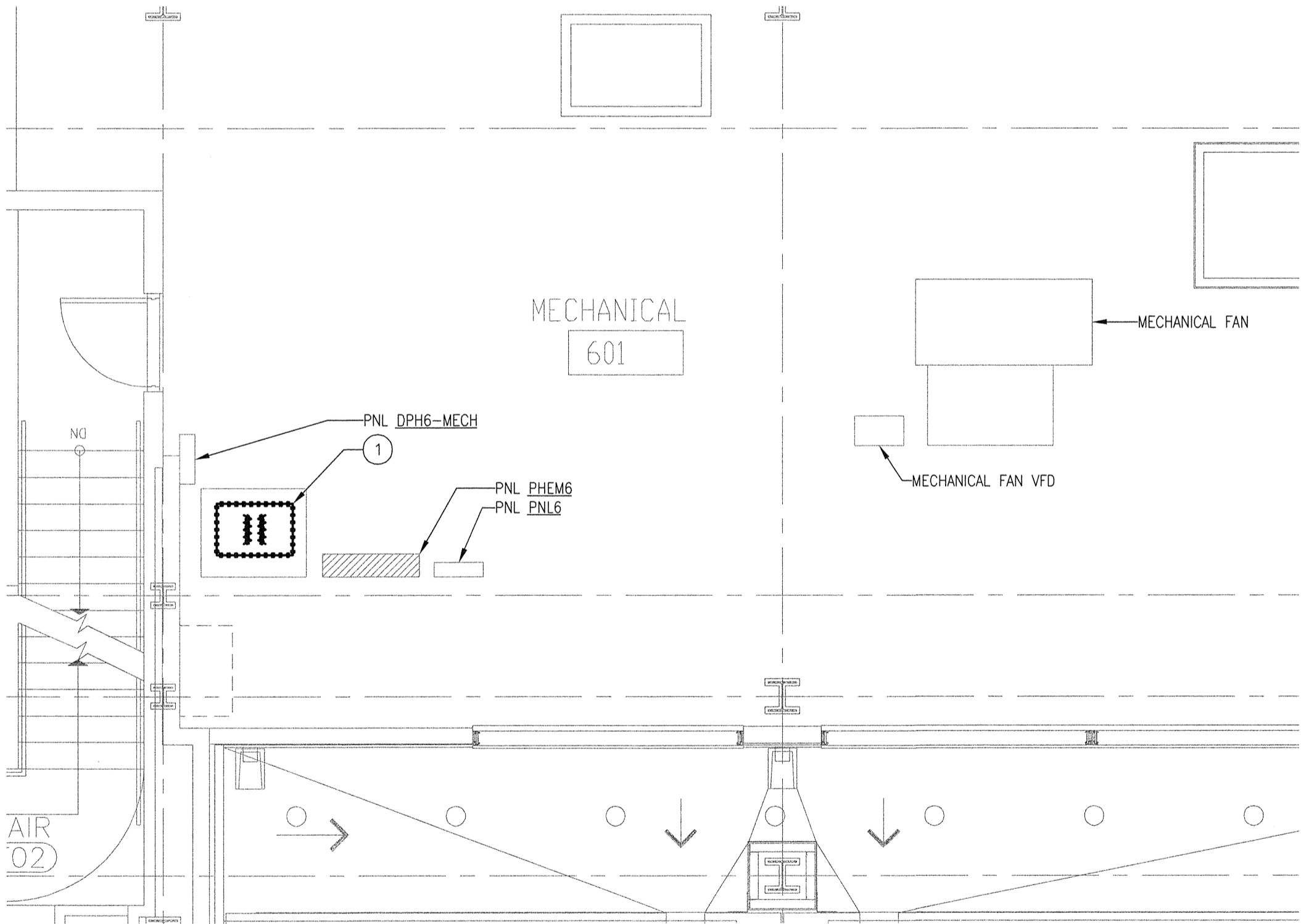
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Of

ED1.1



PARTIAL FIFTH FLOOR—
ELECTRICAL DEMOLITION
SCALE: 1/4"=1'-0"



PENTHOUSE — ELECTRICAL DEMOLITION
SCALE: 1/4"=1'-0"

- DEMOLITION NOTES:**
1. EXISTING CONDITIONS SUCH AS LIGHTING, RECEPTACLES, ETC. WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL ELECTRICAL ITEMS IN THE FIELD PRIOR TO THE START OF ANY WORK.
 2. SHOULD THE CONTRACTOR ENCOUNTER ANY MAJOR ELECTRICAL ITEMS, I.E. PANELS, FEEDERS, JUNCTION BOXES ETC. WHICH ARE NOT ADDRESSED ON THE DRAWINGS, HE SHALL BRING THEM TO THE ATTENTION OF THE ENGINEER. THE ENGINEER WILL REVIEW THE ITEM IN QUESTION AND GIVE THE NECESSARY DIRECTION.
 3. THE OWNER SHALL BE GIVEN A FIRST RIGHT OF REFUSAL FOR ALL ELECTRICAL EQUIPMENT WHICH IS TO BE REMOVED. ALL ELECTRICAL EQUIPMENT WHICH IS DESIRED BY THE OWNER SHALL BE STORED ON THE SITE WHERE DIRECTED BY THE OWNER. THE CONTRACTOR SHALL PROMPTLY DISPOSE OF ALL ELECTRICAL ITEMS WHICH ARE REMOVED AND THE OWNER DOES NOT WANT TO KEEP.
 4. IN GENERAL, ALL EXISTING ELECTRICAL DEVICES, LIGHTING FIXTURES, PANELS, CONDUITS, WIRING, JUNCTION BOXES, ETC. SHALL BE REMOVED IN THEIR ENTIRETY. THESE ITEMS ARE INDICATED WITH HEAVY DASHED LINES. ITEMS THAT ARE EXISTING TO REMAIN ARE INDICATED WITH A LIGHT CONTINUOUS LINE.
 5. ALL BRANCH CIRCUIT AND TELEPHONE WIRING WHICH MUST BE IN SERVICE AND WHICH IS DISCONNECTED AS A RESULT OF THE DEMOLITION WORK SHALL BE PROPERLY RECONNECTED.
 6. EXISTING SMOKE DETECTORS AND DUCT SMOKE DETECTORS SHALL BE TEMPORARILY DISCONNECTED DURING DEMOLITION AND OTHER DUST PRODUCING ACTIVITIES. COORDINATE THE TEMPORARY DISCONNECTION WITH FACILITIES.
 7. WHERE EXISTING DEVICES REMAIN IN WALLS WHICH RECEIVE A NEW FINISH, CONTRACTOR SHALL PROVIDE ALL NECESSARY OUTLET BOX EXTENSIONS, PLASTER RINGS, ETC. SO THAT DEVICES INSTALLED IN THE SAME MANNER AS EXISTING (I.E. FLUSH CONCEALED, ETC.).
 8. DURING CONSTRUCTION, COORDINATE WORK WITH USC FIRE MARSHAL TO KEEP BUILDING FIRE PROTECTION IN SERVICE.

GENERAL NOTES:


1. THERE IS NO ELECTRICAL WORK ON THE 4TH FLOOR.

DRAWING NOTES:

- ① EXISTING 480V~208/120V TRANSFORMER T=N6 TO BE RELOCATED. EXTEND EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E102 FOR NEW LOCATION.



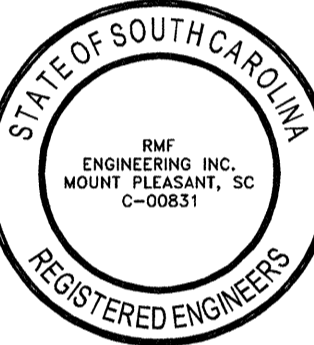
Partner In Charge	DSC
Project Engineer	BAC
Drawn By	PAM
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date



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STATE OF SOUTH CAROLINA
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RMF ENGINEERING, INC.
MOUNT PLEASANT, SC
C-00831

