

USC SOM COLUMBIA MED PARK #15 BUILDING CHILLER REPLACEMENT PROJECT# 50003412-2

COLUMBIA, SC

A/E Project #20055.01 SEPTEMBER 9, 2020 ISSUED FOR CONSTRUCTION

Prepared by:



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MECHANICAL

PARTIAL ROOF AND PENTHOUSE PLAN - HVAC DEMOLITION AND RENOVATION

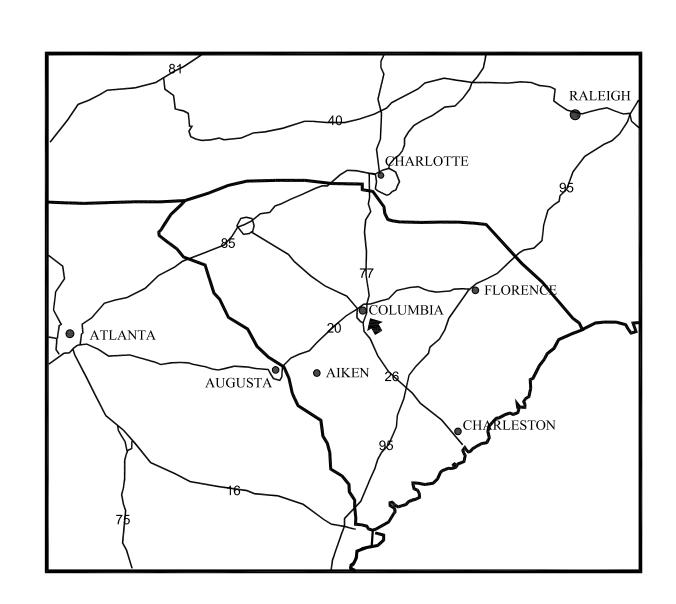
HVAC CONTROL SCHEMATICS

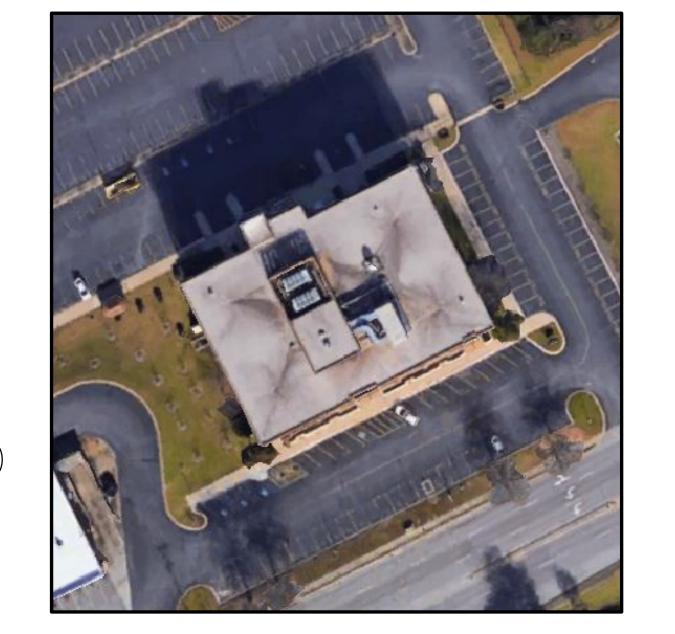
HVAC LEGENDS, NOTES, ABBREVIATIONS, AND SCHEDULES

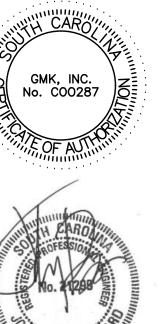
ELECTRICAL

