UNIVERSITY OF SOUTH CAROLINA

COLUMBIA, SOUTH CAROLINA

JONES PHYSICAL SCIENCE CENTER MECHANICAL SYSTEM RENOVATION

State Project #H27-Z340
GMK Project #19027.01
JULY 10, 2019
CONSTRUCTION DOCUMENTS

Prepared by:

GMK ASSOCIATES, INC.

Design/Planning/Construction
1201 Main Street
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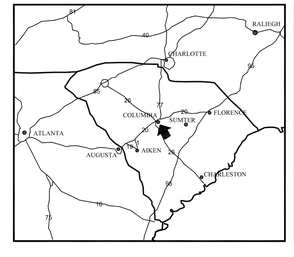
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GMK, INC. No. C00287

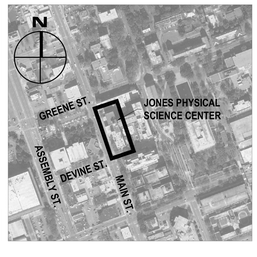
SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 14288 JOHN DANIEL RICHARD

07/10/2019

DRAWING INDEX

KEY PLAN

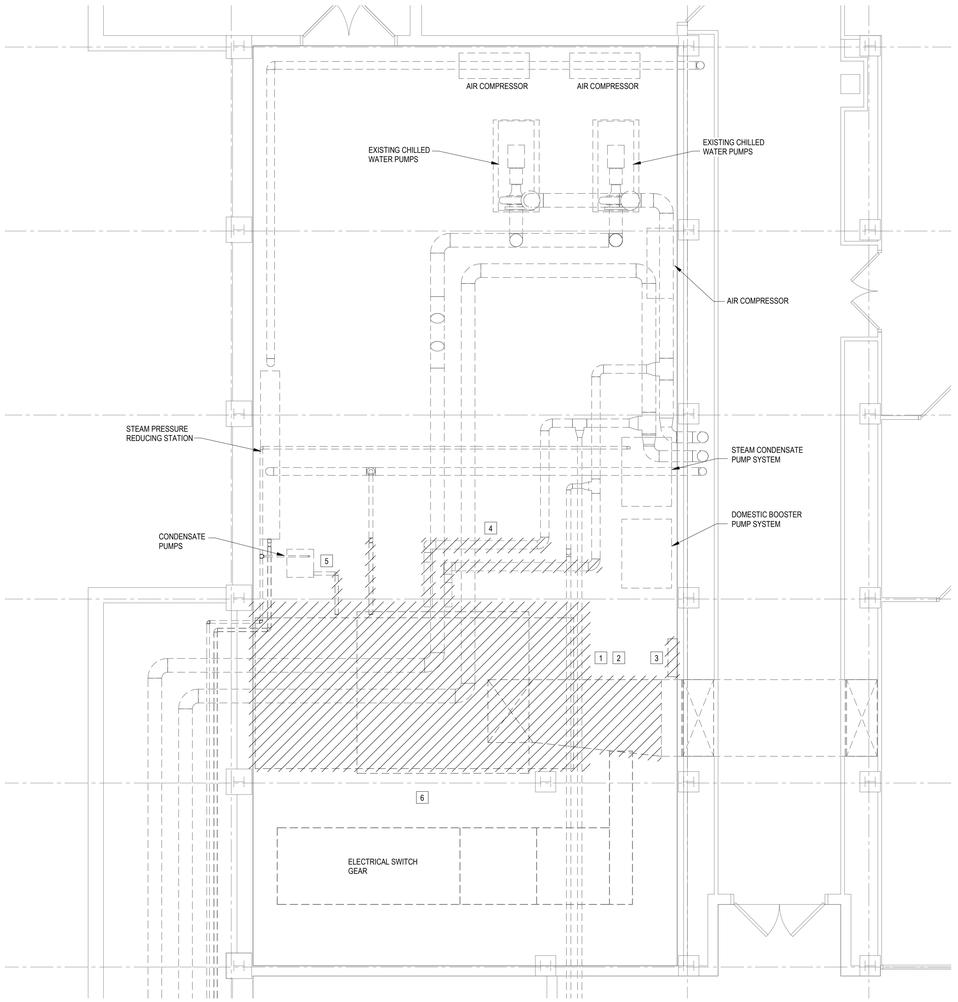




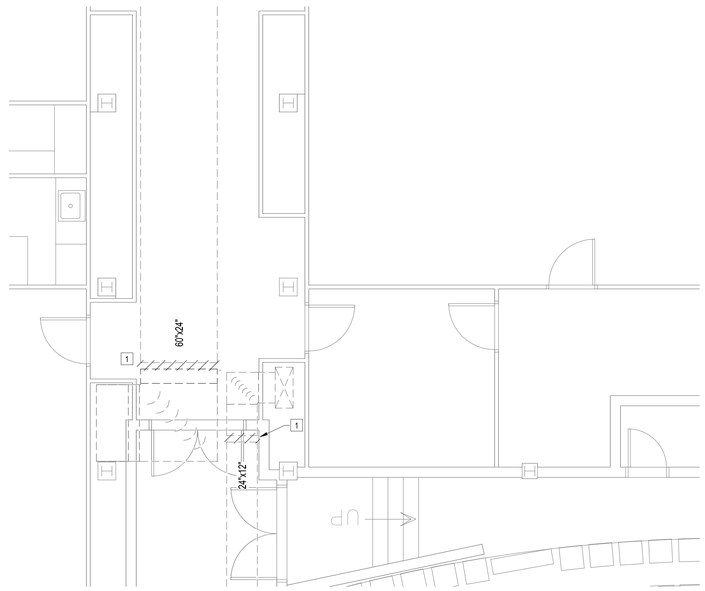
SET NO. ___

DEMOLITION NOTES:

1. REMOVE EXISTING AH-1, ASSOCIATED CONTROLS, AND DUCTWORK. SEE RENOVATION PLAN FOR ADDITIONAL INFORMATION.
2. REMOVE EXISTING HOUSEKEEPING PAD FOR AH-1.
3. EXISTING CONTROL PANELS FOR AH-1 TO BE REMOVED THE CONTROLS CONTRACTOR. VERIFY CONTROL PANELS SERVE ONLY EQUIPMENT BEING REMOVED. IF PANEL SERVES OTHER EQUIPMENT IN OPERATION, CONTROLS CONTRACTOR SHALL LEAVE PANELS SO EXISTING EQUIPMENT REMAINS IN OPERATION. CONTROLS CONTRACTOR SHALL REMOVE ALL PNEUMATIC TUBING ASSOCIATED WITH AH-1.
4. REMOVE CHILLED WATER PIPING AS HATCHED.
5. REMOVE STEAM AND CONDENSATE PIPING AS HATCHED.
6. CONTRACTOR SHALL NOTIFY THE UNIVERSITY OF ANY HAZARDIOUS MATERIAL OR ANY MATERIALS THAT MAY BE QUESTIONABLE OF BEING HAZARDIOUS PRIOR TO ANY WORK COMMENSING ON THIS PROJECT.



1 PARTIAL BASEMENT FLOOR PLAN - HVAC DEMOLITION
1/4" = 1'-0"



GENERAL NOTE:

THE ABATEMENT CONTRACTOR ENCLOSED THE CONTAMINATED CHASES BEHIND BARRIER WALLS IN A PREVIOUS PROJECT. THESE BARRIER WALLS WERE INSTALLED AROUND THE PERIMETER OF THE CONTAMINATED CHASES AND ORANGE SPRAY FOAM WAS USED TO SEAL THE BARRIER WALLS. MECHANICAL CONTRACTOR SHALL NOT DISTURBED THE BARRIER WALLS OR ANY ORANGE SPRAY FOAM WHILE INSTALLING THESE DAMPERS.