Project

PHRC LABORATORY 305 RENOVATION

Sheet Title

PARTIAL FIFTH AND PENTHOUSE FLOOR PLAN -
ELECTRICAL POWER DEMOLITION



JHS Architecture
Integrated Design

1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

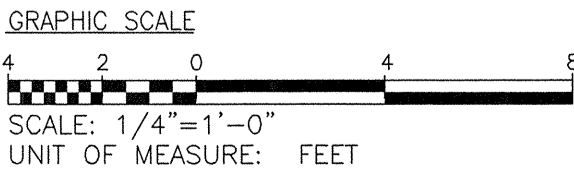
Project Number

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Sheet

Of

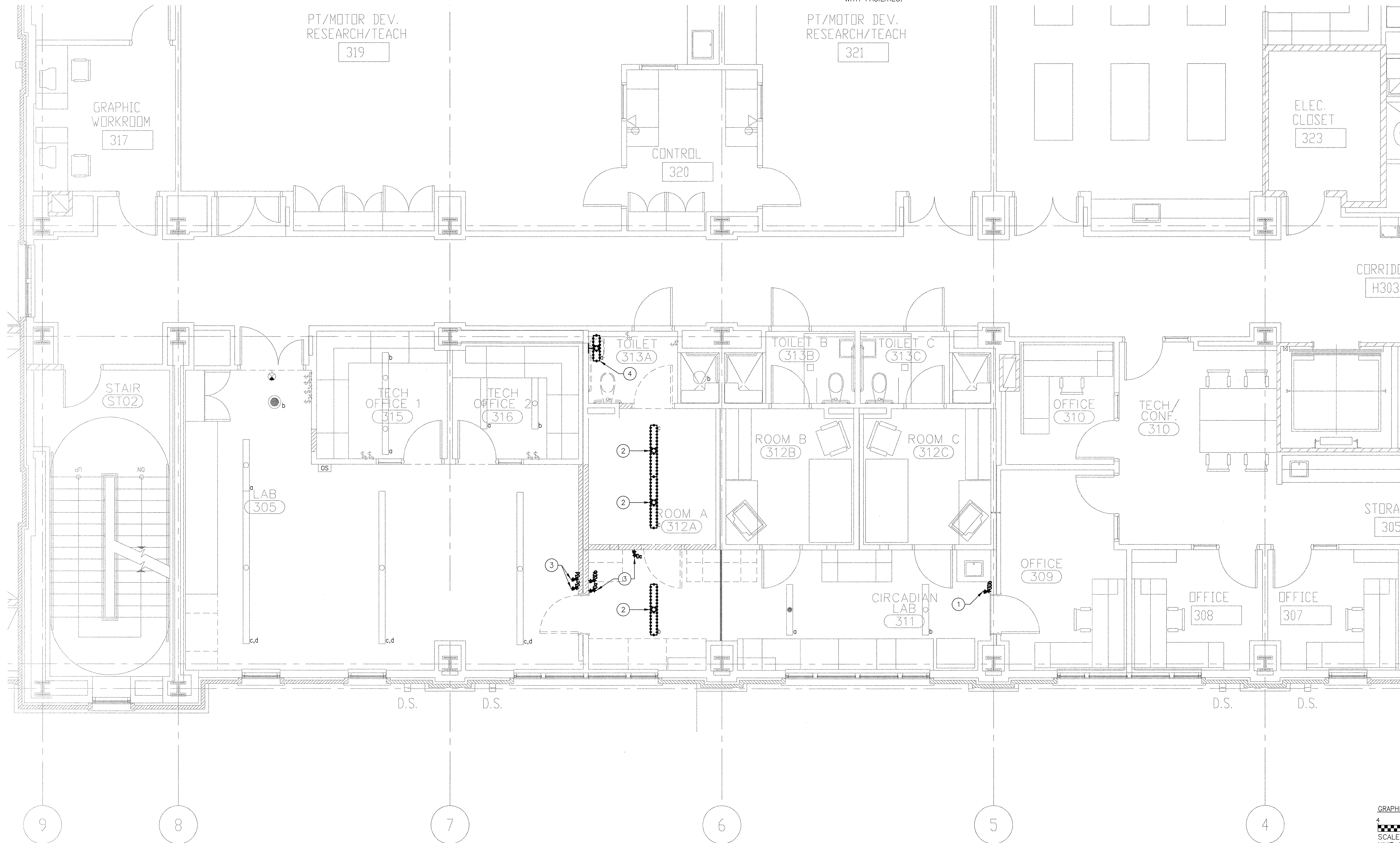
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1. EXISTING CONDITIONS SUCH AS LIGHTING, RECEPTACLES, ETC. WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL ELECTRICAL ITEMS IN THE FIELD PRIOR TO THE START OF ANY WORK.
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6. EXISTING SMOKE DETECTORS AND DUCT SMOKE DETECTORS SHALL BE TEMPORARILY DISCONNECTED DURING DEMOLITION AND OTHER DUST PRODUCING ACTIVITIES. COORDINATE THE TEMPORARY DISCONNECTION WITH FACILITIES.

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8. DURING CONSTRUCTION, COORDINATE WORK WITH USC FIRE MARSHAL TO KEEP BUILDING FIRE PROTECTION IN SERVICE.

- ① EXISTING 3-WAY, DIMMABLE LIGHTING SWITCH TO BE REMOVED. EXISTING BACKBOX AND CONDUIT TO REMAIN. A NEW SINGLE POLE LIGHTING, DIMMABLE LIGHTING SWITCH TO BE PROVIDED IN THIS LOCATION.
- ② EXISTING PENDANT MOUNTED LIGHTING FIXTURE TO BE RELOCATED. SEE DRAWING E2.1 FOR NEW LOCATION.
- ③ EXISTING LIGHTING SWITCH TO BE RELOCATED. EXTEND EXISTING CONDUIT AND WIRE TO NEW LOCATION. SEE DRAWING E2.1 FOR NEW LOCATION.
- ④ EXISTING LIGHTING FIXTURE TO BE REMOVED. EXISTING LIGHTING CIRCUIT TO BE REUSED. SEE DRAWING E2.1 FOR MORE INFORMATION.



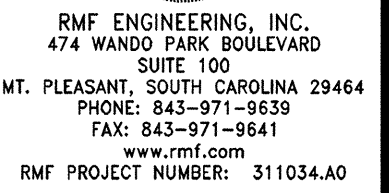
GRAPHIC SCALE



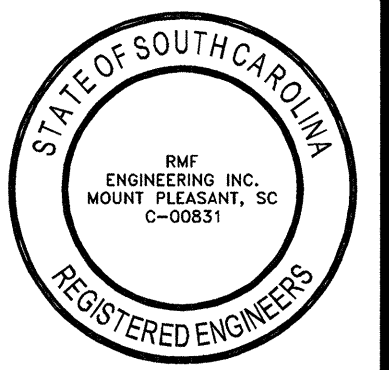
SCALE: 1/4" = 1'-0"

UNIT OF MEASURE: FEET

DSC
Project Engineer
BAC
Drawn By
PAM
Date Drawn
11-28-11

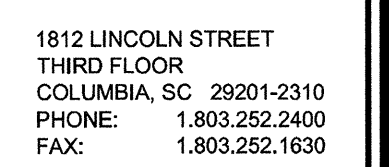
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IHS Architecture
Integrated Design



Sheet title

PARTIAL THIRD FLOOR PLAN -
ELECTRICAL LIGHTING DEMOLITION



922x06

Sheet Of

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ABBREVIATIONS

NOTE: THIS IS A STANDARD ABBREVIATION LIST. SOME ABBREVIATIONS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS.

A	COMPRESSED AIR	FOT	FUEL OIL TRANSFER
AAV	AUTOMATIC AIR VENT	FOV	FUEL OIL VENT
ACV	AUTOMATIC CONTROL VALVE	FPM	FEET PER MINUTE
AD	ACCESS DOOR, AREA DRAIN	FPS	FEET PER SECOND
AF	ANTIFREEZE	FS	FLOW SWITCH
AFF	ABOVE FINISHED FLOOR	FT	FOOT, FEET
AR	ARGON GAS	FWR	FEED WATER RETURN
ATC	AUTOMATIC TEMPERATURE CONTROL	FWS	FEED WATER SUPPLY
BAS	BUILDING AUTOMATION SYSTEM	G	NATURAL GAS
BBD	BOILER BLOWDOWN	GHR	GLYCOL HEATING RETURN
BCWR	BEARING COOLING WATER RETURN	GHS	GLYCOL HEATING SUPPLY
BCWS	BEARING COOLING WATER SUPPLY	GPH	GALLONS PER HOUR
BDD	BACKDRAFT DAMPER	GPM	GALLONS PER MINUTE
BFP	BACKFLOW PREVENTER	GR	AUTOMOTIVE LUBRICATION PIPING
BHP	BRAKE HORSEPOWER		
BMS	BUILDING MANAGEMENT SYSTEM	H	HIGH
BO	BLOW OFF	HB	HOSE BIBB
BTU	BRITISH THERMAL UNIT	HED	HOSE END DRAIN VALVE
BTUH	BRITISH THERMAL UNIT PER HOUR	HP	HORSEPOWER
		HPR	HIGH PRESSURE STEAM RETURN
°C	DEGREE(S) CELSIUS	HPS	HIGH PRESSURE STEAM SUPPLY
CA	CONTROL AIR	HR	HEATING WATER RETURN
CBD	CONTINUOUS BLOWDOWN	HRR	HEAT RECOVERY RETURN
CC	CAMPUS CONDENSATE	HRS	HEAT RECOVERY SUPPLY
CCMS	CENTRAL CONTROL AND MONITORING SYSTEM	HS	HEATING WATER SUPPLY
CD	CONDENSATE DRAIN	HT	HEIGHT
CF	CHEMICAL FEED	HTHR	HIGH TEMPERATURE HEATING WATER RETURN
CFM	CUBIC FEET PER MINUTE	HTHS	HIGH TEMPERATURE HEATING WATER SUPPLY
CHR	CHILLED WATER RETURN	HW	HOT WATER
CHS	CHILLED WATER SUPPLY	HWR	HOT WATER RECIRCULATION
CO	CLEANOUT	HZ	HERTZ
CO2	CARBON DIOXIDE		
CS	CLEAN STEAM	IA	INSTRUMENT AIR
CW	COLD WATER, CITY WATER	ICW	INDUSTRIAL COLD WATER
CWR	CONDENSER WATER RETURN	IHW	INDUSTRIAL HOT WATER
CWS	CONDENSER WATER SUPPLY	IHR	INDUSTRIAL HOT WATER RECIRCULATION
		IN	INCH, INCHES
D	DEEP, DRAIN WATER	INV EL	INVERT ELEVATION
DB	DECIBEL, DRY BULB		
DDC	DIRECT DIGITAL CONTROL	KW	KILOWATTS
DHR	DISTRIBUTION HEATING WATER RETURN		
DHS	DISTRIBUTION HEATING WATER SUPPLY	L	LONG, LENGTH
DIR	DEIONIZED WATER RETURN	LA	LABORATORY AIR
DIS	DEIONIZED WATER SUPPLY	LAT	LEAVING AIR TEMPERATURE
DL	DOOR LOUVER	LBS	POUNDS
DN	DOWN	LBS/HR	POUNDS PER HOUR
DSP	DRY SPRINKLER PIPE	LN	LIQUID NITROGEN
DTR	DUAL TEMPERATURE RETURN	LP	LIQUID PROPANE
DTS	DUAL TEMPERATURE SUPPLY	LPG	LIQUID PETROLEUM GAS
DW	DISTILLED WATER	LPR	LOW PRESSURE STEAM RETURN
		LPS	LOW PRESSURE STEAM SUPPLY
EA	EXHAUST AIR	LV	LABORATORY VENT, LABORATORY VACUUM
EAT	ENTERING AIR TEMPERATURE	LW	LABORATORY WASTE
EJ	EXPANSION JOINT	LWT	LEAVING WATER TEMPERATURE
EMS	ENERGY MANAGEMENT SYSTEM		
ESP	EXTERNAL STATIC PRESSURE	MA	MEDICAL AIR
ETC	ETCETERA	MAV	MANUAL AIR VENT
EVAC	GAS EVACUATION	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
EWT	ENTERING WATER TEMPERATURE	MCC	MOTOR CONTROL CENTER
EX	EXISTING	MO	MOTOR OIL PIPING
		MOD	MOTOR OPERATED DAMPER
°F	DEGREE(S) FAHRENHEIT	MPR	MEDIUM PRESSURE STEAM RETURN
F	FIRE LINE	MPS	MEDIUM PRESSURE STEAM SUPPLY
FC	FLEXIBLE CONNECTION	MV	MEDICAL VACUUM
FD	FIRE DAMPER, FOUNDATION DRAIN		
FDV	FIRE DEPARTMENT VALVE	N	NITROGEN
FF	FINISHED FLOOR	NA	NOT APPLICABLE
FFE	FINISHED FLOOR ELEVATION	NC	NOISE CRITERIA, NORMALLY CLOSED
FIN/FT	FINS PER FEET	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
FIN/INCH	FINS PER INCH	NO	NORMALLY OPEN, NITROUS OXIDE
FM	FLOWMETER	NPSH	NET POSITIVE SUCTION HEAD
FMF	FLOWMETER FITTING		
FOF	FUEL OIL FILL	O	OXYGEN
FOO	FUEL OIL OVERFLOW	OA	OUTSIDE AIR
FOR	FUEL OIL RETURN	OD	OVERFLOW DRAIN
FOS	FUEL OIL SUPPLY		