ELECTRICAL SYMBOLS, NOTES, AND SCHEDULES ELECTRICAL DEMOLITION PLAN ELECTRICAL RENOVATION PLAN

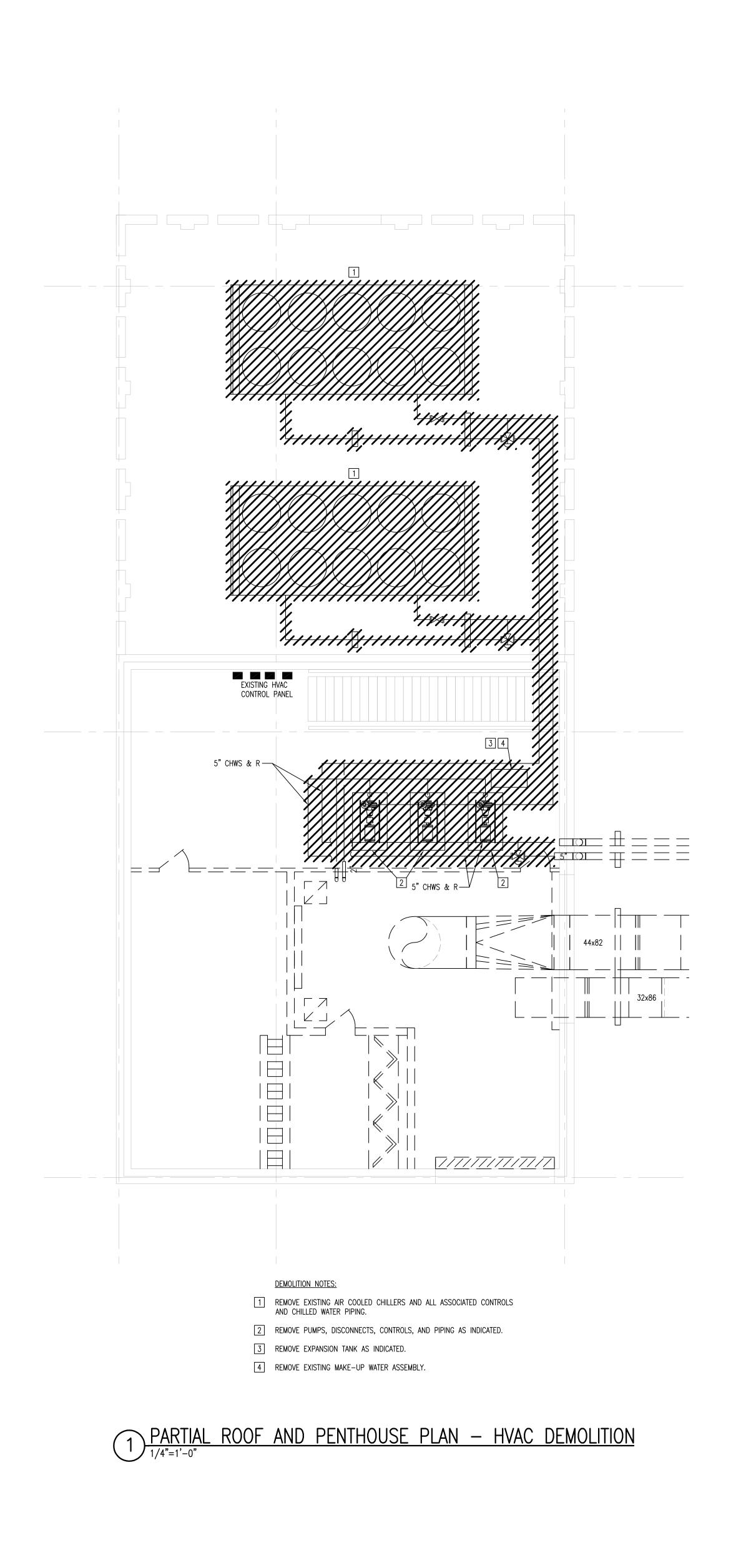
KEY PLAN

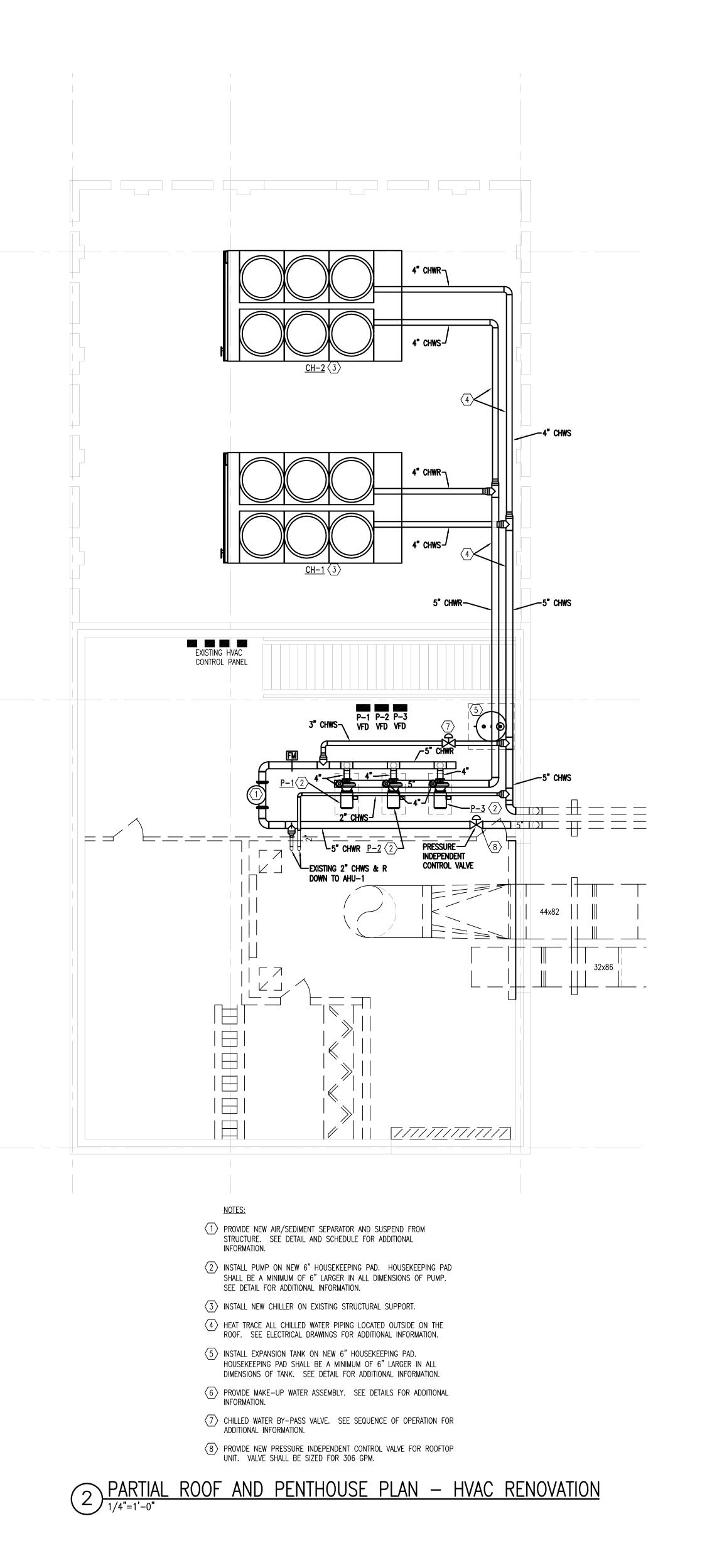












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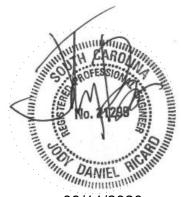
South Carolina

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seals/signature





CONSTRUCTION

September 9, 2020

number	item	date

key plan



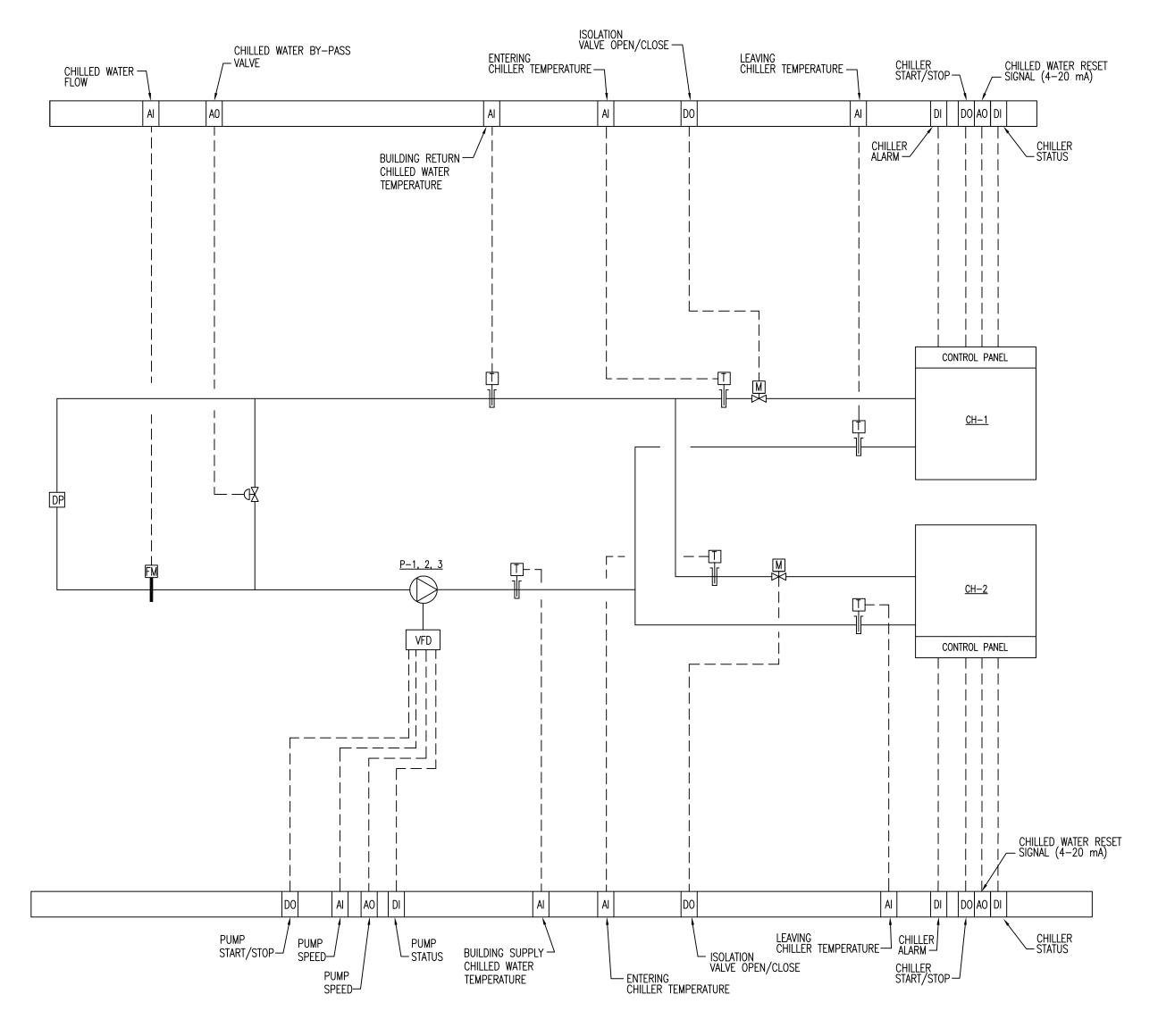


PARTIAL ROOF AND PENTHOUSE PLAN - HVAC DEMOLITION AND RENOVATION

sheet number

M2.