DEMOLITION NOTES:

1. REMOVE SECTION OF EXISTING DUCT FOR INSTALLATION OF NEW DAMPER. SEE M2.0 FOR CONTINUATION.

2 PARTIAL THIRD FLOOR PLAN - HVAC DEMOLITION
1/4" = 1'-0"

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seals/signature

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 14208 JODY DANIEL RICHARD

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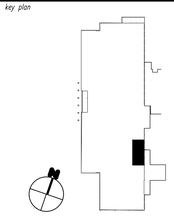


sheet title

PARTIAL BASEMENT AND THIRD FLOOR PLAN - HVAC DEMOLITION

sheet number

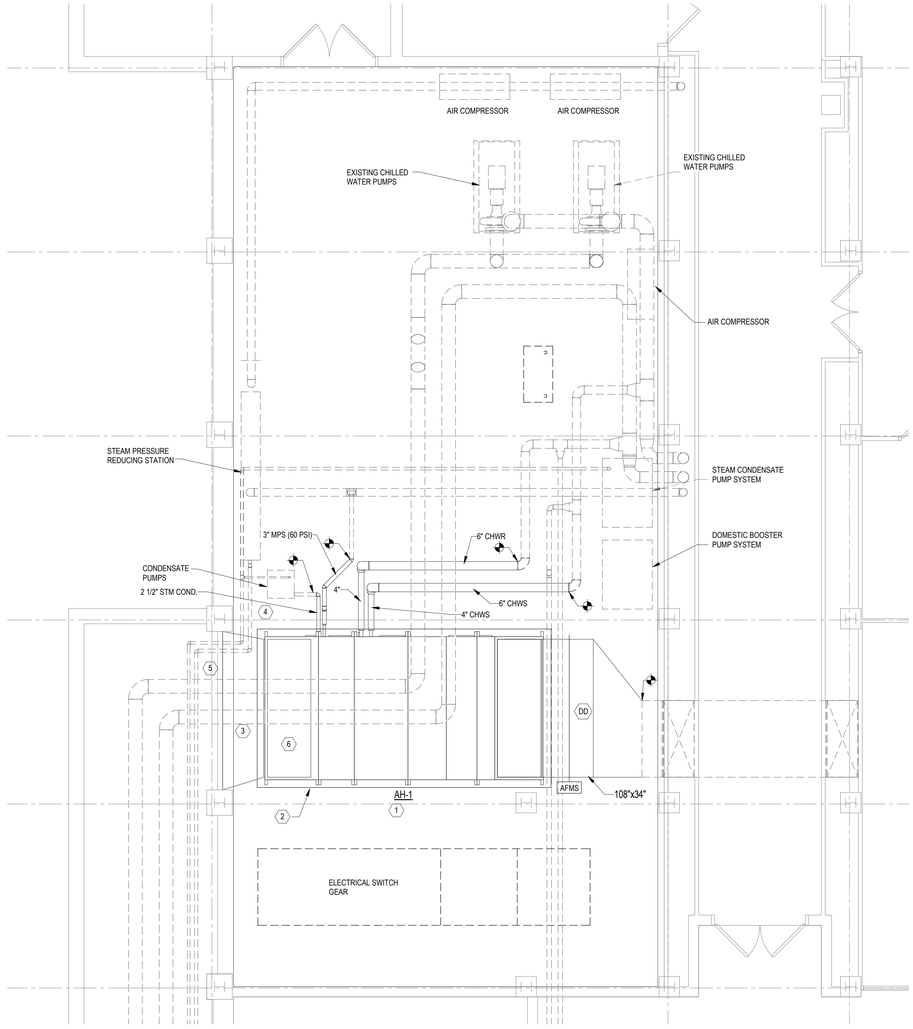
M1.0

drawn by JDR

checked by JWR

NOTES:

1. PROVIDE DEEP SEAL P-TRAP FULL SIZE OF UNIT CONNECTION AND ROUTE CONDENSATE FROM UNIT TO NEAREST FLOOR DRAIN. PROVIDE A MINIMUM OF 1" AIR GAP BETWEEN CONDENSATE DISCHARGE AND FLOOR DRAIN.
2. PROVIDE NEW HOUSEKEEPING PAD FOR AC-1. HOUSEKEEPING PAD SHALL BE A MINIMUM OF 6" LARGER IN ALL DIMENSIONS OF AH-1. SEE DETAIL FOR ADDITIONAL INFORMATION.
3. CONNECT OUTSIDE AIR DUCT TO EXISTING LOUVER.
4. CONTRACTOR SHALL FABRICATE A TRANSITION BETWEEN THE INTAKE LOUVER AND THE OUTSIDE AIR CONNECTION ON UNIT. TRANSITION SHALL ALLOW EXISTING STEAM AND CONDENSATE PIPING TO PASS THROUGH AND SEAL PENETRATIONS.
5. CLEAN EXISTING INTAKE LOUVER.
6. BLANK OFF FUTURE RETURN CONNECTION.



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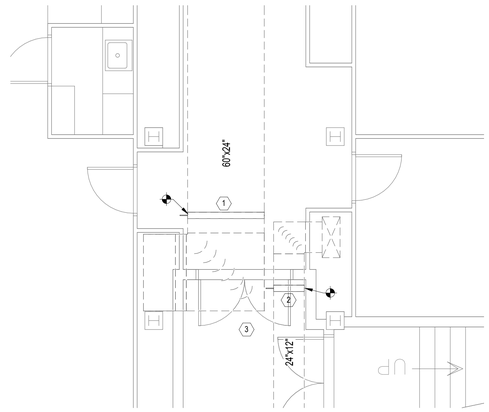
1/4" = 1'-0"



NOTES:

1. INSTALL NEW 60X14 LOW LEAKAGE DAMPER AND CLOSE.
2. INSTALL NEW 24X12 LOW LEAKAGE DAMPER AND CLOSE.
3. THE ABATEMENT CONTRACTOR ENCLOSED THE CONTAMINATED CHASES BEHIND BARRIER WALLS IN A PREVIOUS PROJECT. THESE BARRIER WALLS WERE INSTALLED AROUND THE PERIMETER OF THE CONTAMINATED CHASES AND ORANGE SPRAY FOAM WAS USED TO SEAL THE BARRIER WALLS. MECHANICAL CONTRACTOR SHALL NOT DISTURBED THE BARRIER WALLS OR ANY ORANGE SPRAY FOAM WHILE INSTALLING THESE DAMPERS.

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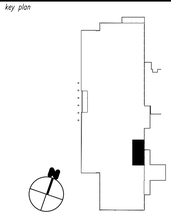

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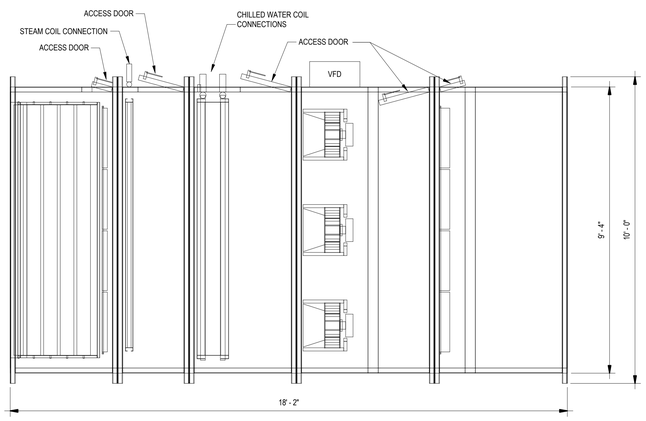
PARTIAL BASEMENT AND THIRD FLOOR PLAN - HVAC RENOVATION