OED	OPEN ENDED DUCT
OS&Y	OUTSIDE STEM AND YOKE
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PA	PLANT AIR
PC	PUMPED CONDENSATE
PCR	PUMPED CONDENSATE RECIRCULATION
PCHR	PRIMARY CHILLED WATER RETURN
PCHS	PRIMARY CHILLED WATER SUPPLY
PCWR	PROCESS COOLING WATER RETURN
PCWS	PROCESS COOLING WATER SUPPLY
PD	PRESSURE DROP, PUMP DISCHARGE
PGR	PROCESS GLYCOL WATER RETURN
PGS	PROCESS GLYCOL WATER SUPPLY
PH	PHASE
PHR	PRIMARY HEATING RETURN
PHS	PRIMARY HEATING SUPPLY
PIV	POST INDICATING VALVE
PPH	POUNDS PER HOUR
PRV	PRESSURE REDUCING VALVE, PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR, RELIEF AIR
RD	REFRIGERANT DISCHARGE
RH	RELATIVE HUMIDITY
RHR	REHEAT WATER RETURN
RHS	REHEAT WATER SUPPLY
RL	REFRIGERANT LIQUID
ROR	REVERSE OSMOSIS WATER RETURN
ROS	REVERSE OSMOSIS WATER SUPPLY
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RV	RELIEF VENT, REFRIGERANT VENT
RX	REMOVE EXISTING
SA	SUPPLY AIR
SAN	SANITARY, SOIL, WASTE
SCHR	SECONDARY CHILLED WATER RETURN
SCHS	SECONDARY CHILLED WATER SUPPLY
SD	STORM DRAIN, SMOKE DETECTOR
SF	SQUARE FOOT
SHR	SECONDARY HEATING WATER RETURN
SHS	SECONDARY HEATING WATER SUPPLY
SL	SOUND LINING
SP	STATIC PRESSURE
SPR	SPRINKLER LINE
SS	STAINLESS STEEL
SQ FT	SQUARE FOOT
SW	SOFT WATER
ΔT	TEMPERATURE DIFFERENCE
TS	TAMPER SWITCH
TSP	TOTAL STATIC PRESSURE
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TW	TREATED WATER
TYP	TYPICAL
UCD	UNDERCUT DOOR
UL	UNDERWRITERS LABORATORIES
V	VACUUM, VOLTS
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VPD	VACUUM PUMP DISCHARGE
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	WATTS, WIDE
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
WH	WALL HYDRANT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH

GENERAL NOTES

1. NOTIFY THE OWNER, IN WRITING, AT LEAST SEVEN (7) DAYS IN ADVANCE OF ALL REQUIRED SHUTDOWNS OF WATER, FIRE, SEWER, GAS, ELECTRICAL SERVICE, OR OTHER UTILITIES. UPON WRITTEN RECEIPT OF APPROVAL FROM OWNER, SHUTDOWN SHALL BE PERFORMED BETWEEN THE HOURS OF SIX (6) P.M. AND SIX (6) A.M. OR AS DIRECTED OTHERWISE BY THE OWNER AND SHALL BE ACCOMPLISHED AT NO ADDITIONAL CONTRACT COST. AT THE END OF EACH SHUTDOWN ALL SERVICES SHALL BE RESTORED SO THAT NORMAL USE OF THE UTILITIES CAN CONTINUE.
2. WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED WITH REGARD TO PROTECTION OF THE EXISTING STRUCTURE AND MECHANICAL AND ELECTRICAL SERVICES WHICH WILL REMAIN. REPAIR, REPLACE, OR RESTORE TO THE SATISFACTION OF THE ARCHITECT, ENGINEER AND OWNER ALL EXISTING WORK DAMAGED IN THE PERFORMANCE OF DEMOLITION AND/OR NEW WORK.
3. ALL EXISTING PIPING, EQUIPMENT, DUCTWORK, AND MATERIALS NOT REQUIRED FOR RE-USE OR RE-INSTALLATION (SHOWN OR OTHERWISE) SHALL BE REMOVED. ALL EXISTING MATERIALS AND EQUIPMENT WHICH ARE REMOVED AND ARE DESIRED BY THE OWNER, OR ARE INDICATED TO REMAIN THE PROPERTY OF THE OWNER, SHALL BE DELIVERED TO HIM ON THE PREMISES BY THE CONTRACTOR. ALL OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE PREMISES.
4. EXISTING CONDITIONS, I.E., PRESENCE AND LOCATION OF DUCTWORK, PIPING, EQUIPMENT AND MATERIALS, INDICATED ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL DUCTWORK, PIPING, EQUIPMENT AND MATERIALS IN THE FIELD PRIOR TO STARTING ALL WORK.
5. EXISTING DUCT, PIPE, AND EQUIPMENT SIZES NOTED ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND ARE NOT WARRANTED TO BE CORRECT. CONTRACTOR SHALL VERIFY ALL SIZES IN THE FIELD IF THEY EFFECT HIS WORK.
6. EXISTING PIPING NO LONGER REQUIRED TO REMAIN IN SERVICE (SHOWN OR OTHERWISE) SHALL BE DISCONNECTED AND REMOVED BACK TO SERVICE MAINS UNLESS OTHERWISE INDICATED OR NOTED ON THE PLANS. REMOVE EXISTING PIPE HANGERS, SUPPORTS, VALVES, ETC.. EXISTING PIPING INDICATED OR REQUIRED TO REMAIN IN SERVICE OR IN PLACE SHALL BE CAPPED, PLUGGED, OR OTHERWISE SEALED. NO EXISTING PIPING SHALL BE LEFT OPEN END.
7. EXISTING DUCTWORK INDICATED TO BE DISCONNECTED AND REMOVED SHALL INCLUDE ALL RELATED AIR DEVICES, HANGERS, SUPPORTS, ETC., UNLESS OTHERWISE INDICATED OR NOTED ON THE PLANS. EXISTING DUCTWORK WHERE INDICATED TO BE CAPPED OR REQUIRED TO REMAIN IN SERVICE SHALL BE CAPPED WITH 18 GAUGE SHEET METAL. SECURE CAP WITH SHEET METAL SCREWS AND SEAL PERIMETER OF OPENING AIR TIGHT WITH DUCT SEALER. NO EXISTING DUCTWORK SHALL BE LEFT OPEN FOR ANY EXTENDED PERIOD OF TIME. CAP EXISTING DUCTWORK IMMEDIATELY AS REQUIRED OR DIRECTED BY THE ENGINEER. CONTRACTOR SHALL RETURN ALL AIR DEVICES TO OWNER.
8. EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, AND MATERIALS AFFECTED BY DEMOLITION OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE RE-INSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATION. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND OWNER AND AT NO ADDITIONAL CONTRACT COST.
9. PATCH ALL DISTURBED SURFACES, INCLUDING WALLS, CEILINGS, ROOF, AND FLOOR. PATCHING SHALL MATCH EXISTING ADJACENT SURFACES AS TO THICKNESS, TEXTURE, MATERIALS, AND COLOR. ALL PATCHING SHALL BE PERFORMED TO THE SATISFACTION OF THE ARCHITECT, ENGINEER AND OWNER AND AT NO ADDITIONAL CONTRACT COST.
10. IN GENERAL ALL PIPING, EQUIPMENT, DUCTWORK, AND MATERIALS SHOWN "LIGHT" IS EXISTING TO REMAIN. ALL PIPING, CONDUITS, EQUIPMENT, DUCTWORK, AND MATERIALS SHOWN "HEAVY AND DASHED" IS EXISTING TO BE DEMOLISHED.
11. ALL WORK SHALL BE PERFORMED IN A SEQUENCE AND DURING HOURS TO MINIMIZE DISRUPTION TO THE BUILDING WHICH WILL REMAIN OCCUPIED DURING CONSTRUCTION.
12. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SOUTH CAROLINA CODES, CITY OF COLUMBIA, AND THE LOCAL FIRE MARSHALL'S REQUIREMENTS.
13. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES/ SUBCONTRACTORS INCLUDING BUT NOT LIMITED TO AUTOMATIC TEMPERATURE CONTROLS, ELECTRICAL, AND GENERAL TRADES.
14. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STAIRWELLS AND EGRESS CORRIDORS DURING CONSTRUCTION.
15. CONCRETE CORING OR CUTTING MAY BE REQUIRED IN ORDER TO RUN MECHANICAL, ELECTRICAL, PLUMBING, CABLING OR OTHER SERVICES TO A SPECIFIC AREA. IT IS IMPERATIVE WHEN CONSIDERING EITHER CORING, CUTTING OR CHIPPING THAT REBAR, PLUMBING, ELECTRICAL SERVICES, ETC WITHIN THE CONCRETE SLAB, WALL OR FLOOR BE LOCATED PRIOR TO DISTURBING THE INTEGRITY OF THE EXISTING CONCRETE. OBTAIN STRUCTURAL DRAWINGS OF THE AREA IN QUESTION AND, USING THE BUILDING GRIDLINES, DETERMINE AND MARK THE EXACT LOCATIONS REQUIRED FOR NEW SERVICES.
16. ALL PENETRATIONS MUST BE SEALED WITH FIRE STOP MATERIAL AFTER SERVICES ARE RUN THROUGH. ALL PENETRATIONS THROUGH EXTERIOR WALLS ABOVE AND BELOW GRADE OR SLAB ON GRADE MUST BE WATERPROOFED.
17. FINAL CEILING HEIGHTS TO BE DETERMINED WITH ARCHITECT IN FIELD AFTER DEMOLITION OF EXISTING CEILINGS. NO FABRICATION OF DUCTWORK, HVAC PIPING OR PLUMBING PIPING SHALL BEGIN UNTIL AFTER THE CONTRACTOR HAS COMPLETED COORDINATION DRAWINGS AND COORDINATED THE CEILING HEIGHTS WITH THE ARCHITECT.
18. AUTOMATIC TEMPERATURE CONTROL CONTRACTOR SHALL DESIGNATE AND NUMBER ALL EQUIPMENT IN ACCORDANCE WITH UNIVERSITY OF SOUTH CAROLINA STANDARDS. NO DUPLICATE DESIGNATION NUMBERS SHALL BE PROVIDED. ALL NUMBERS SHALL BE THE NEXT SEQUENTIAL NUMBER FOR THAT SPECIFIC PIECE OF EQUIPMENT.
19. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER PRIOR TO CLOSING ANY CEILINGS FOR A COMPLETE CHECKOUT OF THE HVAC SYSTEM. THE SYSTEM MUST BE COMPLETE AND OPERATIONAL INCLUDING CONTROLS, REGISTERS, INSULATION, AND BALANCING WITH REPORT. THE SYSTEM SHALL BE RUN THROUGH ITS COMPLETE HEATING AND COOLING CYCLES. THE CONTRACTOR AND ALL APPROVED SUBCONTRACTORS SHALL BE PRESENT AT THE ARCHITECT-ENGINEER CHECKOUT. THE TESTING AND BALANCE AGENCY SHALL CERTIFY THAT THESE CONDITIONS ARE MET.