drawn by JDR checked by JDR



1) CHILLED WATER CONTROL SCHEMATIC

CHILLED WATER SYSTEM

1. THE COOLING SYSTEM WILL AUTOMATICALLY START WHEN THE SYSTEM ENABLE IS "ON". WHEN THE SYSTEM ENABLE IS "OFF", THE COOLING SYSTEM WILL BE

1. THIS SYSTEM CONSISTS OF TWO CHILLERS. THE CHILLERS SHALL BE CONTROLLED VIA THEIR OWN INTERNAL CONTROLS TO MAINTAIN A CHILLED WATER SUPPLY TEMPERATURE. EACH CHILLER WILL BE STAGED ON AND OFF IN ORDER TO MAINTAIN THE DIFFERENTIAL SETPOINT BETWEEN THE SUPPLY AND RETURN TEMPERATURES. WHEN A CHILLER IS REQUIRED, THE CHILLER WITH THE LOWEST RUNTIME TOTAL SHALL BE ENABLED TO RUN. THE CHILLER ISOLATION VALVE WILL BE COMMANDED OPEN PRIOR TO STARTING THE PUMP AND KEPT OPEN LONG ENOUGH FOR THE PUMP TO COAST DOWN. IF THE STATUS OF THE CHILLER ISOLATION VALVE FAILS TO MATCH THE COMMAND, AN ALARM WILL BE GENERATED AND THE NEXT CHILLER IN SEQUENCE WILL BE ENABLED. CHILLED WATER PUMP CONTROL:

1. WHEN ENABLED, A PUMP FOR EACH CHILLER WILL BE STARTED. AFTER THE CHILLER IS COMMANDED OFF, THE PUMP WILL CONTINUE TO RUN FOR A SHORT TIME TO ALLOW THE EQUIPMENT TO COAST DOWN. IF THE PUMP STATUS DOES NOT MATCH THE COMMAND, AN ALARM WILL BE GENERATED AND THE PUMP WILL BE STOPPED.

UPON LOSS OF STATUS , THE PUMP WILL RESTART AFTER THE SYSTEM RESET IS ACTIVATED. PRIMARY LOOP PRESSURE CONTROL: 1. A BYPASS VALVE WILL BE MODULATED BY THE PRIMARY FLOW SENSOR TO MAINTAIN THE MINIMUM GPM REQUIRED TO KEEP THE CHILLER ONLINE AS THE TWO-WAY

PI CONTROL VALVE ON AHU IS CLOSED. ADDITIONAL POINTS MONITORED BY THE BMS:

 CHILLER STATUS PRIMARY FLOW SENSOR ENGINEERING

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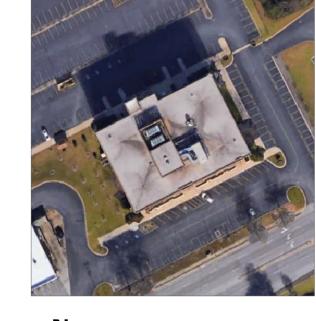




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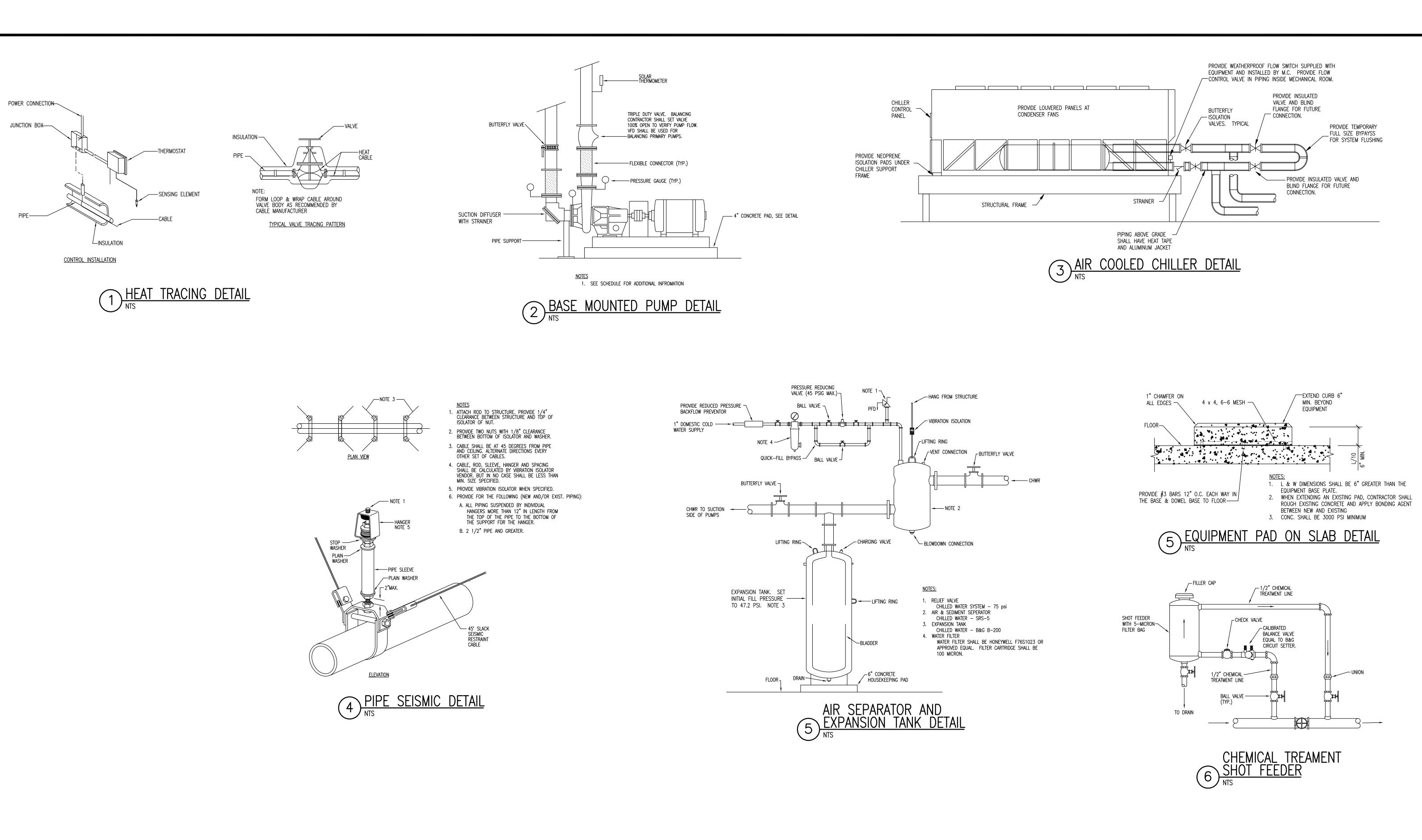