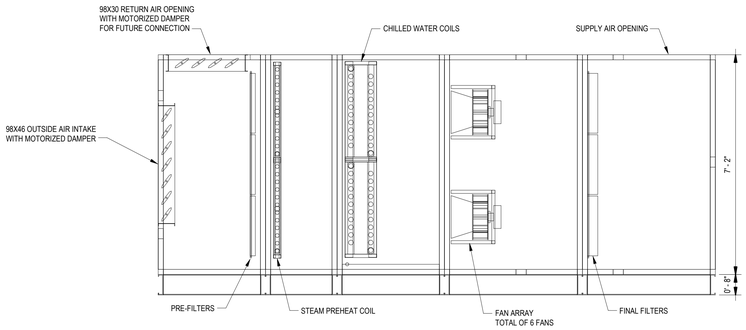
sheet number

M2.0

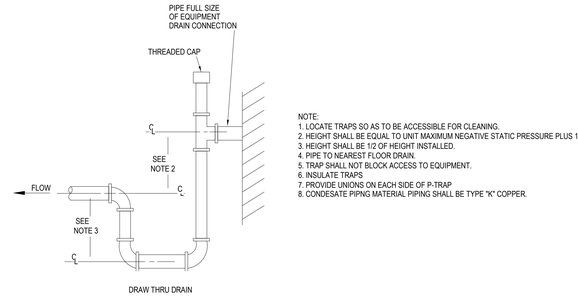
drawn by JDR

checked by JWR



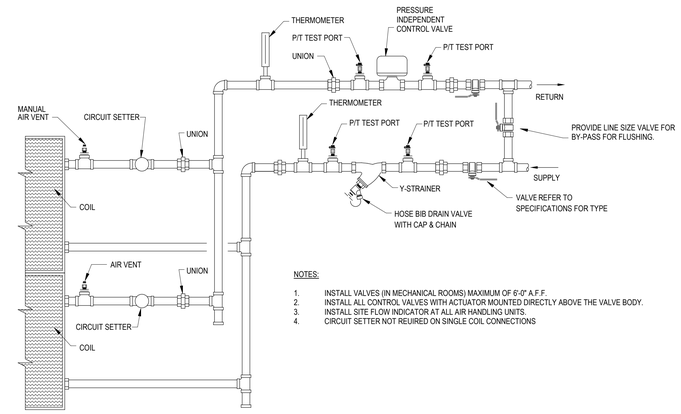


6 AH-1 CONFIGURATION DETAIL
NTS



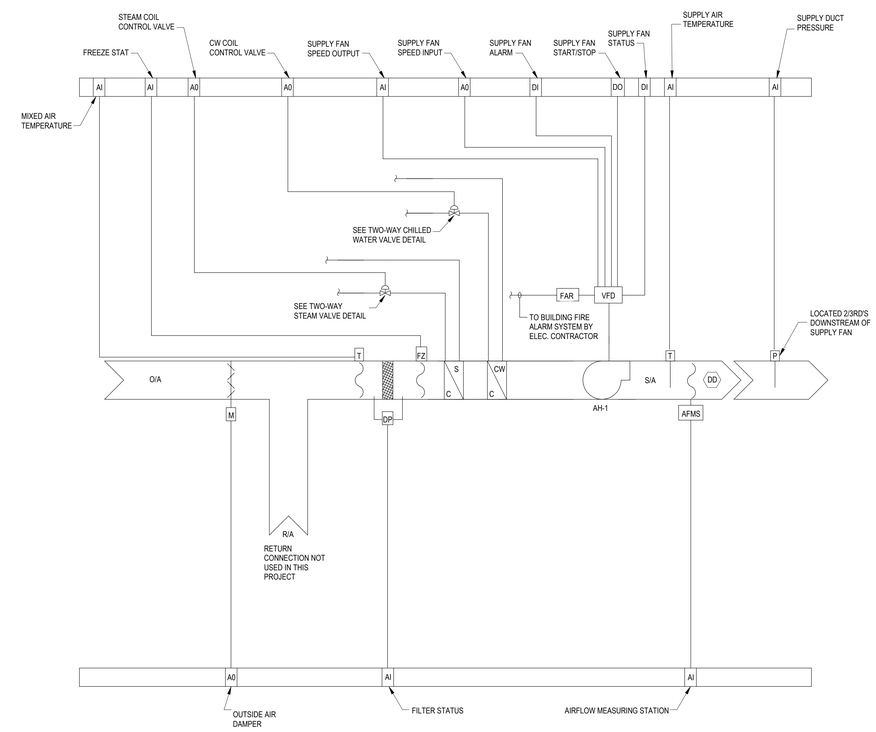
NOTE:
1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
2. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
3. HEIGHT SHALL BE 1/2 OF HEIGHT INSTALLED.
4. PIPE TO NEAREST FLOOR DRAIN.
5. TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT.
6. INSULATE TRAPS.
7. PROVIDE UNIONS ON EACH SIDE OF P-TRAP
8. CONDESATE PIPNG MATERIAL PIPING SHALL BE TYPE "K" COPPER.

1 EQUIPMENT CONDENSATE DRAIN DETAIL
NTS



NOTES:
1. INSTALL VALVES (IN MECHANICAL ROOMS) MAXIMUM OF 6'-0" A.F.F.
2. INSTALL ALL CONTROL VALVES WITH ACTUATOR MOUNTED DIRECTLY ABOVE THE VALVE BODY.
3. INSTALL SITE FLOW INDICATOR AT ALL AIR HANDLING UNITS.
4. CIRCUIT SETTER NOT REUIRED ON SINGLE COIL CONNECTIONS

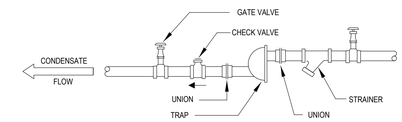
2 TWO WAY COIL PIPING DETAIL (PRESSURE INDEPENDENT CONTROL VALVE)
NTS



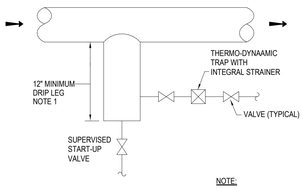
AIR HANDLING UNITS

A. ALL SET POINTS ON AIR HANDLERS SHALL BE ADJUSTABLE.
B. OCCUPIED MODE:
1. THE AIR HANDLING UNIT SUPPLY FAN SHALL BE STARTED AND STOPPED BY THE ENERGY MANAGEMENT SYSTEM UNDER A TIME OF DAY SCHEDULE. THIS SCHEDULE SHALL BE MODIFIED BY A START STOP OPTIMIZATION PROGRAM.
2. DURING OCCUPANCY, UPON PROOF OF AIR FLOW THRU THE SUPPLY FAN THE NORMALLY CLOSED OUTSIDE AIR DAMPER SHALL BE ENABLED.
3. THE CHILLED WATER VALVES AND STEAM VALVES SHALL BE SEQUENCED TO ACHIEVE SET POINT.
4. THE STATIC PRESSURE SENSOR IN THE SUPPLY DUCT SHALL MODULATE THE VARIABLE FREQUENCY DRIVE TO MAINTAIN THE SET POINT ESTABLISHED DURING FINAL TESTING AND BALANCING.
5. SMOKE DETECTION & AH SHUTDOWN:
a. THE BUILDING FIRE ALARM SYSTEM SHALL PROVIDE AN AIR HANDLER SHUT DOWN SIGNAL.
b. THE BUILDING FIRE ALARM SYSTEM SHALL PROVIDE ONE DIGITAL OUTPUT TO THE BAS TO INDICATE ALARM CONDITION. WIRING FOR THIS ALARM POINT SHALL BE PROVIDED BY THE BAS SUBCONTRACTOR.

7 AIR HANDLER CONTROL SCHEMATIC
NTS

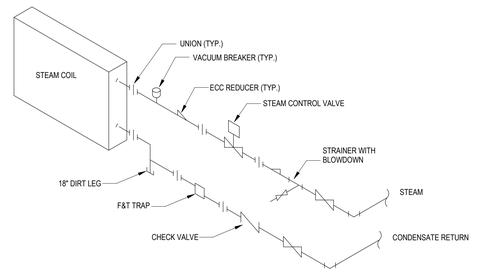


3 F&T TRAP DETAIL
NTS



NOTE:
1. DRIP LEG SAME DIAMETER AS HEADER.

4 DRIP LEG DETAIL (30 PSIG AND ABOVE)
NTS



5 STEAM COIL PIPING DETAIL
NTS

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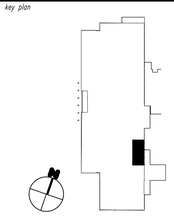

sheet title

HVAC DETAILS

sheet number

M6.1

drawn by JDR
checked by JWR

COOLING COIL SCHEDULE

IDENTITY						CHILLED WATER COIL PERFORMANCE													REMARKS
#	MFG	MODEL	PRODUCT	LOCATION	AREA SERVED	TOTAL (BTUH)	SENSIBLE (BTUH)	F.V. (ft/min)	A.P.D. (inH20)	W.P.D. (ftH2o)	Rows	EAT (DB)	EAT (WB)	LAT (DB)	LAT (WB)	EWT	LWT	FLOW (GPM)	
AH-1	DAIKIN APPLIED	CAH	Vision	BASEMENT	BASEMENT, 1ST, & 2ND FLR	2196284	1149457	510	1.01	7.54	8	95 °F	78 °F	53 °F	53 °F	42 °F	54 °F	370	

HEATING COIL SCHEDULE

#	MFG	MODEL	PRODUCT	LOCATION	AREA SERVED	STEAM COIL PERFORMANCE										NOTES
						AIRFLOW (CFM)	TOTAL (MBH)	EAT (DB)e	LAT (DB)	DESCRIPTION	ROWS	FPI	APD (IN-WG)	FACE VEL. (FPM)	FLOW (#/HR)	PRESSURE (PSI)	
AH-1	DAIKIN APPLIED	CAH	Vision	BASEMENT	BASEMENT, 1ST, & 2ND FLR	25000	1837615.0	22 °F	89 °F	5JA1001C	1	10	0.18	521	2028	60	