Partner In Charge	DSC
Project Engineer	CRB
Drawn By	CSL
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date
No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-8839
FAX: 843-971-1841
www.rmfi.com
RMF PROJECT NUMBER: 311034.00

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Project

PHRC LABORATORY 305 RENOVATION

Sheet Title

FIRE PROTECTION

GENERAL NOTES AND ABBREVIATIONS

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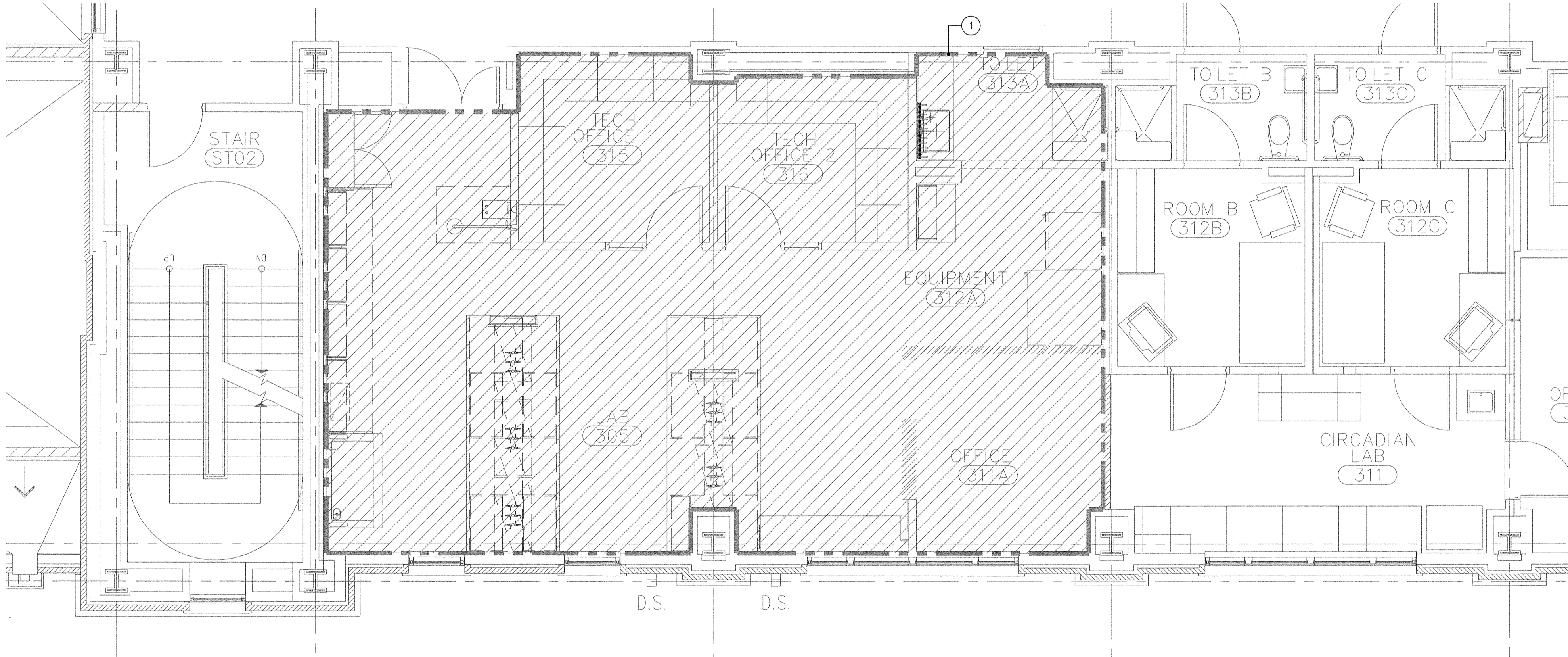


GENERAL NOTES:

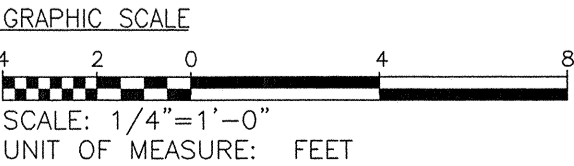
1. PROVIDE A COMPLETE HYDRAULICALLY DESIGNED AUTOMATIC WET SPRINKLER SYSTEM FOR ALL AREAS OF WORK. SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 13, NFPA 14 AND THE STATE OF SOUTH CAROLINA FIRE MARSHAL REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. REFER TO FIRE SPRINKLER SPECIFICATION SHEET FOR SPACE SPECIFIC HAZARD CLASSIFICATION.
3. FOR LIGHT HAZARD AREAS, THE DENSITY REQUIRED MUST BE CALCULATED FROM THE LIGHT HAZARD DENSITY CURVE IN THE LATEST EDITION OF NFPA-13, WITH A MINIMUM AREA OF APPLICATION OF 1,500 SQUARE FEET. THE SUGGESTED DENSITY IS 0.10 GPM PER SQUARE FOOT OVER THE HYDRAULICALLY MOST REMOTE 1,500 SQUARE FEET.
4. FOR ORDINARY GROUP 1 HAZARD AREAS, THE DENSITY REQUIRED MUST BE CALCULATED FROM THE ORDINARY GROUP 1 HAZARD DENSITY CURVE IN THE LATEST EDITION OF NFPA-13, WITH A MINIMUM AREA OF APPLICATION OF 1,500 SQUARE FEET. THE SUGGESTED DENSITY IS 0.15 GPM PER SQUARE FOOT OVER THE HYDRAULICALLY MOST REMOTE 1,500 SQUARE FEET.
5. THE SPRINKLER CONTRACTOR SHALL REVIEW ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS, INCLUDING ALL REFLECTED CEILING PLANS PRIOR TO PREPARING THE BID. ATTENTION SHALL BE PAID TO STAIRWAYS, ELEVATOR HOISTWAYS, AREAS WITH FLOATING CEILINGS, LARGE EXPOSED DUCTWORK AND VERTICAL SLAB OPENINGS.
6. ALL LOW POINTS OF THE SPRINKLER SYSTEM SHALL BE PROVIDED WITH DRAINS PER THE LATEST EDITION OF NFPA-13. LOW POINT DRAINS SHALL BE CLEARLY MARKED AND PIPED TO THE EXTERIOR OF THE BUILDING. A VALVE DRAWING SHALL BE PROVIDED IN SPRINKLER ROOM SHOWING THE LOCATIONS OF ALL LOW POINT DRAINS. DRAIN DISCHARGE SHALL HAVE THREADED MALE FITTING SIZED TO FIT GARDEN HOSE.
7. ALL SPRINKLER HEAD TEMPERATURE RATINGS SHALL BE ORDINARY (165°F) UNLESS OTHERWISE INDICATED. ALL SPRINKLERS INSTALLED IN GYPSUM, PLASTER AND WOOD CEILING SHALL BE CONCEALED TYPE. ALL SPRINKLERS IN ACOUSTICAL CEILING TILE SHALL BE SEMI-RECESSED TYPE.
8. FIRE PROTECTION PIPE HANGERS SHALL BE INSTALLED AT EVERY JOINT, OR AT A MAXIMUM DISTANCE PER NFPA 13 TABLE 9.2.2.1.
9. FIRE STOP ALL PENETRATIONS OF FIRE RATED ASSEMBLIES. REFER TO ARCHITECTURAL DRAWINGS FOR RATINGS.
10. CONTRACTOR SHALL OBTAIN UPDATED (WITHIN 6 MONTHS) FIRE FLOW TEST DATA PRIOR TO PERFORMING HYDRAULIC CALCULATIONS.
11. PROVIDE SEISMIC BRACING AND SUPPORTS FOR ALL FIRE PROTECTION PIPING TO COMPLY WITH NFPA STANDARD 13 AND IBC 2009.
12. BUILDING FIRE PROTECTION SERVICE SHALL REMAIN IN SERVICE FOR THE DURATION OF CONSTRUCTION. ALL WORK RELATED TO FIRE PROTECTION SYSTEM SHALL BE FULLY COORDINATED WITH THE USC FIRE MARSHAL.