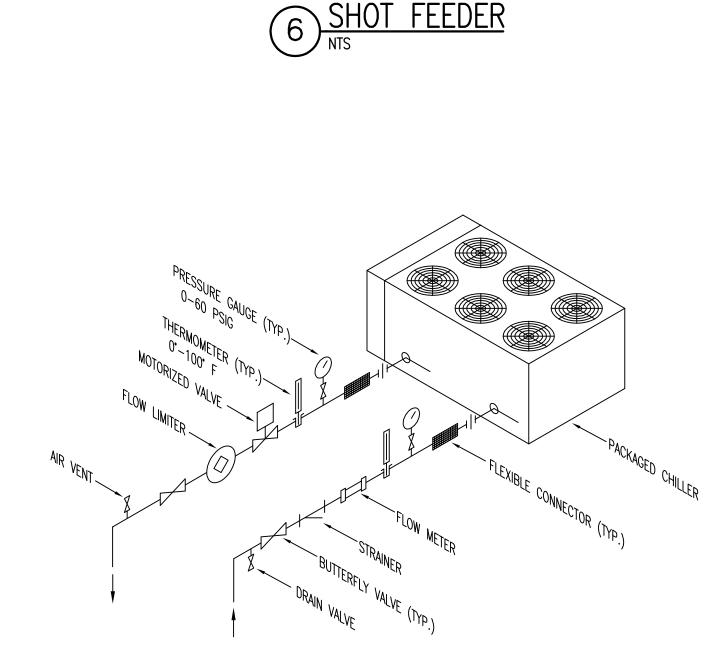


sheet title
HVAC CONTROL
SCHEMATICS

sheet number

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7 PACKAGED CHILLER PIPING DETAIL



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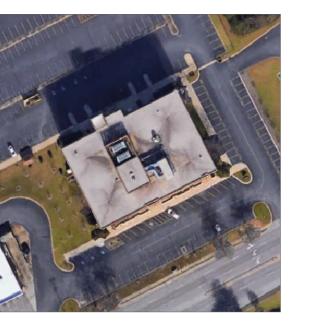


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key plan





sheet title
HVAC DETAILS

sheet number

M6.1

drawn by JDR checked by JDR

	HVAC	LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
•	CONNECT TO EXISTING		ECCENTRIC REDUCER FLAT ON TOP
CHWS	CHILLED WATER SUPPLY	-+0+	TEE OUTLET UP
CHWR	CHILLED WATER RETURN		TEE OUTLET DOWN
—— ——	UNION		GATE VALVE
	STRAINER		CONTROL VALVE, TWO WAY
-+	STRAINER WITH BLOW OFF		END CAP
	CONCENTRIC REDUCER		ELBOW TURNED DOWN
<u> </u>	PRESSURE INDICATOR	-+0	ELBOW TURNED UP
	TEMPERATURE INDICATOR		ECCENTRIC REDUCER FLAT ON BOTTOM
		——————————————————————————————————————	BUTTERFLY VALVE

- 2. DEMOLITION OF EQUIPMENT, SYSTEMS, AND COMPONENTS SHALL INCLUDE ALL SUPPORTS, PADS, HANGERS, INSULATION, CONTROLS, STARTERS, ACCESSORIES, AND APPURTENANCES NOT REQUIRED FOR THE INSTALLATION
- 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
- 5, ALL OPENINGS CREATED BY THE ABANDONMENT OR REMOVAL OF EXISTING
- 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.
- DOES NOT MATCH EXISTING FINISH SUCH AS SHADE OF PAINT, AGE OF OF 45 DEGREES.
- 8. 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

1. DO NOT SCALE DRAWINGS; SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DOORS, WINDOWS, CEILING, DIFFUSERS, ETC.

2. ALL DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS, ROOFS AND PARTITIONS EXCEPT WHERE PROHIBITED BY FIRE CODES. 3. LOCATE ALL THERMOSTATS 4'-0" ABOVE FINISH FLOOR; ALIGN WITH LIGHT SWITCHES.

4. ALL DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE. 5. CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY

6. AIR DISTRIBUTION SYSTEMS WITH MORE THAN ONE BRANCH, OR MULTIPLE OUTLETS ON A BRANCH, SHALL HAVE VOLUME DAMPERS TO BALANCE AIR FLOWS. SPIN-IN FITTINGS ARE PERMITTED FOR CONNECTING FLEX DUCT TO BRANCH OR TRUNK DUCTS WHERE FLEX DUCTS ARE INDICATED. IF FLEX DUCT CANNOT BE CONNECTED WITH A SPIN-IN, A HARD DUCTED TAKEOFF MUST BE

7. HIGH EFFICIENCY TAKEOFFS SHALL BE USED ON ALL HARD DUCTED SUPPLY

8. PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, EXHAUST FANS, AND ALL OTHER EQUIPMENT AND APPURTENANCES.

9. ALL DUCT IS GALVANIZED SHEET METAL EXCEPT AS NOTED. 10. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.

11. AIR DISTRIBUTION UNITS SHALL HAVE TRIM REQUIRED FOR FINISHED SERVICE.

ABBI	REVIATIONS)
Air Conditioning	N/A	Not Applicable
Above	NIC	Not in Contract
Above Finished Floor	NTS	Not To Scale
Brake Horsepower	OBD	Opposed Blade Dan

TEMP TSTAT

ENGINEERING Opposed Blade Damper Outside Diameter Pressure Drop Return Air Return Relative Humidity 1201 Main Street, Suite 2100 Columbia, S.C. 29201 tel. 803-256-0000 fax 803-255-7243 Supply Air Sheet Static Pressure

Static Pressure
Specifications
Supply
Thermostat
Temperature
Thermostat
Typical
Wet Bulb Temperature