AIR HANDLER SCHEDULE

IDENTITY						SUPPLY FAN										ELECTRICAL		PRE-FILTER				FINAL FILTER					UNIT SIZE (IN)			OPER. WT (LB)	REMARKS
#	MFG	MODEL	PRODUCT	LOCATION	AREA SERVED	TSP (IN-WG)	ESP (IN-WG)	TYPE	FAN RPM	DRIVE	MOTOR						Voltage	Phase	TYPE	FACE AREA (SF)	SIZE	APD	TYPE	FACE AREA (SF)	SIZE	APD (IN-WG)	MERV	L	W	H		
											MCA	BHP	HP	VFD	DISCONN																
AH-1	DAIKIN APPLIED	CAH	Vision	BASEMENT	BASEMENT, 1ST, & 2ND FLR	5.95	4.00	EBM450-RPII	11876	Direct	50	5.8	6.3	Yes	No	460 V	3	MERV 8	45.5	2"	0.63	AmAir (MERV 13)	45.5	4.00	0.63	90	218	112	86	7611	

NOTES:
1. UNIT MOUNTED VFD
2. (6) SUPPLY FAN ARRAY

HVAC LEGEND

ABBREVIATIONS

A/C	Air Conditioning	MIN	Minimum
ABV	Above	N/A	Not Applicable
AC-#	Air Handler - No. #	NIC	Not in Contract
BHP	Brake Horsepower	NTS	Not to Scale
CFM	Cubic Feet Per Minute	OA	Outside Air
DD	Duct Smoke Detector	OBD	Opposed Blade Damper
DB	Dry Bulb Temperature	OD	Outside Damper
DN	Duct Down	PD	Pressure Drop
EAT	Entering Air Temperature	RA	Return Air
ELEC	Electric or Electrical	RET	Return
EWB	Entering Air Wet Bulb	RH	Relative Humidity
EXH	Exhaust	SA	Supply Air
FD	Fire Damper	SHT	Sheet
FL	Floor	SP	Static Pressure
HP	Horsepower	SPEC	Specifications
KW	Kilowatts	SPL	Supply
LAT	Leaving Air Temperature	T	Thermostat
LWB	Leaving Air Wet Bulb	TEMP	Temperature
MAX	Maximum	TSTAT	Thermostat
MBH	Thousand BTU/Hr (thousands)	TYP	Typical
		UP	Duct Up
		WB	Wet Bulb Temperature

GENERAL MECHANICAL NOTES

1. DO NOT SCALE DRAWINGS; SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
2. EXTEND ALL DRAIN LINES TO NEAREST FLOOR DRAIN OR AS INDICATED. ROUTE TO AVOID INTERFERENCE WITHEXTEND 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.
3. ALL PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS, ROOFS AND PARTITIONS EXCEPT WHERE PROHIBITED BY FIRE CODES.
4. LOCATE ALL THERMOSTATS, HUMIDISTATS AND SWITCHES 4'-0" ABOVE FINISH FLOOR; ALIGN WITH LIGHT SWITCHES.
5. 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 EING PLACED ON THE EQUIPMENT. SUPPORT DETAILS SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER.
6. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE.
7. CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY MARKED.
8. PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, AND OTHER EQUIPMENT AND APPURTENANCES.
9. ALL DUCT IS GALVANIZED SHEET METAL EXCEPT AS NOTED.
10. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
11. PROVIDE DIELECTRIC FITTINGS AT ALL LOCATIONS WHERE DISSIMILAR METALS ARE JOINED IN PIPING AND DUCT SYSTEMS
12. UPON ACTIVATION OF FIRE ALARM OR SPRINKLER SYSTEMS, ALL AIR HANDLERS SHOULD BE WIRED TO SHUT DOWN
13. ALL MITERED ELBOWS SHALL HAVE TURNING VANES.

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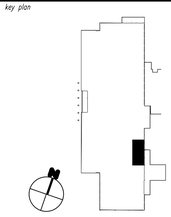


sheet title

HVAC LEGENDS, NOTES, ABBREVIATIONS, CONTROL SCHEMATICS, AND SCHEDULES

sheet number

M7.1

drawn by JDR

checked by JWR

GENERAL NOTES

1. DO NOT SCALE DRAWINGS. LOCATE OUTLETS, EQUIPMENT AND OTHER ELECTRICAL DEVICES AS INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
2. MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE #12 AWG. PROVIDE DEDICATED NEUTRAL FOR EACH MULTI-WIRE BRANCH CIRCUIT IN COMPLIANCE WITH NEC.
3. ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, "ECON" BY ECONOMY, OR FERRAZ SHAWMUT.
4. BRANCH CIRCUIT TO BE 2#12, 12GND, 3/4"C MINIMUM. 20A 120V CIRCUITS LONGER THAN 75' TO BE 2#10, #10GND, 3/4"C MINIMUM FOR VOLTAGE DROP. 20A, 120V CIRCUITS LONGER THAN 150' TO BE 2#8, #8GND, 3/4"C MINIMUM FOR VOLTAGE DROP. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES OR ON DRAWINGS.
5. ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSSES TO OBTAIN MINIMUM NEUTRAL CURRENT.
6. 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.
7. COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN CORRECT LOCATIONS.
8. 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.
9. WHERE NOT INDICATED OTHERWISE, EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER NEC TABLE 250-122.
10. ALL METAL CONDUITS 1" AND LARGER SHALL HAVE A GROUNDING BUSHING BONDING CONDUIT TO ENCLOSURE.
11. AT SUBSTANTIAL COMPLETION CLEAN ALL LIGHT FIXTURES AND CLEAN ALL DEVICES IN THE CONSTRUCTION AREAS. REPLACE DAMAGED DEVICES AND DEVICE PLATES AS NEEDED.
12. VERIFY ALL MECHANICAL EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS WITH MECHANICAL PLANS. IF MECHANICAL EQUIPMENT BEING PROVIDED DOES NOT MATCH DESIGN NOTIFY ENGINEER IMMEDIATELY.
13. CONCEAL ALL CONDUIT AND RACEWAY NOT WITHIN MECHANICAL EQUIPMENT ROOMS. IF CONDITIONS REQUIRE CONDUIT OR RACEWAY TO BE RUN EXPOSED COORDINATE ROUTING WITH ARCHITECT AND PAINT AS REQUIRED BY ARCHITECT.
14. ELECTRICAL WORK SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES, REQUIREMENTS AND ORDINANCES.
15. ALL BACKBOXES SHALL BE MINIMUM 4" SQUARE.
16. ALL EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE WITH INSULATED THROAT.
17. 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.
18. 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.
19. 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.
20. ELECTRICAL WORK SHALL COMPLY WITH LATEST NECA 1 STANDARDS FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION.

MOUNTING HEIGHT SCHEDULE

DEVICES/EQUIPMENT	MOUNTING HEIGHT (AFF)	MEASURED TO:
RECEPTACLES	AS INDICATED ON LEGEND/PLANS	CENTER
TOGGLE SWITCHES	4'-0"	CENTER
WALL DIMMERS	4'-0"	CENTER
MANUAL MOTOR STARTERS	4'-0"	CENTER
OCCUPANCY SENSORS - WALL MOUNTED	4'-0"	CENTER
LIGHTING CONTROL PANEL	6'-6"	TOP
LIGHTING CONTROL STATION	4'-0"	CENTER
JUNCTION BOXES	AS INDICATED ON LEGEND/PLANS	CENTER
MONITORING/CONTROL PANEL	5'-0"	TOP
SURFACE METAL RACEWAYS	AS INDICATED ON LEGEND/PLANS	TOP
PANELBOARDS	6'-6"	TOP
DISCONNECT SWITCHES	5'-0"	TOP
AUTOMATIC TRANSFER SWITCHES	6'-6"	TOP
MANUAL TRANSFER SWITCHES	6'-6"	TOP
CONTROL STATIONS	6'-6"	TOP
TVSS (NON-INTEGRAL)	6'-0" (NTE)	TOP
MAGNETIC MOTOR CONTROLLERS	6'-6"	TOP
LIGHTING CONTACTORS ENCLOSURES	6'-6"	TOP
INDIVIDUAL CKT BREAKERS ENCLOSURES	6'-6"	TOP
EMERGENCY POWER OFF SWITCHES	5'-6"	CENTER
TIME SWITCHES	6'-6"	TOP
TELECOMMUNICATIONS OUTLETS	1'-6"	CENTER
TELECOMMUNICATIONS OUTLETS - OVER COUNTER	6"	CENTER (OVER TOP OF COUNTER)
GROUND FAULT CIRCUIT INTERRUPTER	4'-0"	CENTER
GROUND BUS BARS	2'-0"	CENTER
INTEGRATED COMMUNICATIONS PANELS	6'-0"	TOP
GENERATOR REMOTE ALARM ANNUNCIATOR	5'-0"	TOP
GENERATOR TERMINAL BLOCKS	5'-0"	TOP
BAS TERMINAL BLOCKS	5'-0"	TOP
GENERATOR STOP SWITCH	5'-6"	CENTER
GENERATOR TANK FUEL LEVEL INDICATORS	5'-0"	TOP
UPS REMOTE MONITORING PANEL	5'-0"	TOP
UPS BATTERY MONITORING / CONTROL PANEL	5'-0"	TOP
MAIN SWITCHGEAR BATTERY CHARGER	5'-0"	TOP
RELAY CONTROL PANELS	6'-6"	TOP
FIRE ALARM AUDIO/VISUAL DEVICES (NOTE 3)	6'-8"	BOTTOM
FIRE ALARM VISUAL DEVICES (NOTE 3)	6'-8"	BOTTOM
FIRE ALARM HORNS (NOTE 3)	6'-8"	BOTTOM
FIRE ALARM PULL STATIONS	4'-0"	CENTER
FIRE FIGHTER PHONE JACKS	4'-6"	CENTER
FIRE FIGHTER MASTER PHONE CABINET	4'-6"	CENTER
FIRE ALARM SMOKE DETECTORS - WALL MOUNTED	6"	FROM CEILING
FIRE ALARM BEAM SMOKE DETECTORS	WITHIN 3'-0"	FROM CEILING
FIRE ALARM CONTROL PANEL	6'-0"	TOP
FIRE ALARM ANNUNCIATORS	6'-0"	TOP
FIRE ALARM GRAPHIC ANNUNCIATOR	6'-0"	TOP
FIRE PUMP CONTROL PANEL	6'-6"	TOP
SMOKE EXHAUST PANEL	6'-0"	TOP
REMOTE DUCT SMOKE DETECTOR STATUS INDICATOR	4'-6"	CENTER
FIRE ALARM BELL	8'-0"	CENTER