DRAWING NOTES:

- ① SPRINKLER HEADS SHALL BE RELOCATED AS REQUIRED BASED ON HYDRAULIC CALCULATIONS AND ARCHITECTURAL FLOOR PLANS. SPRINKLER HEADS SHALL BE INSTALLED IN CEILING (ACT, GYPSUM, SHAFTWALL) IN ACCORDANCE WITH NFPA-13 AND MANUFACTURER'S INSTRUCTIONS.



PARTIAL THIRD FLOOR – NEW WORK FIRE PROTECTION
SCALE: 1/4"=1'-0"



Partner In Charge	DSC
Project Engineer	CRB
Drawn By	CSL
Date Drawn	11-28-11
Revisions	
No.	Date
No.	Date
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No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9639
FAX: 843-971-9641
www.rmfi.com
RMF PROJECT NUMBER: 311034.00

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Project
PHRC LABORATORY 305 RENOVATION

Sheet Title
THIRD FLOOR
FIRE PROTECTION

JHS
Architecture
Integrated Design

1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

Project Number
922x06

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MECHANICAL LEGEND

PIPING SYMBOLS

SYMBOL	DESCRIPTION
---HR---	HEATING WATER RETURN
---HS---	HEATING WATER SUPPLY

DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	THERMOSTAT
	AIR FLOW
	TRANSFER AIR FLOW (INDICATE CFM)
	SUPPLY AIR DIFFUSER
	EXHAUST AIR GRILLE
	FIRE DAMPER
	VOLUME DAMPER
	FLEXIBLE CONNECTION
	ELBOW WITH DOUBLE THICKNESS TURNING VANES
	RECTANGULAR BRANCH TAKE-OFF
	BELL MOUTH BRANCH TAKE-OFF
	ROUND BRANCH TAKE-OFF
	DUCT TRANSITION
	SQUARE TO ROUND TRANSITION
	DUCTWORK CHANGE IN ELEVATION (UP OR DOWN)
	SUPPLY/OUTSIDE AIR DUCT RISER
	EXHAUST/RELIEF AIR DUCT RISER
	ROUND DUCT RISER (SMALLER THAN 12")
	ROUND DUCT RISER (12" AND LARGER)
	TERMINAL UNIT
	TERMINAL UNIT WITH REHEAT COIL
	TERMINAL UNIT WITH ATTENUATOR AND REHEAT COIL
	EXHAUST TERMINAL UNIT
	LABORATORY AIR TERMINAL WITH ATTENUATOR
	LABORATORY AIR TERMINAL WITH ATTENUATOR
	SUPPLY AIR VOLUME TERMINAL UNIT IDENTIFIER
	EXHAUST AIR TERMINAL UNIT IDENTIFIER
	AIR DEVICE IDENTIFIER

GENERAL SYMBOLS

LINETYPE SYMBOLS

DESIGNATION	DESCRIPTION
-----	DEMOLITION WORK (SHOWN ON DEMOLITION PLANS)
=====	EXISTING WORK
=====	NEW WORK

REFERENCE SYMBOLS

DESIGNATION	DESCRIPTION
	NORTH ARROW
	POINT OF CONNECTION TO EXISTING
	POINT OF DISCONNECTION

PIPING SYMBOLS

SYMBOL	DESCRIPTION
	PIPE DROP
	PIPE RISE
	PIPE CAP
	BRANCH TAKE OFF
	PIPE DROP TEE
	PIPE RISE TEE
	SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR TYPE)
	AUTOMATIC CONTROL VALVE (TWO-WAY)
	AUTOMATIC CONTROL VALVE (THREE-WAY)
	BALANCING VALVE (WITH MEMORY STOP)
	UNION
	PIPE FLANGE
	CONCENTRIC REDUCER
	FLOWMETER FITTING
	PRESSURE SENSOR
	TEMPERATURE SENSOR
	PRESSURE/TEMPERATURE PLUG
	FLOW ARROW