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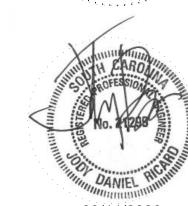
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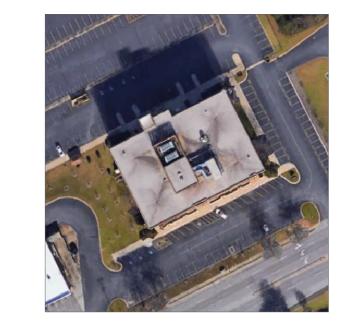
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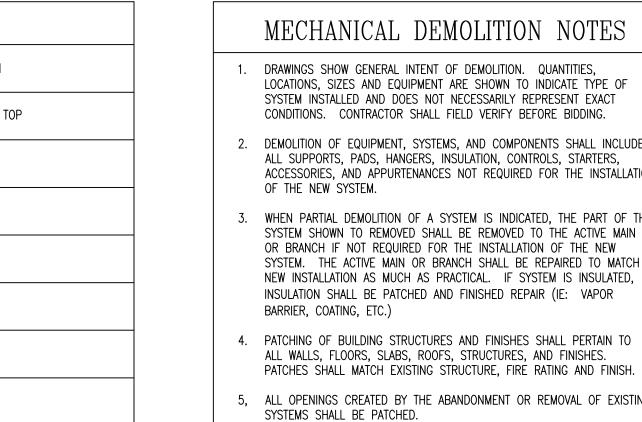




sheet title
HVAC LEGENDS, NOTES,
ABBREVIATIONS, AND SCHEDULES

sheet number

drawn by JDR checked by JDR



7. ALL FINISHES SHALL MATCH EXISTING FINISH. WHEN FINISH OBVIOUSLY

FINISH, ETC., THE FINISH SHALL BE APPLIED TO THE PATCH AND THE SURFACE IN ALL DIRECTIONS UNTIL A SURFACE CHANGE OF A MINIMUM

PUMP SCHEDULE MOTOR ELECTRICAL
MOTOR RPM HP VOLTAGE/PHASE MANUFACTURER 1800 5.0 480/3 Bell & Gossett e1531-2BD 1,3,4
 P-2
 END SUCTION
 187
 55
 1800
 5.0
 480/3
 Bell & Gossett
 e1531-2BD
 1,3,4

 P-3
 END SUCTION
 187
 55
 1800
 5.0
 480/3
 Bell & Gossett
 e1531-2BD
 1,2,3,4

VFD WITH INTEGRAL DISCONNECT PROVIDED BY DIVISION 23 4. SEE PUMP DETAIL FOR ADDITIONAL COMPONENTS BACK-UP PUMP

5. CENTER DROP OUT SPACER COUPLING.

Cubic Feet Per Minute

Duct Smoke Detector

Dry Bulb Temperature

Electric or Electrical

Entering Air Wet Bulb

Leaving Air Temperature Leaving Air Wet Bulb

<u>Fi</u>re Damper

Horsepower

Entering Air Temperature

3. BALANCE PUMP FLOW TO SPECIFIED CHILLER FLOW.

AIR COOLED CHILLER SCHEDULE FANS COMPRESSOR CHILLED WATER (3) SYSTEM 78.2 80 10.43 FAN SPEED CONTROL
 3. 0.0001 SCALE FACTOR
 2. DISCHARGE DAMPER CONTROL
 4. COMPRESSOR SOUND ATTENUATION PACKAGE 5. FAN AND CASING ATTENUATION PACKAGE 6. FACTORY MOUNTED DISCONECT AND STARTER 8. BACnet INTERFACE WITH CHILLER CONTROLS

GENERAL NOTES:

- 1. MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE #12 AWG. PROVIDE DEDICATED NEUTRAL FOR EACH MULTI-WIRE BRANCH CIRCUIT IN COMPLIANCE WITH NEC.
- 2. ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, "ECON" BY ECONOMY, OR FERRAZ
- 3. BRANCH CIRCUITS TO BE 2#12, 12GND, 3/4"C MINIMUM. 20A 277V CIRCUITS LONGER THAN 150' TO BE 2#10, #10GND, 3/4"C MINIMUM FOR VOLTAGE DROP. 20A, 277V CIRCUITS LONGER THAN 300' TO BE 2#8, #8GND, 3/4"C MINIMUM FOR VOLTAGE DROP. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES OR ON DRAWINGS.
- 4. ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSSES TO OBTAIN MINIMUM NEUTRAL
- 5. ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUND PER NEC TABLE 250-122.
- 6. SEAL ALL PENETRATIONS TO RATED WALLS, CEILINGS AND FLOORS WITH UL LISTED FIREPROOFING SYSTEM. THIS IS TO INCLUDE BUT IS IN NO WAY LIMITED TO CONDUCTOR, RACEWAY AND DEVICE PENETRATIONS. SUBMIT SYSTEM AND INSTALLATION DETAILS AS PART OF SHOP DRAWING SUBMITTAL.
- WHERE NOT INDICATED OTHERWISE, EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER NEC TABLE
- 8. ALL METAL CONDUITS 1" AND LARGER SHALL HAVE A GROUNDING BUSHING BONDING CONDUIT TO ENCLOSURE.
- 9. VERIFY ALL MECHANICAL EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS WITH MECHANICAL PLANS. IF MECHANICAL EQUIPMENT BEING PROVIDED DOES NOT MATCH DESIGN NOTIFY ENGINEER IMMEDIATELY.
- 10. CONCEAL ALL CONDUIT AND RACEWAY. IF CONDITIONS REQUIRE CONDUIT OR RACEWAY TO BE RUN EXPOSED COORDINATE ROUTING WITH ARCHITECT AND PAINT AS REQUIRED BY ARCHITECT.
- 11. ELECTRICAL WORK SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES, REQUIREMENTS AND ORDINANCES.
- 12. ELECTRICAL WORK SHALL COMPLY WITH LATEST NECA 1 STANDARDS FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION.
- 13. ALL EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE WITH INSULATED THROAT.
- 14. PROVIDE PLASTIC ENGRAVED NAMEPLATES ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT INCLUDING SWITCHBOARDS, PANELBOARDS, TRANSFER SWITCHES AND DISCONNECT SWITCHES. SWITCHBOARDS AND PANELBOARDS SHALL INDICATE NAME, SOURCE OF SUPPLY AND VOLTAGE. TRANSFER SWITCHES SHALL INDICATE NAME, SOURCE OF NORMAL AND EMERGENCY SUPPLY AND RATING. DISCONNECT SWITCHES SHALL INDICATE NAME OF EQUIPMENT BEING FED AND SOURCE CIRCUIT. ALL NAMEPLATES ON NORMAL POWER EQUIPMENT SHALL BE BLACK WITH WHITE LETTERING; ON GENERATOR FED EQUIPMENT, RED WITH WHITE LETTERING.
- 15. PROVIDE TYPEWRITTEN LABELS INDICATING SOURCE PANEL NAME AND CIRCUIT NUMBER FOR ALL 120V AND GREATER DEVICES INCLUDING ALL LIGHT SWITCHES AND RECEPTACLES. LABELS SHALL BE THERMAL TRANSFER TYPE, 3/8" WITH 1/4" LETTERING. WHITE BACKGROUND FOR BLACK DEVICES, CLEAR BACKGROUND OTHERWISE.
- 16. PROVIDE ALL EQUIPMENT WITH 75°C OR 90°C TERMINATIONS. ALL WIRE SIZING INDICATED ON PLANS IS BASED ON 75°C TERMINATIONS. WHERE EQUIPMENT IS PROVIDED BY OTHERS AND IS NOT SPECIFICALLY LISTED AND MARKED WITH 75°C TERMINATIONS INCREASE CONDUCTOR SIZE BASED ON NEC TABLE 310.15(B)(16) 60°C COLUMN FOR CIRCUITS 100 AMPERES AND LESS IN SIZE.