MOUNTING HEIGHT SCHEDULE NOTES:

1. USE ABOVE INDICATED MOUNTING HEIGHTS UNLESS INDICATED OTHER WISE ON DRAWINGS OR SPECIFICATIONS.
2. COORDINATE MOUNTING HEIGHTS WITH FIELD CONDITIONS, OTHER TRADES, AND RELATED EQUIPMENT.
3. MOUNT IN ACCORDANCE WITH NFPA 72. REDUCE MOUNTING HEIGHTS OF FIRE ALARM VISUAL AND AUDIO/VISUAL ALARMS WHERE REQUIRED TO MAINTAIN 6" MINIMUM SPACING FROM CEILING.

POWER DISTRIBUTION / EQUIPMENT LEGEND

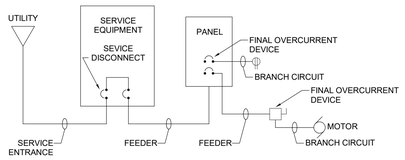
SYMBOLS	DESCRIPTION
PP1	FLOOR OR SURFACE MOUNTED MAIN PROTECTIVE DEVICE PANELBOARD. TEXT DENOTES NAME, REFER TO DRAWINGS FOR LOCATION. SEE POWER RISER DIAGRAM AND PANEL SCHEDULES. WHERE CONCRETE PAD SHOWN, PROVIDE 2" THICK CONCRETE PAD, 4" OFFSET FROM ENCLOSURE FRONT AND SIDES, 4" OFFSET FROM ENCLOSURE BACK.
PP2	FLOOR OR SURFACE MOUNTED MAIN PLUG ONLY PANELBOARD. TEXT DENOTES NAME, REFER TO DRAWINGS FOR LOCATION. SEE POWER RISER DIAGRAM AND PANEL SCHEDULES.
	HEAVY DUTY DISCONNECT SWITCH.
J	CEILING MOUNTED JUNCTION BOX. MINIMUM 4" SQUARE WITH APPROPRIATE REDUCING RING FOR DEVICE BEING INSTALLED. UNLESS NOTED OTHERWISE, JUNCTION BOX IS FLUSH MOUNTED WITH COVER PLATE, SIZE IAW NEC AND EQPT MFR INSTRUCTIONS.
J	WALL MOUNTED JUNCTION BOX. MINIMUM 4" SQUARE WITH APPROPRIATE REDUCING RING FOR DEVICE BEING INSTALLED. COORDINATE MOUNTING HEIGHT WITH EQUIPMENT BEING SERVED OR AS INDICATED ON PLANS. UNLESS NOTED OTHERWISE, JUNCTION BOX IS FLUSH MOUNTED WITH COVER PLATE, SIZE IAW NEC AND EQPT MFR INSTRUCTIONS.
HW	HARDWIRED EQUIPMENT CONNECTION, COORDINATE EXACT LOCATION WITH EQUIPMENT SERVED.
	COMBINATION STARTER DISCONNECT / SAFETY SWITCH OR VARIABLE FREQUENCY DRIVE.
	MOTOR STARTER.

DESIGNATION	DEVICE DESIGNATION
*	MOUNTING HEIGHT AND/OR MOUNTING TO BE COORDINATED WITH WORK AND EQUIPMENT AT JUNCTION BOX LOCATION PROVIDED UNDER DIVISION 26 AND ALL OTHER DIVISIONS.
C	MOUNTING ABOVE CEILING.
S	SURFACE MOUNTED.

FIRE ALARM DEVICES

SYMBOLS	DEVICE DESCRIPTION
(S)D	PHOTOELECTRIC DUCT SMOKE DETECTOR WITH SAMPLING TUBE. FURNISHED AND WIRED BY FIRE ALARM CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. SEE MECHANICAL DRAWINGS FOR EXACT QUANTITY AND LOCATIONS. INSTALLED ON RETURN OR RETURN AND SUPPLY AS REQUIRED. PROVIDE WEATHERPROOF HOUSING FOR OUTDOOR UNITS.
FACP	FIRE ALARM CONTROL PANEL.

RACEWAY MATERIAL SCHEDULE



RACEWAY MATERIALS:

FEEDERS: EMT, IMC, GRS

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

BRANCH CIRCUITS EXPOSED WITHIN MECHANICAL EQUIPMENT ROOMS: EMT, IMC, GRS

FINAL CONNECTIONS TO MECHANICAL EQUIPMENT (3' MAX): FLEXIBLE WATERTIGHT CONDUIT IN DAMP AND WET LOCATIONS, FLEXIBLE METAL CONDUIT IN DRY LOCATIONS.

ABBREVIATIONS

A, AMP	AMPERE
AA	AMBIENT AIR
ABBREV	ABBREVIATION
ABV	ABOVE
AC	ALTERNATING CURRENT
ACT	ABOVE COUNTER TOP
AF	AMP FRAME, CIRCUIT BREAKER FRAME AND TRIP DEVICE SENSOR SIZE (AMPS)
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AM	AMPERE METER
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AS	AMMETER SWITCH
ASYM	ASYMMETRICAL
AT	AMP TRIP, TRIP DEVICE RATING PLUG SIZE (AMPS)
ATC	AIR TERMINAL CHAMBER
ATS	AUTOMATIC TRANSFER SWITCH, TRIP DEVICE LONG TIME PICKUP SETTING (AMPS)
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BATT	BATTERY, BATTERIES
BIAX	BIAXIAL
BIL	BASIC IMPULSE LEVEL
BKR	BREAKER
BLDG	BUILDING
B. O. D.	BOTTOM OF DUCT
B. O. T.	BOTTOM OF TRAY
°C	CELSIUS
cm	CENTIMETER
C, CND	CONDUIT
CAT. NO, CAT	CATALOG
CATV	CABLE TELEVISION
CBM	CERTIFIED BALLAST MANUFACTURER
CCTV	CLOSED CIRCUIT TELEVISION CAMERA
CEG	COMMON EQUIPMENT GROUND
CFM	CUBIC FEET PER MINUTE
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CLO	CLOSET
COMPT	COMPARTMENT
CONT	CONTINUOUS
CPT	CONTROL POWER TRANSFORMER
CPU	CENTRAL PROCESSING UNIT
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CRI	COLOR RENDERING INDEX
CS	CONTROL SWITCH
CSA	CANADIAN STANDARDS ASSOCIATION
CSCCN	CENTRAL SCIENTIFIC COMMUNICATIONS NETWORK
CT	CURRENT TRANSFORMER, CABLE TRAY
CU	COPPER, COEFFICIENT OF UTILIZATION
CY	CYCLE(S)
D	DEPTH, DEEP
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DESIG	DESIGNATION
DIA	DIAMETER
DISC	DISCONNECT
DIST, DISTRIB	DISTRIBUTION
DIV	DIVISION
DS, DSW	DISCONNECT SWITCH
DWG(S)	DRAWING(S)
EC	ELECTRICAL CONTRACTOR, DIVISION 26 (DIV 26)
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRICAL/ELECTRIC
EL. ELEV	ELEVATION
EMER	EMERGENCY
EMH	EXISTING MANHOLE
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EO	ELECTRICALLY OPERATED
EPP	EXISTING POWER POLE
EPR	ETHYLENE-PROPYLENE RUBBER
EQPT	EQUIPMENT
E.T.	ELECTRONIC TRIP
ETC	ETCETERA
ETL	ELECTRICAL TESTING LABORATORIES
ES	ENERGY SAVING
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXST	EXISTING, EXHAUST
F	FAHRENHEIT
FA	FORCED AIR, FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS, FURNISHED BY OWNER
FC	FLEXIBLE CONDUIT
FCU	FAN COIL UNIT
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FL	FOOT LAMBERTS
FLUOR	FLUORESCENT
FREQ	FREQUENCY
FRP	FIBERGLASS-REINFORCED POLYESTER
FT	FOOT
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWE	FURNISHED WITH EQUIPMENT, INDICATES ITEM IS FURNISHED WITH EQUIPMENT SUPPLIED UNDER OTHER DIVISIONS, BUT INSTALLED UNDER DIVISION 26.