GENERAL NOTES

1. NOTIFY THE OWNER, IN WRITING, AT LEAST SEVEN (7) DAYS IN ADVANCE OF ALL REQUIRED SHUTDOWNS OF WATER, FIRE, SEWER, GAS, ELECTRICAL SERVICE, OR OTHER UTILITIES. UPON WRITTEN RECEIPT OF APPROVAL FROM OWNER, SHUTDOWN SHALL BE PERFORMED BETWEEN THE HOURS OF SIX (6) P.M. AND SIX (6) A.M. OR AS DIRECTED OTHERWISE BY THE OWNER AND SHALL BE ACCOMPLISHED AT NO ADDITIONAL CONTRACT COST. AT THE END OF EACH SHUTDOWN ALL SERVICES SHALL BE RESTORED SO THAT NORMAL USE OF THE UTILITIES CAN CONTINUE.
2. WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED WITH REGARD TO PROTECTION OF THE EXISTING STRUCTURE AND MECHANICAL AND ELECTRICAL SERVICES WHICH WILL REMAIN. REPAIR, REPLACE, OR RESTORE TO THE SATISFACTION OF THE ARCHITECT, ENGINEER AND OWNER ALL EXISTING WORK DAMAGED IN THE PERFORMANCE OF DEMOLITION AND/OR NEW WORK.
3. ALL EXISTING PIPING, EQUIPMENT, DUCTWORK, AND MATERIALS NOT REQUIRED FOR RE-USE OR RE-INSTALLATION (SHOWN OR OTHERWISE) SHALL BE REMOVED. ALL EXISTING MATERIALS AND EQUIPMENT WHICH ARE REMOVED AND ARE DESIRED BY THE OWNER, OR ARE INDICATED TO REMAIN THE PROPERTY OF THE OWNER, SHALL BE DELIVERED TO HIM ON THE PREMISES BY THE CONTRACTOR. ALL OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE PREMISES.
4. EXISTING CONDITIONS, I.E., PRESENCE AND LOCATION OF DUCTWORK, PIPING, EQUIPMENT AND MATERIALS, INDICATED ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL DUCTWORK, PIPING, EQUIPMENT AND MATERIALS IN THE FIELD PRIOR TO STARTING ALL WORK.
5. EXISTING DUCT, PIPE, AND EQUIPMENT SIZES NOTED ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND ARE NOT WARRANTED TO BE CORRECT. CONTRACTOR SHALL VERIFY ALL SIZES IN THE FIELD IF THEY EFFECT HIS WORK.
6. EXISTING PIPING NO LONGER REQUIRED TO REMAIN IN SERVICE (SHOWN OR OTHERWISE) SHALL BE DISCONNECTED AND REMOVED BACK TO SERVICE MAINS UNLESS OTHERWISE INDICATED OR NOTED ON THE PLANS. REMOVE EXISTING PIPE HANGERS, SUPPORTS, VALVES, ETC.. EXISTING PIPING INDICATED OR REQUIRED TO REMAIN IN SERVICE OR IN PLACE SHALL BE CAPPED, PLUGGED, OR OTHERWISE SEALED. NO EXISTING PIPING SHALL BE LEFT OPEN END.
7. EXISTING DUCTWORK INDICATED TO BE DISCONNECTED AND REMOVED SHALL INCLUDE ALL RELATED AIR DEVICES, HANGERS, SUPPORTS, ETC., UNLESS OTHERWISE INDICATED OR NOTED ON THE PLANS. EXISTING DUCTWORK WHERE INDICATED TO BE CAPPED OR REQUIRED TO REMAIN IN SERVICE SHALL BE CAPPED WITH 18 GAUGE SHEET METAL. SECURE CAP WITH SHEET METAL SCREWS AND SEAL PERIMETER OF OPENING AIR TIGHT WITH DUCT SEALER. NO EXISTING DUCTWORK SHALL BE LEFT OPEN FOR ANY EXTENDED PERIOD OF TIME. CAP EXISTING DUCTWORK IMMEDIATELY AS REQUIRED OR DIRECTED BY THE ENGINEER. CONTRACTOR SHALL RETURN ALL AIR DEVICES TO OWNER.
8. EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, AND MATERIALS AFFECTED BY DEMOLITION OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE RE-INSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATION. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND OWNER AND AT NO ADDITIONAL CONTRACT COST.
9. PATCH ALL DISTURBED SURFACES, INCLUDING WALLS, CEILINGS, ROOF, AND FLOOR. PATCHING SHALL MATCH EXISTING ADJACENT SURFACES AS TO THICKNESS, TEXTURE, MATERIALS, AND COLOR. ALL PATCHING SHALL BE PERFORMED TO THE SATISFACTION OF THE ARCHITECT, ENGINEER AND OWNER AND AT NO ADDITIONAL CONTRACT COST.
10. IN GENERAL ALL PIPING, EQUIPMENT, DUCTWORK, AND MATERIALS SHOWN "LIGHT" IS EXISTING TO REMAIN. ALL PIPING, CONDUITS, EQUIPMENT, DUCTWORK, AND MATERIALS SHOWN "HEAVY AND DASHED" IS EXISTING TO BE DEMOLISHED.
11. ALL WORK SHALL BE PERFORMED IN A SEQUENCE AND DURING HOURS TO MINIMIZE DISRUPTION TO THE BUILDING WHICH WILL REMAIN OCCUPIED DURING CONSTRUCTION.
12. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SOUTH CAROLINA CODES, CITY OF COLUMBIA, AND THE LOCAL FIRE MARSHALL'S REQUIREMENTS.
13. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES/ SUBCONTRACTORS INCLUDING BUT NOT LIMITED TO AUTOMATIC TEMPERATURE CONTROLS, ELECTRICAL, AND GENERAL TRADES.
14. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STAIRWELLS AND EGRESS CORRIDORS DURING CONSTRUCTION.
15. CONCRETE CORING OR CUTTING MAY BE REQUIRED IN ORDER TO RUN MECHANICAL, ELECTRICAL, PLUMBING, CABLING OR OTHER SERVICES TO A SPECIFIC AREA. IT IS IMPERATIVE WHEN CONSIDERING EITHER CORING, CUTTING OR CHIPPING THAT REBAR, PLUMBING, ELECTRICAL SERVICES, ETC WITHIN THE CONCRETE SLAB, WALL OR FLOOR BE LOCATED PRIOR TO DISTURBING THE INTEGRITY OF THE EXISTING CONCRETE. OBTAIN STRUCTURAL DRAWINGS OF THE AREA IN QUESTION AND, USING THE BUILDING GRIDLINES, DETERMINE AND MARK THE EXACT LOCATIONS REQUIRED FOR NEW SERVICES.
16. ALL PENETRATIONS MUST BE SEALED WITH FIRE STOP MATERIAL AFTER SERVICES ARE RUN THROUGH. ALL PENETRATIONS THROUGH EXTERIOR WALLS ABOVE AND BELOW GRADE OR SLAB ON GRADE MUST BE WATERPROOFED.
17. FINAL CEILING HEIGHTS TO BE DETERMINED WITH ARCHITECT IN FIELD AFTER DEMOLITION OF EXISTING CEILINGS. NO FABRICATION OF DUCTWORK, HVAC PIPING OR PLUMBING PIPING SHALL BEGIN UNTIL AFTER THE CONTRACTOR HAS COMPLETED COORDINATION DRAWINGS AND COORDINATED THE CEILING HEIGHTS WITH THE ARCHITECT.
18. AUTOMATIC TEMPERATURE CONTROL CONTRACTOR SHALL DESIGNATE AND NUMBER ALL EQUIPMENT IN ACCORDANCE WITH UNIVERSITY OF SOUTH CAROLINA STANDARDS. NO DUPLICATE DESIGNATION NUMBERS SHALL BE PROVIDED. ALL NUMBERS SHALL BE THE NEXT SEQUENTIAL NUMBER FOR THAT SPECIFIC PIECE OF EQUIPMENT.
19. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER PRIOR TO CLOSING ANY CEILINGS FOR A COMPLETE CHECKOUT OF THE HVAC SYSTEM. THE SYSTEM MUST BE COMPLETE AND OPERATIONAL INCLUDING CONTROLS, REGISTERS, INSULATION, AND BALANCING WITH REPORT. THE SYSTEM SHALL BE RUN THROUGH ITS COMPLETE HEATING AND COOLING CYCLES. THE CONTRACTOR AND ALL APPROVED SUBCONTRACTORS SHALL BE PRESENT AT THE ARCHITECT-ENGINEER CHECKOUT. THE TESTING AND BALANCE AGENCY SHALL CERTIFY THAT THESE CONDITIONS ARE MET.



Partner In Charge	DSC
Project Engineer	CRB
Drawn By	BEK
Date Drawn	11-28-11
Revisions	
No. _____	Date _____
No. _____	Date _____
No. _____	Date _____
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RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9839
FAX: 843-971-9841
www.rmfi.com
RMF PROJECT NUMBER: 311034.00

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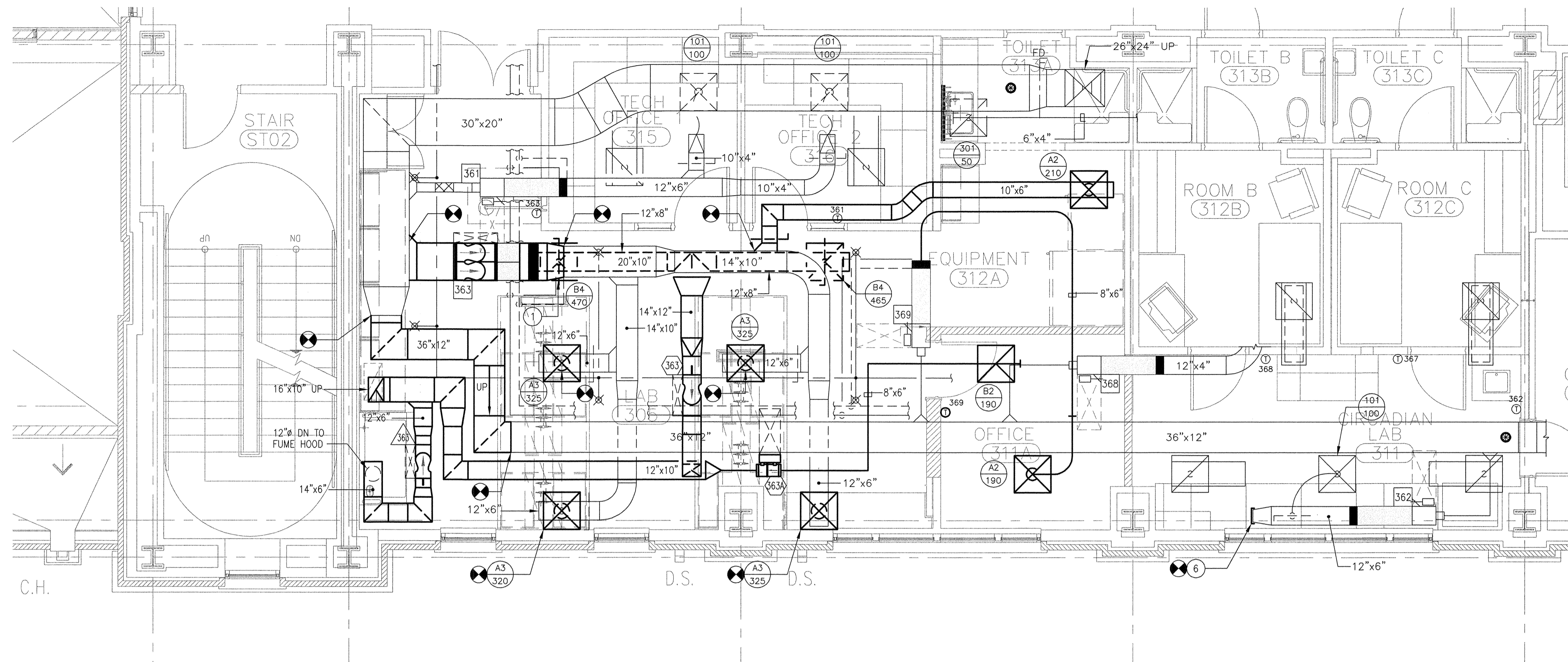
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Project	PHRC LABORATORY 305 RENOVATION
Sheet Title	MECHANICAL LEGEND AND ABBREVIATIONS