	ELECTRICAL SYMBOL SCHEDULE - GENERAL
ENERAL	
PP1-2,4	BRANCH CIRCUIT RACEWAY. RUN CONCEALED IN CEILING OR WALLS. ARROWHEAD DENOTES HOMERUN TO PANEL. TEXT DENOTES PANEL NAME AND CIRCUIT NUMBERS FOR HOMERUN. INSTALL GROUND WIRE IN ALL RACEWAYS. #12 AWG MINIMUM AND AS PER CODE.
PP1-2,4	BRANCH CIRCUIT RACEWAY. RUN IN OR UNDER SLAB OR FLOOR. ARROWHEAD DENOTES HOMERUN TO PANEL. TEXT DENOTES PANEL NAME AND CIRCUIT NUMBERS FOR HOMERUN. INSTALL GROUND WIRE IN ALL RACEWAYS. #12 AWG MINIMUM AND AS PER CODE.
PP1	ELECTRICAL DISTRIBUTION OR BRANCH CIRCUIT PANELBOARD. TEXT DENOTES NAME, REFER TO DRAWINGS FOR LOCATION. SEE POWER RISER DIAGRAM AND PANEL SCHEDULES. SURFACE OR FLUSH MOUNTED AS INDICATED ON PANEL SCHEDULE.

	ELECTRICAL SYMBOL SCHEDULE - POWER
POWER	
	HEAVY DUTY DISCONNECT SWITCH, SEE SCHEDULE.

DISCONNECT SWITCH SCHEDULE		
SWITCH	DESCRIPTION	
S-1	30A/2P	
S-2	60A/2P	
S-3	100A/2P	
S-4	200A/2P	
S-5	400A/2P	
S-6	30A/3P	
S-7	60A/3P	
S-8	100A/3P	
S-9	200A/3P	
S-10	400A/3P	
S-11	30A/4WSN	
S-12	60A/4WSN	
S-13	100A/4WSN	
S-14	200A/4WSN	
S-15	400A/4WSN	
SWITCH NOTES:		

ALL DISCONNECTS SHALL BE HEAVY 240V OR 600V TO SUIT CIRCUIT VOLTAGE. ALL DISCONNECTS FUSIBLE UNLESS

OTHERWISE NOTED, PROVIDE FUSES TO ENCLOSURES NEMA 3R OUTDOORS AND IN WET LOCATIONS, NEMA 1 ELSEWHERE UNLESS OTHERWISE

ALL OUTDOOR DISCONNECTS SERVING GROUND MOUNTED HVAC UNITS SHALL NOT BE MOUNTED HIGHER THAN 36" ABOVE FINISHED GRADE.

RACEWAY MATER	RIAL SCHEDULE
SERVICE EQUIPMENT SERVICE DISCONNECT SERVICE ENTRANCE RACEWAY MATERIALS:	PANEL OVERCURRENT DEVICE BRANCH CIRCUIT FINAL OVERCURRENT DEVICE MOTOR BRANCH CIRCUIT

SERVICE ENTRANCE: IMC, GRS, SCHED 40 PVC (WITH GRS 90 ELBOWS). IMC AND GRS TO HAVE BITUMINOUS COATING IF INSTALLED BELOW GRADE. FEEDERS: EMT, IMC, GRS

BRANCH CIRCUITS CONCEALED ABOVE CEILING/IN WALLS: EMT, IMC, GRS,

BRANCH CIRCUITS EXPOSED (INTERIOR): EMT

IN OR UNDER CONCRETE FLOORS: SAME AS SERVICE ENTRANCE.

OUTDOORS BELOW GRADE: SAME AS SERVICE ENTRANCE. OUTDOORS EXPOSED: IMC, GRS

FINAL CONNECTIONS TO MECHANICAL EQUIPMENT (3' MAX): LIQUID TIGHT FLEXIBLE METAL CONDUIT (TYPE LFMC) IN DAMP AND WET LOCATIONS,

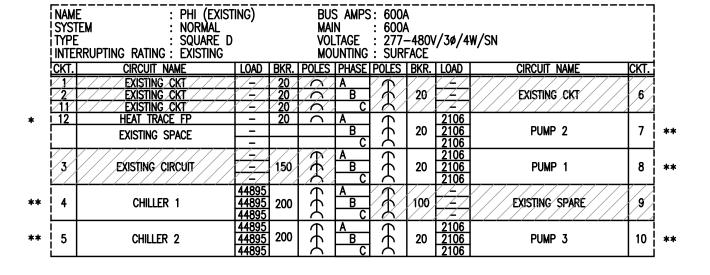
FLEXIBLE METAL CONDUIT IN DRY LOCATIONS. MAX): AC/MC CABLE IN DRY LOCATIONS.

ODE, WITH APPROVAL OF OWNER, AND CONCEALED IN D CEILINGS.

	LIGH	IT FIXTURE WHIPS (3' MAX): AC/MC CAE
		ERE PERMITTED BY CODE, WITH APPROVAL LS OR ABOVE FINISHED CEILINGS.
•		
		ABBREVIATIONS
	A	AMPERE.
	AFF	ABOVE FINISHED FLOOR.
	AFG	ABOVE FINISHED GRADE.
	BKR	BREAKER.
	C	CONDUIT.
	CATV	CABLE TELEVISION CIRCUIT.
	СКТ	CIRCUIT.
	EC	ELECTRICAL CONTRACTOR, DIVISION 26
	EF	EXHAUST FAN.
	EMT	ELECTRICAL METALLIC TUBING.
	FCU	FAN COIL UNIT.
	GC	GENERAL CONTRACTOR, DIVISION 00 TH
	GF	GROUND FAULT CIRCUIT INTERRUPTER.
	GRS	GALVANIZED RIGID STEEL CONDUIT.
	HID	HIGH INTENSITY DISCHARGE.

ACTOR, DIVISION 26 (DIV 26). OR, DIVISION 00 THROUGH 14. CUIT INTERRUPTER. STEEL CONDUIT. HID | HIGH INTENSITY DISCHARGE. IG DEVICE SHALL HAVE ISOLATED GROUND. SEE SPECIFICATIONS. IMC INTERMEDIATE METALLIC CONDUIT. JB or J-BOX JUNCTION BOX. KVA KILOVOLT AMPERES. KW KILOWATT. MAX MAXIMUM. MC | MECHANICAL CONTRACTOR, DIVISION 23 (DIV 23). MDP | MAIN DISTRIBUTION PANEL. MFR | MANUFACTURER. NMC | NONMETALLIC-SHEATHED CABLE. NEC | NATIONAL ELECTRICAL CODE. (NFPA 70). SWBD SWITCHBOARD. TYPICAL. UNLESS NOTED OTHERWISE. WC WATER COOLER.

TRANSFORMER.



NOTE: EXISTING LOAD BASED ON PRIOR CONSTRUCTION DOCUMENTS.

* NEW CIRCUIT BREAKER TO MATCH EXISTING FAULT CURRENT RATINGS. SIZE AS SHOW OR AS REQUIRED BY EQUIPMENT BEING INSTALLED.
"GF" DENOTES GROUND FAULT TYPE CIRCUIT BREAKER. "AF" DENOTES ARC FAULT TYPE CIRCUIT BREAKER.
"LK" DENOTES PROVIDE LOCKING PROVISIONS PER NFPA 72. "ST" DENOTES SHUNT TRIP TYPE CIRCUIT BREAKER.