ABBREVIATIONS

g	GRAM
G, GND	GROUND
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR, DIVISION 00 THROUGH 14
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF	GROUND FAULT CIRCUIT INTERRUPTER
GFE	DENOTES GOVERNMENT FURNISHED EQUIPMENT, CONTRACTOR INSTALLED
GFCI	GROUND FAULT EQUIPMENT PROTECTIVE DEVICE
GFEPD	GROUND FAULT EQUIPMENT PROTECTIVE DEVICE
GFP	GROUND FAULT PROTECTION
GP	GENERAL PURPOSE
GRS	GALVANIZED RIGID STEEL CONDUIT
H	HEIGHT
HALOG	HALOGEN
HE	HIGH EXPOSURE
HID	HIGH INTENSITY DISCHARGE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HRG	HIGH RESISTANCE GROUND
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HZ	HERTZ
IAW	IN ACCORDANCE WITH
ICEA	INSULATED CABLE ENGINEERS ASSOCIATION
IEC	INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IDS	INTRUSION DETECTION SYSTEM
IESCR	INTEGRATED EQUIPMENT SHORT CIRCUIT RATING
IESNA, IES	ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA
IG	DEVICE SHALL HAVE ISOLATED GROUND. SEE SPECIFICATIONS
IMC	INTERMEDIATE METAL CONDUIT
INC, INCAND	INCANDESCENT
INST	INSTRUCTIONS, INSTRUMENT/INSTRUMENTATION
INTER	INTERMEDIATE
JB OR J-BOX	JUNCTION BOX
°K	DEGREES KELVIN
K, KCMIL	ONE THOUSAND CIRCULAR MILS
KA	KILO-AMPERES
KG	KILO-GRAM
KM	KILO-METER
KV	KILO-VOLTS
KVA	KILO-VOLT AMPERES
KVAC	KILO-VOLT AMPERES CONNECTED
KVAD	KILO-VOLT AMPERES DEMAND
KVAR	KILO-VOLT AMPERES REACTIVE
KW	KILOWATT
KWD	KILOWATT DEMAND
L	LUMEN, LENGTH
LA	LIGHTNING ARRESTER
LAN	LOCAL AREA NETWORK
LB(S)	POUND(S)
LED(S)	LIGHT EMITTING DIODE(S)
LRG	LOW RESISTANCE GROUND
LSGM	LONG-TIME/SHORT-TIME TRIP
LSI	LONG-TIME/SHORT-TIME/INSTANTANEOUS TRIP
LSIM	LONG-TIME/SHORT-TIME/INSTANTANEOUS TRIP AND METERING
LSIG	LONG-TIME/SHORT-TIME/INSTANTANEOUS/GROUND FAULT TRIP
LSIGM	LONG-TIME/SHORT-TIME/INSTANTANEOUS/GROUND FAULT TRIP AND METERING
LT	LIQUID TIGHT
LTG	LIGHTING
LTS	LIGHTS
LPF	LOW POWER FACTOR
m	METER
mm	MILLIMETER
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR, DIVISION 23 (DIV 23)
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MEZZ	MEZZANINE
MRF	MANUFACTURER
M/G	MOTOR/GENERATOR
MH	MOUNTING HEIGHT, MAN HOLE
MHL	METAL HALIDE LAMP
MI	MINERAL INSULATED
MIN	MINIMUM
MIP	MEDICAL ISOLATION PANEL
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MO	MECHANICALLY OPERATED
MP	MOTOR PROTECTOR
MS	MASTER SUBSTATION
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTTOE	MOUNTED TO TOP OF EQUIPMENT
MV	MEDIUM VOLTAGE
N. NEUT	NEUTRAL
N/A	NOT APPLICABLE
N. C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NMC	NONMETALLIC-SHEATHED CABLE
N. O.	NORMALLY OPEN

ABBREVIATIONS

NO.	NUMBER
NOS	NUMBERS
NPF	NORMAL POWER FACTOR
NPT	NATIONAL PIPE THREAD
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
OPT	OPTIONAL
O.C.	ON CENTER
OFE	OWNER FURNISHED EQUIPMENT, CONTRACTOR INSTALLED
P	POLE
PB	PRIVATE BRANCH EXCHANGE
PCC	POINT OF COMMON COUPLING
PDU	POWER DISTRIBUTION UNIT
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMCS	POWER MONITORING AND CONTROL SYSTEM
PBRD, PNL	PANEL
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RECP(S)	RECEPTACLE(S)
REQMTS	REQUIREMENTS
R	RESISTANCE
%R	PERCENT RESISTANCE
RCR	ROOM CAVITY RATIO
RI	RECTIFIER/INVERTER
REQD	REQUIRED
RFI	RADIO FREQUENCY INTERFERENCE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT MEAN SQUARE
RVAT	REDUCED VOLTAGE AUTOTRANSFORMER
SCHED	SCHEDULE
SE	SERVICE ENTRANCE
SECT	SECTION
SHLD	SHIELDED, SHIELD
SKVA	STARTING KILO-VOLT AMPERES
S/MH	SPACING TO MOUNTING HEIGHT RATIO
SM	SOLID NEUTRAL
SMR	SURFACE METAL RACEWAY
SN	SHARED NEUTRAL
SQ	SQUARE
SS	STAINLESS STEEL
SSBJ	SUPPLY-SIDE BONDING JUMPER
SSL	SOLID STATE LIGHT
SSM	SOLID STATE METERING
SST	SOLID STATE TRIP
STA	STATION
STP	SHIELDED TWISTED PAIR
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
T, TX	TRANSFORMER
T & B	TOP AND BOTTOM
TEL	TELEPHONE
TEL CAB	TELEPHONE CABINET
TP	TRANSFORMER PROTECTION
TYP	TYPICAL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UDS	UNITIZED DISTRIBUTION SUBSTATION
UG, UGND	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS' LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
UV	ULTRAVIOLET
V	VOLT(S)
VAC	VOLTS ALTERNATING CURRENT
VAR	VOLT AMPERE REACTIVE
VDC	VOLTS DIRECT CURRENT
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
VPE	VACUUM PRESSURE ENCAPSULATED
VPI	VACUUM PRESSURE IMPREGNATED
VS	VOLTMETER SWITCH
VSD	VARIABLE SPEED DRIVE
W	WATT(S), WIRE, WIDTH
WC	WATER COOLER
WG	WATER GAGE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
X	REACTANCE
%X	PERCENT REACTANCE
XFMR	TRANSFORMER
XLP	CROSS-LINK POLYETHYLENE INSULATION
Z	IMPEDANCE
%Z	PERCENT IMPEDANCE
1/C	SINGLE CONDUCTOR CABLE
3/C	THREE CONDUCTOR CABLE
SPST	SINGLE POLE-SINGLE THROW
DPST	DOUBLE POLE-SINGLE THROW
3PST	THREE POLE-SINGLE THROW
SPDT	SINGLE POLE-DOUBLE THROW
DPDT	DOUBLE POLE-DOUBLE THROW
3PDT	THREE POLE-DOUBLE THROW

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UNIVERSITY OF SOUTH CAROLINA

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issued for

ISSUED FOR CONSTRUCTION

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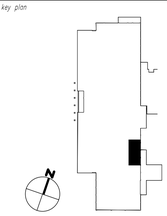
number	item	date

key plan



sheet title

ELECTRICAL NOTES, SYMBOLS, SCHEDULES, AND ABBREVIATIONS

sheet number

E0.0

drawn by C.SE

checked by RMI

EXSTING MCC FRONT - GE 7700 600A MOTOR CONTROL CENTER

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6
MAIN BREAKER	SPARE	SPARE	SPARE	SPARE	SPARE
	SPARE	SPARE	CHILLED WATER PUMP	CHILLED WATER PUMP	SPARE
	SPARE	SPARE			AH-1