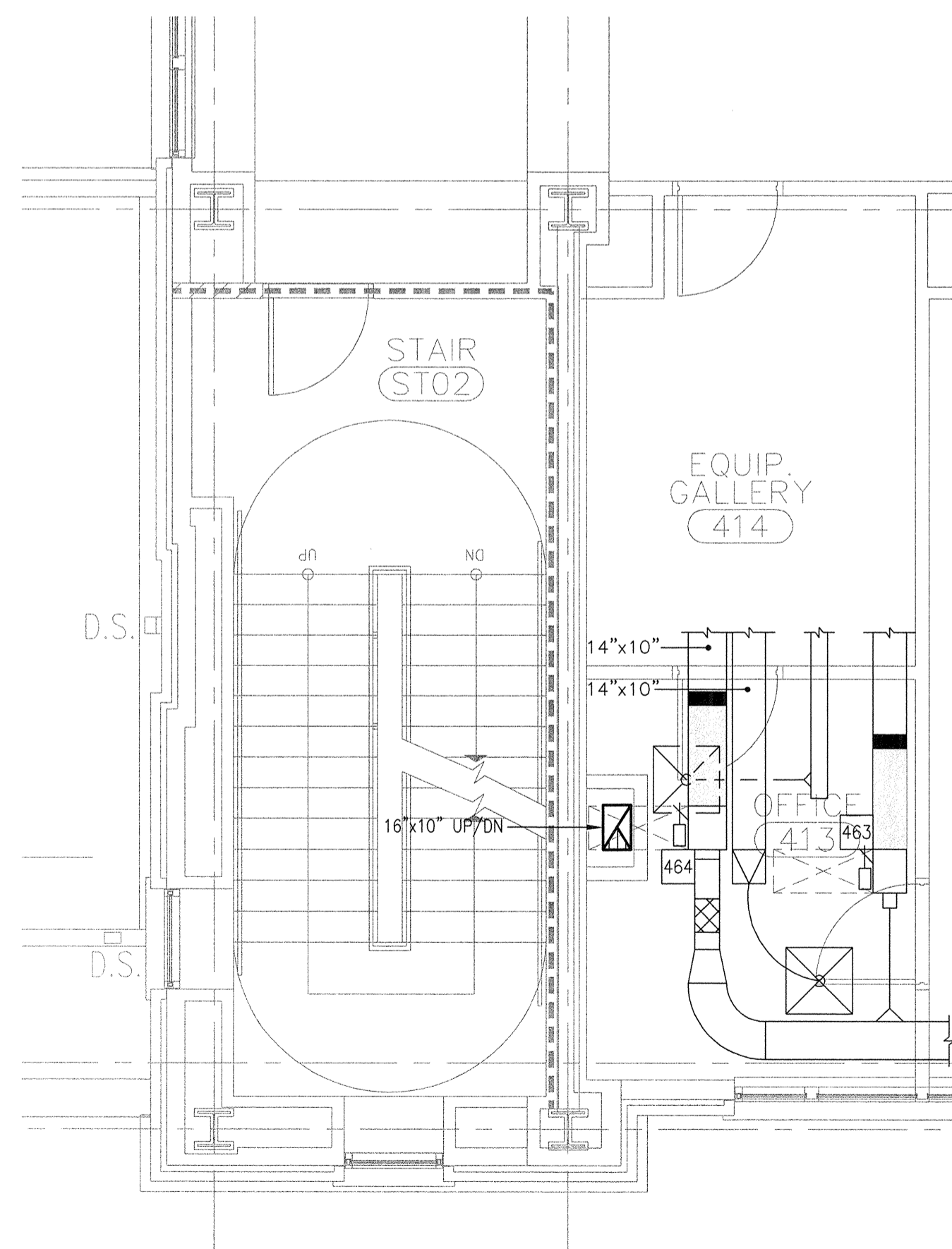
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1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

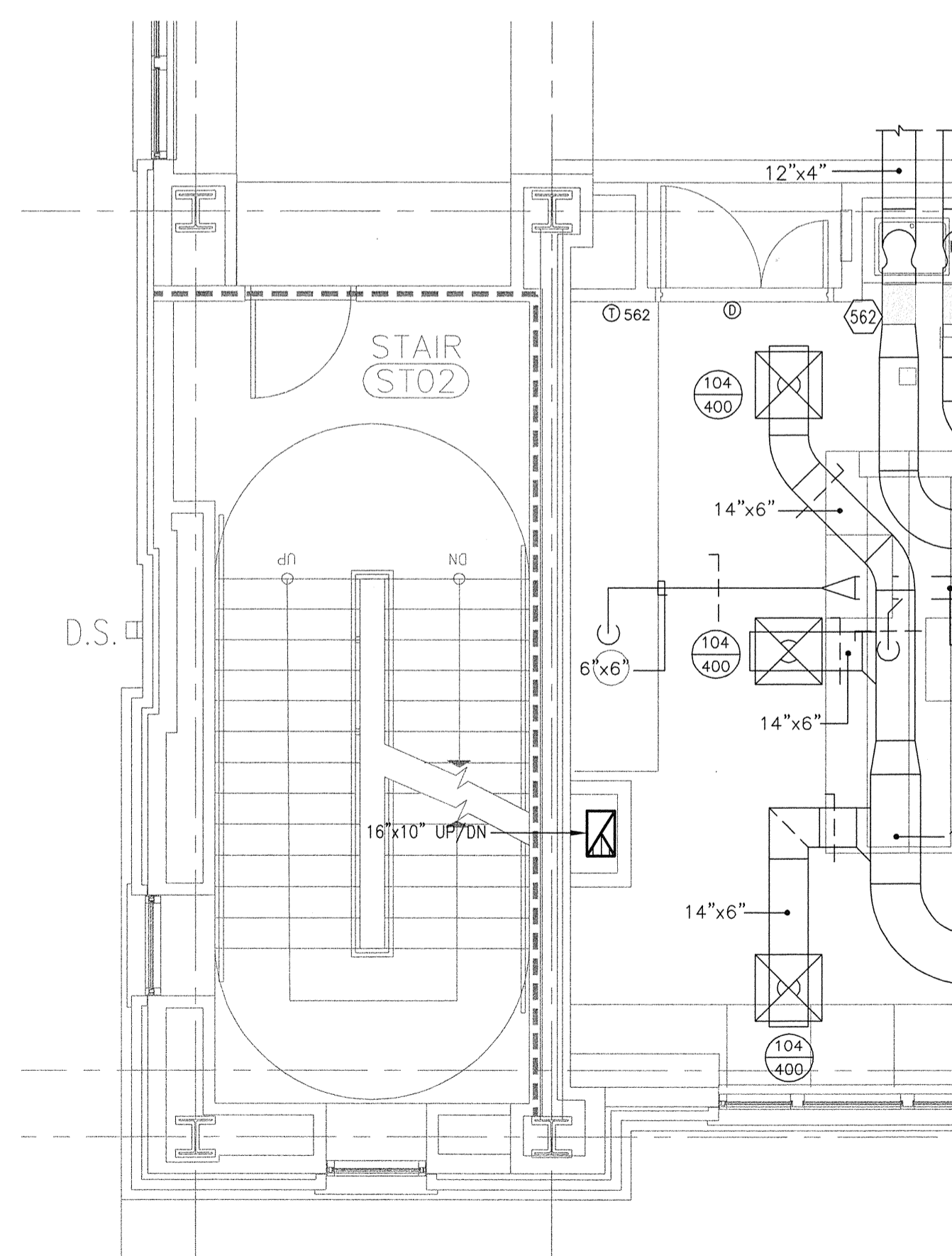
Project Number	922x06
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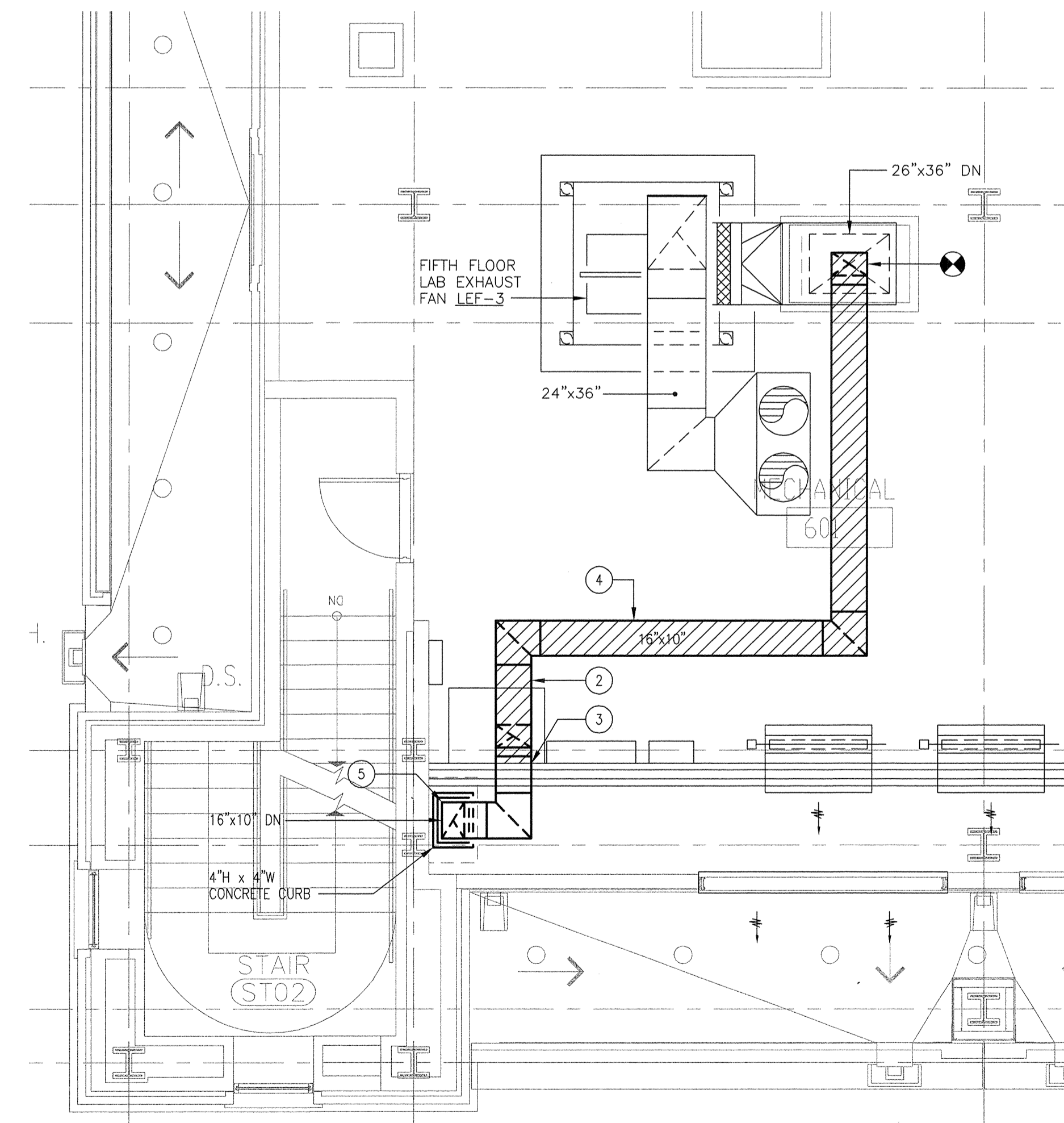
PARTIAL THIRD FLOOR - HVAC NEW WORK
SCALE: 1/4"=1'-0"