HATCHING DENOTES EXISTING CIRCUITS IN USE AND TO REMAIN "AS-IS". EXISTING CONNECTED LOAD* (KVA): 284.99
NEW ADDITIONAL CONNECTED LOAD (KVA): 288.32

TOTAL CONNECTED LOAD (KVA): 3.33 ** EXISTING CIRCUIT BREAKER BEING REUSED.

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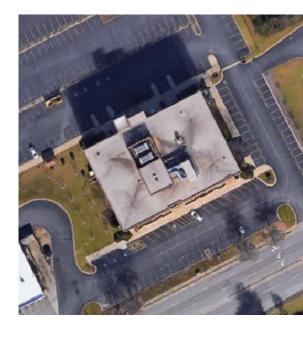




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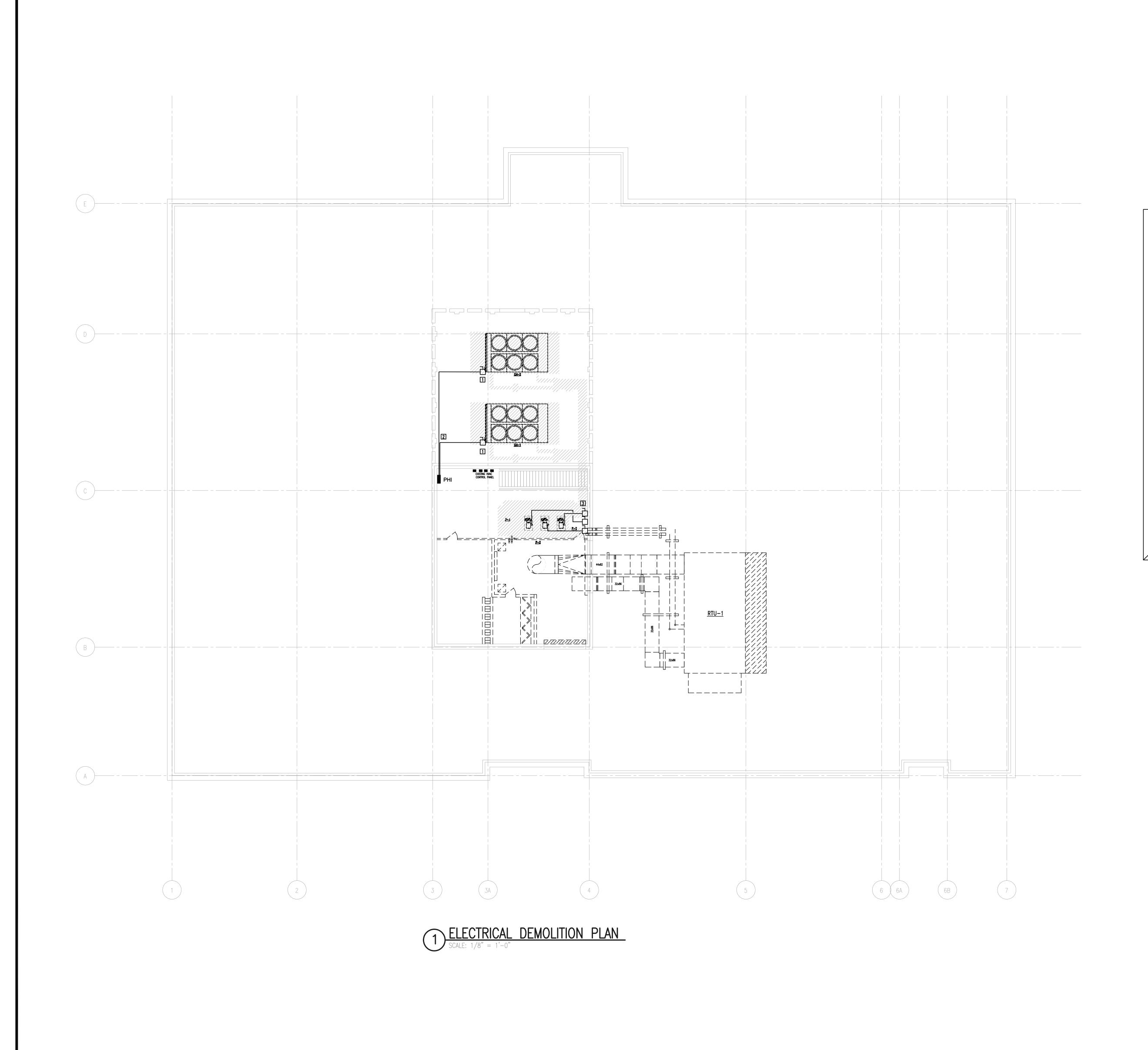
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ELECTRICAL SYMBOLS NOTES AND SCHEDULE

sheet number



GENERAL DEMOLITION NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND REMOVAL OF ANY ELECTRICAL DEVICES OR SYSTEMS AS REQUIRED FOR MECHANICAL SYSTEMS RENOVATION WORK. COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE LABOR AND MATERIALS FOR ALL WORK REQUIRED TO DISCONNECT DEVICES, LIGHT FIXTURES, ETC AT EQUIPMENT SCHEDULED FOR DEMOLITION.

WHERE DEVICES OR FIXTURES ARE REMOVED OR OTHERWISE MODIFIED TO ACCOMMODATE NEW CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONNECTIONS AND WIRING TO EXISTING BRANCH CIRCUITS AND DEVICES AND EXTENDING CIRCUITS AS REQUIRED TO MAINTAIN CONNECTIVITY TO EXISTING ADJACENT DEVICES AND FIXTURES TO REMAIN. NOTIFY OWNER PRIOR TO DISCONNECTION OR REMOVAL OF ANY ELECTRICAL SYSTEM DEVICE OR EQUIPMENT.

WHERE DEVICES OR EQUIPMENT ARE ABANDONED OR DEMOLISHED AS PART OF THE SCOPE OF WORK, THE OWNER HAS FIRST RIGHT OF REFUSAL TO ALL EQUIPMENT, WIRING, AND MATERIALS DEMOLISHED. THE CONTRACTOR SHALL PROVIDE FOR PROPER DISPOSAL OF ALL EQUIPMENT AND MATERIALS NOT ACCEPTED BY THE OWNER. CONTRACTOR SHALL PROVIDE FOR REASONABLE TRANSPORTATION TO STORAGE FACILITY AS DIRECTED BY THE OWNER FOR ALL EQUIPMENT AND MATERIALS FOR WHICH THE OWNER CHOOSES TO RETAIN POSSESSION OF AFTER REMOVAL.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING, PAINTING, ETC AS REQUIRED TO CLOSELY MATCH ADJACENT BUILDING FINISHES WHERE DEVICES OR EQUIPMENT ARE REMOVED.

WHERE DEVICES OR FIXTURES ARE DEMOLISHED OR OTHERWISE ABANDONED AS PART OF THIS WORK, THE CONTRACTOR SHALL REMOVE ALL WIRING, RACEWAY, AND PERIPHERAL MATERIALS AND SUPPORTS TO SOURCE PANEL OR TO NEAREST JUNCTION BOX WHERE CIRCUIT SERVES OTHER DEVICES OR FIXTURES IN ADJACENT AREAS WHICH ARE TO REMAIN. FIELD COORDINATE.