EXSTING MCC BACK - GE 7700 600A MOTOR CONTROL CENTER

SECTION 1	SECTION 2	SECTION 3
AIR COMPRESSOR	AH-3	SPARE
PROVISION		SPARE
PROVISION	SPARE	
SPARE	SPARE	
SPARE	DOMESTIC WATER PUMP 1	
PROVISION	DOMESTIC WATER PUMP 2	

EXISTING MCC DETAIL

NO SCALE

EXSTING SERVICE ENTRY SWITCHGEAR PRIMARY SECTION - GE AKD-5 SWITCHGEAR

WIRING GUTTER	SECTION 4	SECTION 3	SECTION 2	SECTION 1	WIRING GUTTER
	EXISTING CIRCUIT	EXISTING CIRCUIT	EXISTING CIRCUIT	METERING COMPARTMENT	AUXILLIARY POWER
	EXISTING CIRCUIT	EXISTING CIRCUIT	EXISTING CIRCUIT NOTE 1	SERVICE ENTRY BREAKER 1/4	
	EXISTING CIRCUIT	EXISTING CIRCUIT	EXISTING CIRCUIT		
		EXISTING CIRCUIT	EXISTING CIRCUIT		

EXISTING SWITCHGEAR PRIMARY SECTION DETAIL

NO SCALE

NOTES TO EXISTING SWITCHGEAR PRIMARY SECTION DETAIL:

1. EXISTING DISTRIBUTION BREAKER PROVIDING SERVICE TO EXISTING MCC. RE-USE EXISTING DBREAKER TO PROVIDE SERVICE TO NEW MDB AS NOTED IN ELECTRICAL PHASE 3 PLANS.

Power Panelboard: MDB

Location: MECHANICAL ROOM 102
Supply From:
Mounting: Surface
Enclosure: Type 3R
Conduit Entry: Top

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 100,000 A
Mains Type: MCB
MCB Frame Size: 600 A
MCB Trip Rating: 500 A
BUS Rating (Amps): 600

CKT	BKR ACC.	Circuit Description	Circuit Size	Trip	Poles	A	B	C
1,2,3		CHILLED WATER PUMP #1 (CHWP-1)	3#4,#8GND,1-1/4"C	80 A	3	18013 VA	18013 VA	18013 VA
4,5,6		CHILLED WATER PUMP #2 (CHWP-2)	3#4,#8GND,1-1/4"C	80 A	3	18013 VA	18013 VA	18013 VA
7,8,9		AIR HANDLER #1 (AH-1)	3#8,#10GND,1"C	50 A	3	13856 VA	13856 VA	13856 VA
10,11,12		AIR HANDLER #3 (AH-1)	3#12, #12GND,3/4"C	20 A	3	3810 VA	3810 VA	3810 VA
13,14,15		DOMESTIC BOOSTER WATER PUMP #1 (DBWP-1)	3#12, #12GND,3/4"C	15 A	3	2633 VA	2633 VA	2633 VA
16,17,18		DOMESTIC BOOSTER WATER PUMP #2 (DBWP-2)	3#12, #12GND,3/4"C	15 A	3	0 VA	0 VA	0 VA
19,20,21		AIR COMPRESSOR (ACM-1 AND ACM-2)	3#10,#10GND,3/4"C	30 A	3	5265 VA	5265 VA	5265 VA
22,23,24		015 KVA 208Y120 - 150 C Rise - Eaton, 0 V/480 V, Three...		20 A	3	500 VA	0 VA	0 VA
25								
26								
27								
28	--	SPACE	--	--	--	0 VA		
29	--	SPACE	--	--	--		0 VA	
30	--	SPACE	--	--	--			0 VA
31	--	SPACE	--	--	--	0 VA		
32	--	SPACE	--	--	--		0 VA	
33	--	SPACE	--	--	--			0 VA
34	--	SPACE	--	--	--	0 VA		
35	--	SPACE	--	--	--		0 VA	
36	--	SPACE	--	--	--			0 VA
					Total Load:	62090 VA	61590 VA	61590 VA

Notes:

Panelboard: P1

Location: MECHANICAL ROOM 102
Supply From: TP1
Mounting: Surface
Enclosure: Type 3R
Conduit Entry: Bottom

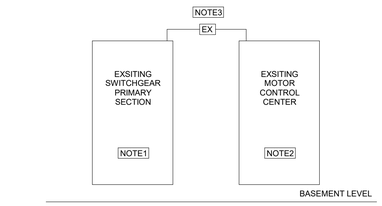
Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10 KAIC
Mains Type: MCB
MCB Frame Size: 100 A
MCB Trip Rating: 50 A
Bus Rating (Amps): 100 A

CKT	Breaker Acc.	Circuit Description	Circuit Size	Trip	Poles	A		B		C		Poles	Trip	Circuit Size	Circuit Description	Breaker Acc.	CKT
1		AH-1 CONTROLS POWER		20 A	1	500 VA	0 VA					1	20 A	--	SPARE	--	2
3	--	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	--	4
5	--	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	--	6
7	--	SPARE	--	20 A	1	0 VA	0 VA					1	20 A	--	SPARE	--	8
9	--	SPARE	--	20 A	1			0 VA	0 VA			1	20 A	--	SPARE	--	10
11	--	SPARE	--	20 A	1					0 VA	0 VA	1	20 A	--	SPARE	--	12
					Total Load:	500 VA		0 VA		0 VA							

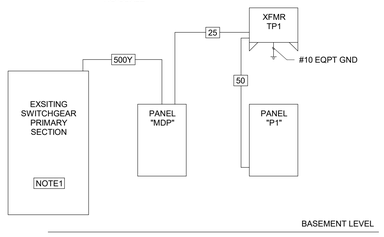
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	500 VA	100.00%	500 VA		
				Total Conn. Load:	500 VA
				Total Est. Demand:	500 VA
				Total Conn.:	1 A
				Total Est. Demand:	1 A

Notes:



EXISTING POWER RISER DIAGRAM

NO SCALE



RENOVATED POWER RISER DIAGRAM

NO SCALE

POWER RISER DIAGRAM GENERAL NOTES

EC SHALL COORDINATE WITH POWER SUPPLIER (UTILITY) AND COMPLY WILL ALL REQUIREMENTS FOR SERVICE AND METERING.

THIS INCLUDES PROVISING ALL LABOR AND MATERIALS NECESSARY TO COMPLY WITH UTILITY REQUIRMENTS AND COORDINATION WITH THE UTILITY TO DETERMINE SERVICE POINT LOCATION, TYPE, AND METERING REQUIREMENTS.

ELECTRIC UTILITY: SCE&G

MEASURE RESISTANCE TO GROUND PRIOR TO ENERGIZATION OF EQUIPMENT. IF RESISTANCE TO GROUND IS GREATER THAN 10 OHMS OR AS REQUIRED BY SPD EQUIPMENT MANUFACTURER PROVIDE ALL MATERIALS AND WORK REQUIRED TO REDUCE RESISTANCE TO LESS THAN 10 OHMS AT NO INCREASED COST TO OWNER.

FAULT CURRENT (AIC) RATINGS FOR PANELBAORDS ARE BASED ON 15,677 kA AVAIABLE FAULT CURRENT AT UTILITY LUGS. VERIFY RATINGS WITH UTILITY PRIOR TO ORDERING. SHOULD FAULT CURRENT AVIALBE EXCEED THAT LISTED ABOVE, NOTIFY ENGINEER IMMEDIATELY.

POWER RISER DIAGRAM LEGEND

500Y	2 RUNS OF 4#250 KCMIL, 3"C EACH.
25	3#10, 1#10GND; 3/4"C.
50	4#8, 1#10GND; 1"C.
EX	EXISTING FEEDER.
NOTE1	RE-USED EXISTING DISTRIBUTION BREAKER TO PROVIDE SERVICE TO NEW MDB AS NOTED IN ELECTRICAL PHASE 3 PLANS.
NOTE2	DEMOLISH AND REMOVE EXISTING MCC AS NOTED IN ELECTRICAL PHASE 4 PLANS.
NOTE3	DEMOLISH AND REMOVE EXISTING FEEDER AS NOTED IN ELECTRICAL PHASE 4 PLANS.