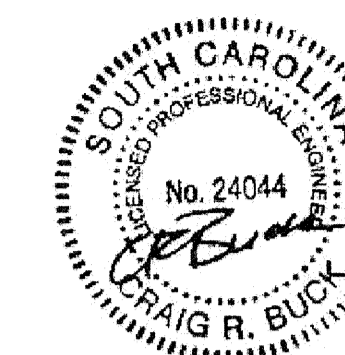
PARTIAL FOURTH FLOOR -
HVAC NEW WORK
SCALE: 1/4"=1'-0"



PARTIAL FIFTH FLOOR -
HVAC NEW WORK
SCALE: 1/4"=1'-0"



PENTHOUSE - HVAC NEW WORK
SCALE: 1/4"=1'-0"



GENERAL NOTES:

1. ALL DIFFUSERS SERVED BY VAV BOX 363 SHALL BE BALANCED TO THE CFM SHOWN.
2. THE CONTRACTOR SHALL FULLY COORDINATE THE VERTICAL EXHAUST DUCT FLOOR PENETRATION WITH THE EXISTING BUILDING COMPONENTS PRIOR TO PERFORMING ANY WORK.

DRAWING NOTES:

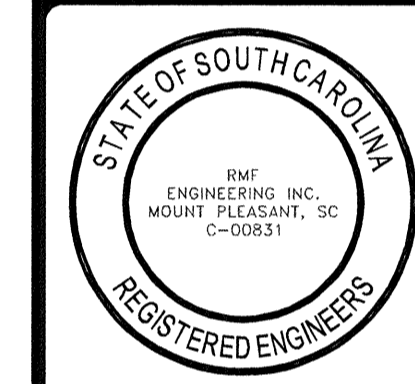
1. CONNECT EXISTING HS/HR PIPING TO NEW REHEAT COIL.
2. EXHAUST DUCTWORK SHOWN HATCHED SHALL BE PROVIDED WITH TYPE XI FIRE BARRIER INSULATION AS SPECIFIED.
3. INSULATED PLENUM WALL SECTION SHALL BE REMOVED AND REPLACED WITH A NEW SECTION TO ACCOMMODATE THE NEW DUCT PENETRATION. WALL SECTION SHALL BE OF THE SAME MATERIAL AS THE EXISTING SYSTEM. THE DUCT PENETRATION SHALL BE BY THE WALL MANUFACTURER AND SHALL NOT BE FIELD CUT BY THE CONTRACTOR. DUCT PENETRATION SHALL BE SEALED WEATHER AND AIRTIGHT PER THE WALL MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. NEW DUCTWORK SHALL BE FULLY COORDINATED WITH THE EXISTING MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION SYSTEMS.
5. DUCT AND CHASE PENETRATION SHALL BE SEALED AND FLASHED THE SAME AS AN EXTERIOR PENETRATION.
6. SUPPLY DUCT SHALL BE CAPPED AND SEALED AIR TIGHT.

Partner In Charge	
DSC	
Project Engineer	
CRB	
Drawn By	
BEK	
Date Drawn	
11-28-11	
Revisions	
No.	Date
No.	Date
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No.	Date
No.	Date
No.	Date
No.	Date
No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9639
FAX: 843-971-9641
www.rmfi.com
RMF PROJECT NUMBER: 311034.A0

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Project
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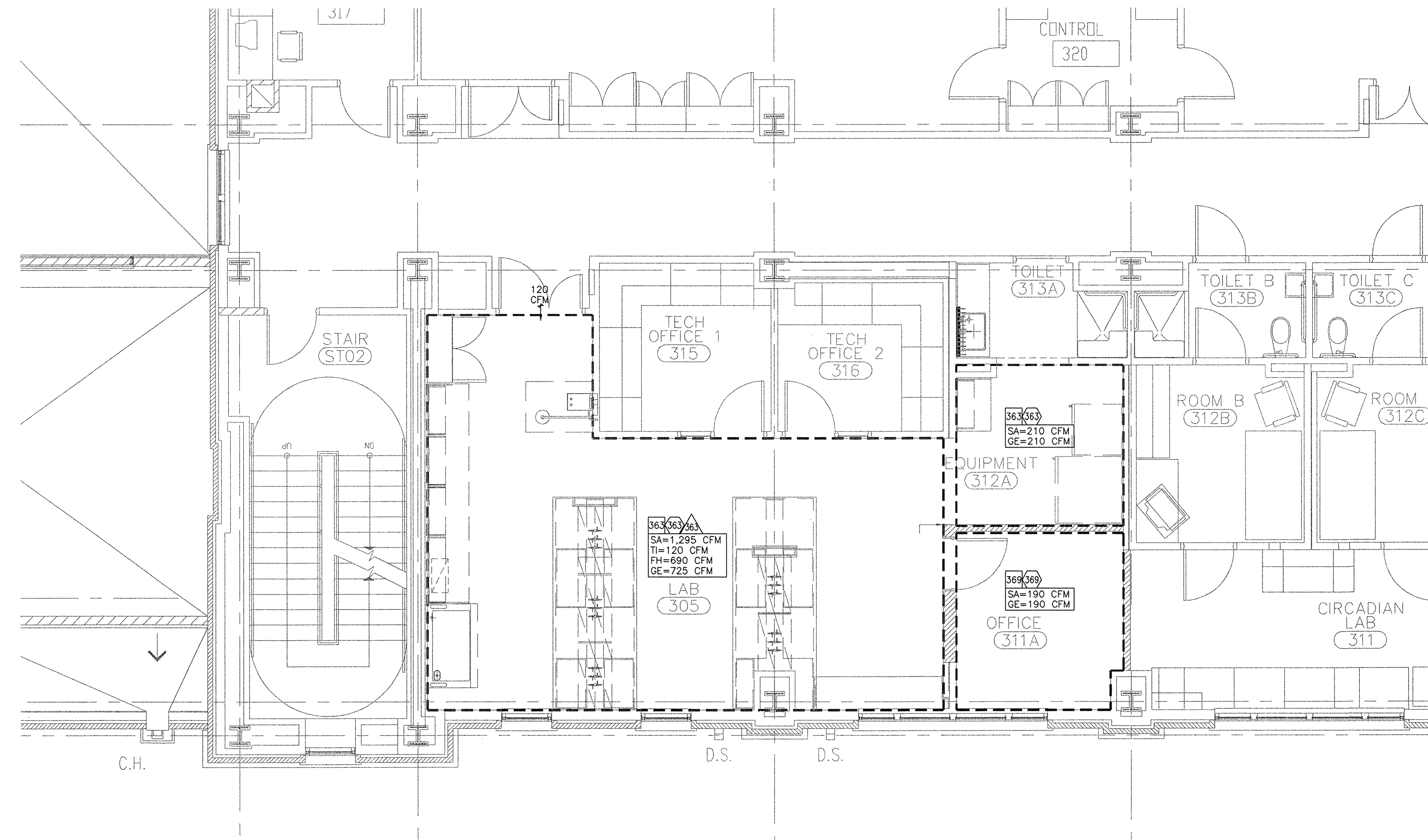
Sheet Title
PARTIAL THIRD, FOURTH, FIFTH & PENTHOUSE
FLOOR PLANS - MECHANICAL NEW WORK

jhs
Architecture
Integrated Design

1812 LINCOLN STREET
THIRD FLOOR
COLUMBIA, SC 29201-2310
PHONE: 1.803.252.2400
FAX: 1.803.252.1630

Project Number
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PARTIAL THIRD FLOOR — AIR BALANCE SUMMARY
SCALE: 1/4"=1'-0"

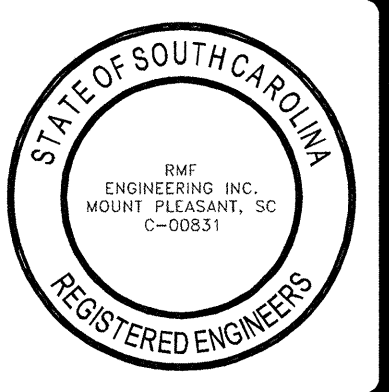


Partner In Charge	
DSC	
Project Engineer	
CRB	
Drawn By	
BEK	
Date Drawn	
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Revisions	
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No.	Date

RMF ENGINEERING, INC.
474 WANDO PARK, BOULEVARD
SUITE 100
MT. PLEASANT, SOUTH CAROLINA 29464
PHONE: 843-971-9639
FAX: 843-971-9641
www.rmfi.com
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Project	PHRC LABORATORY 305 RENOVATION
Sheet Title	PARTIAL THIRD FLOOR PLAN - HVAC AIR BALANCE SUMMARY

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PHONE: 1.803.252.2400
FAX: 1.803.252.1630

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