CONTRACTOR SHALL PROVIDE REVISED CIRCUIT DIRECTORIES IN ALL PANELBOARDS ASSOCIATED WITH AREA OF RENOVATION TO INDICATE ALL LOADS BOTH EXISTING AND MODIFIED/NEW UPON COMPLETION OF RENOVATION WORK. CONTRACTOR SHALL PROVIDE REVISED NAME PLATES FOR ALL SWITCHGEAR AND MOTOR CONTROL CENTER BUCKETS ASSOCIATED WITH EQUIPMENT RENOVATION WORK; WHEN BUCKETS ARE MODIFIED TO NO LONGER FEED ANY LOAD, A NAME PLATE INDICATING THAT THE BUCKET IS "Spare" shall be provided.

REMOVE ALL SUSPENDED OR CEILING MOUNTED DEVICES FROM CEILINGS BEING DEMOLISHED OR REWORKED AND REINSTALL AT SAME LOCATION OR NEW LOCATION AS DESCRIBED ON RENOVATION DRAWINGS. PROTECT OR REMOVE AND REINSTALL ALL SUSPENDED OR CEILING MOUNTED DEVICES IN AREAS WHERE MECHANICAL RENOVATION WORK MAY DAMAGE THESE DEVICES. COORDINATE MECHANICAL SCOPE WITH MECHANICAL CONTRACTOR.

CAREFULLY REVIEW ALL DEMOLITION AND RENOVATION PLANS, INCLUDING MECHANICAL PLANS. EXAMINE WORK TO BE DONE AND PROVIDE ALL ELECTRICAL WORK AS REQUIRED FOR DEMOLITION OF WALLS, CEILINGS, EQUIPMENT, OR SIMILAR AS DESCRIBED IN CONTRACT DOCUMENT SET. THIS INCLUDES RELOCATION, REROUTING, ETC OF ELECTRICAL CIRCUITS OR INFRASTRUCTURE WHERE REQUIRED FOR WORK UNDER OTHER TRADES WHETHER SPECIFICALLY INDICATED ON ELECTRICAL DRAWINGS OR NOT. CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO PLACING BID AND INCLUDE IN BID ANY LABOR AND MATERIALS ASSOCIATED WITH RELOCATION OR MODIFICATION OF EXISTING ELECTRICAL SYSTEMS WHICH MAY BE AFFECTED BY WORK IN THE AREAS OF RENOVATION OR ADJACENT BUILDING AREAS.

DEMOLITION KEYNOTES:

DEMOLISH AND REMOVE EXISTING
 DISCONNECT AND WIRING BACK TO
 SOURCE PANEL.

2 DEMOLISH AND REMOVE EXISTING WIRING BACK TO SOURCE PANEL, RE-USE EXISTING CONDUIT FOR RENOVATION.

3 DEMOLISH AND REMOVE EXISTING WIRING AND CONTROLS FOR PUMPS.



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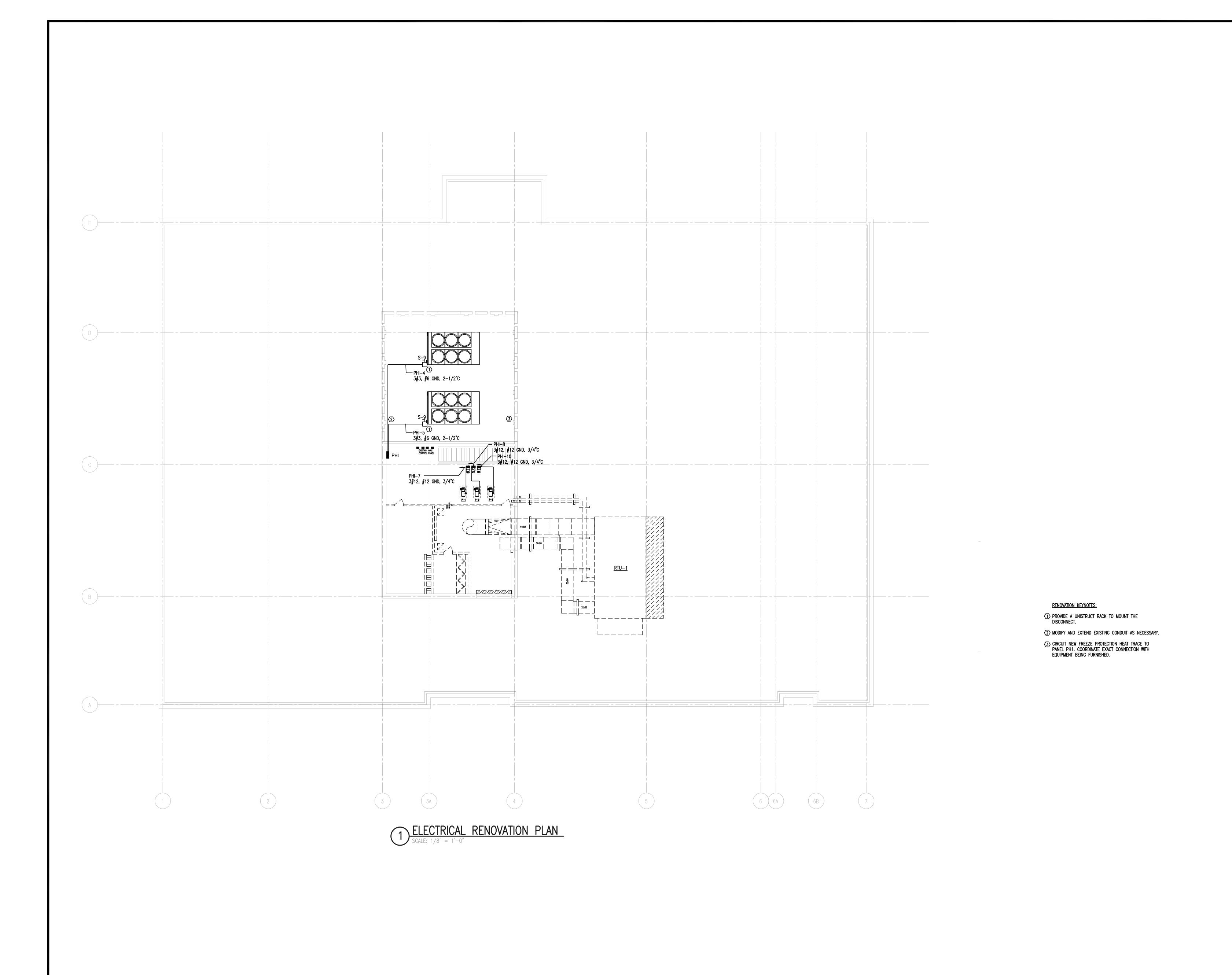
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ELECTRICAL DEMOLITION PLAN



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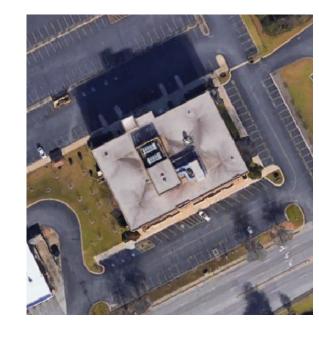




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ELECTRICAL RENOVATION PLAN

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