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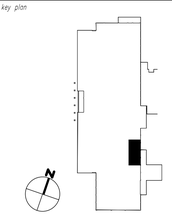


sheet title
POWER RISER DIAGRAM, DETAILS, AND PANEL SCHEDULES

sheet number
E0.1

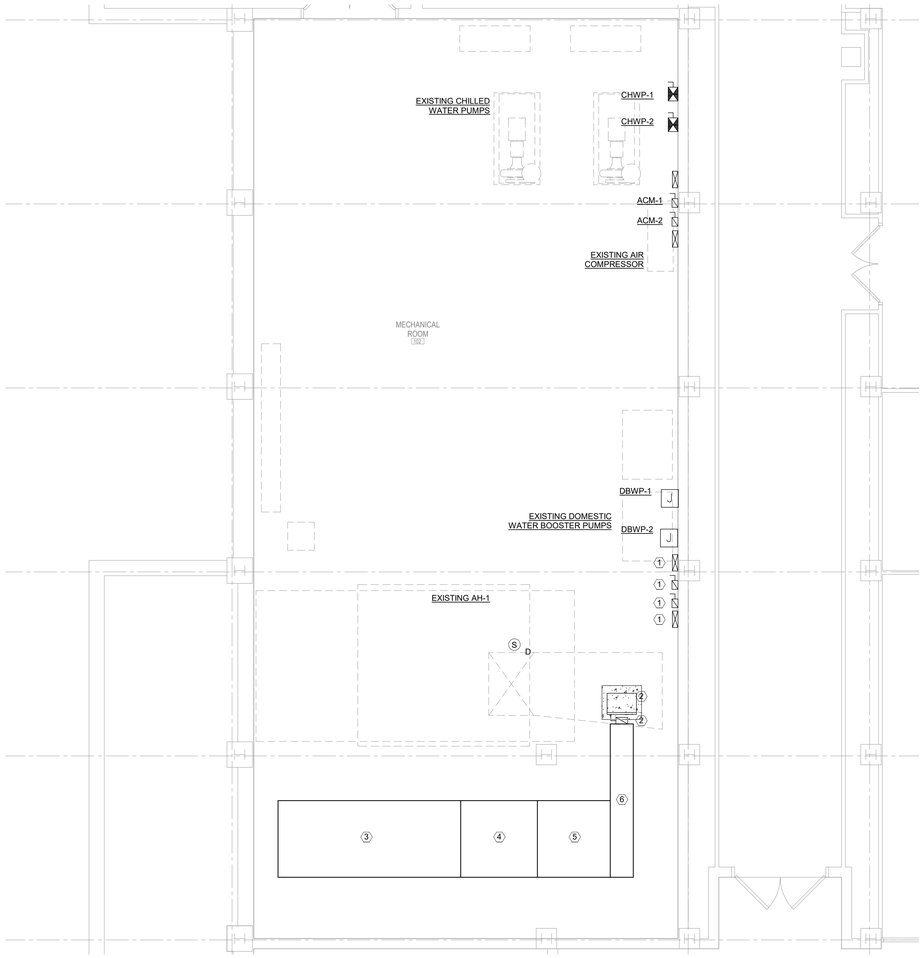
drawn by C SE
checked by RMI

GENERAL NOTES PHASE 1:

ALL EXISTING ELECTRICAL DEVICES AND FIXTURES TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.

PHASE 1 NOTES KEYED TO PLANS: ⬡

1. DEMOLISH AND REMOVE EXISTING DISCONNECT SWITCHES, MOTOR STARTERES, CONDUIT AND WIRING (LINE AND LOAD), INCLUDING CONTROL WIRING, FEEDING EQUIPMENT THAT HAS BEEN REMOVED, BACK TO SOURCE PANEL OR JUNCTION BOX SERVING LOADS TO REMAIN.
2. DEMOLISH AND REMOVE EXISTING DISCONNECT SWITCH, TRANSFORMER, CONDUIT AND WIRING (LINE AND LOAD), INCLUDING CONTROL WIRING, FEEDING EQUIPMENT THAT HAS BEEN REMOVED, BACK TO SOURCE PANEL OR JUNCTION BOX SERVING LOADS TO REMAIN.
3. EXISTING SWITCHGEAR PRIMARY SECTION.
4. EXISTING SWITCHGEAR TRANSFORMER.
5. EXISTING SWITCHGEAR SECONDARY SECTION.
6. EXISTING MOTOR CONTROL CENTER.



GENERAL DEMOLITION NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND REMOVAL OF ANY ELECTRICAL DEVICES OR SYSTEMS AS REQUIRED FOR ELECTRICAL AND 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.

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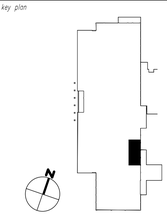


sheet title

ELECTRICAL PHASE 1 BASEMENT PLAN

sheet number

E3.1

drawn by C.SE

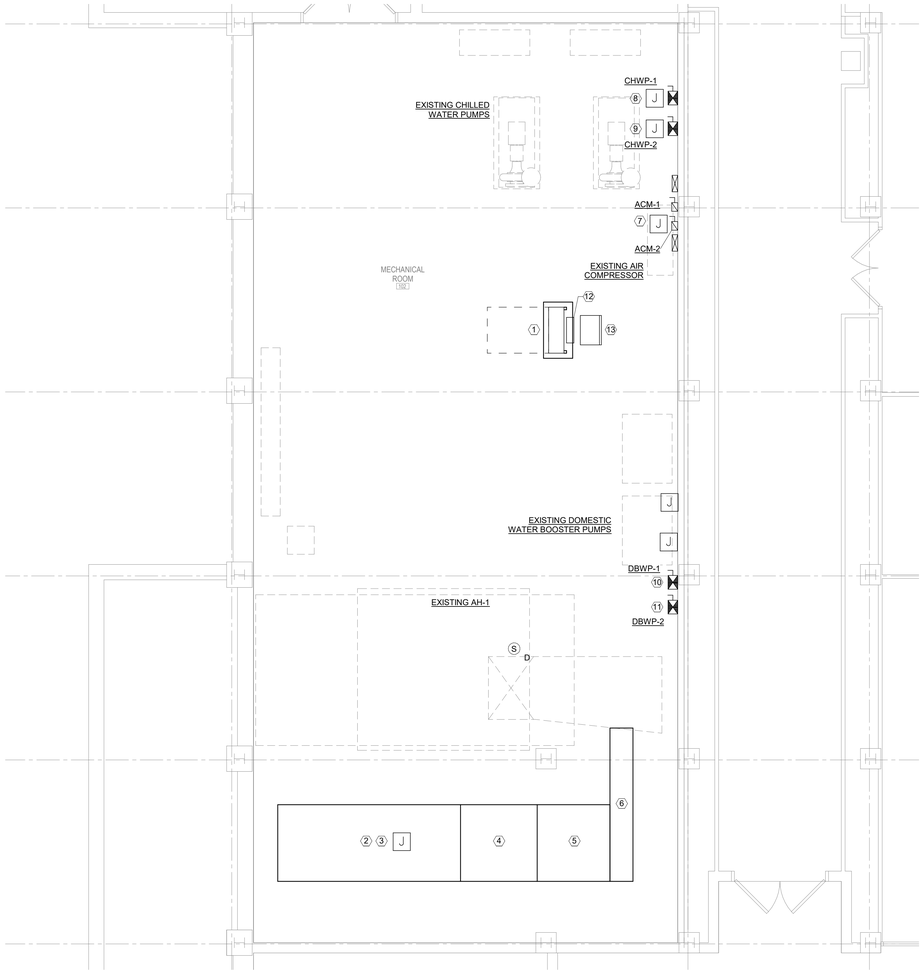
checked by RMI

GENERAL NOTES PHASE 2:

ALL EXISTING ELECTRICAL DEVICES AND FIXTURES TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.

PHASE 2 NOTES KEYED TO PLANS:

1. PROVIDE AND INSTALL NEW DISTRIBUTION PANELBOARD MDP. PROVIDE 4" CONCRETE EQUIPMENT PAD AND UNISTRUT MOUNTING RACK. SEE PANEL SCHEDULES FOR ADDITIONAL DETAILS.
2. PROVIDE AND INSTALL NEW JUNCTION BOX DIRECTLY ABOVE SWICHGEAR PRIMARY SECTION. INSTALL CIRCUIT BETWEEN NEW JUNCTION BOX AND PANEL MDP PER POWER RISER DIAGRAM. PROVIDE 20' OF CONDUCTORS COILED AT NEW JUNCTION BOX TO CONNECT TO EXISTING DISTIBUTION SWITCH IN THE SWITCHGEAR PRIMARY SECTION.
3. EXISTING SWITCHGEAR PRIMARY SECTION.
4. EXISTING SWITCHGEAR TRANSFORMER.
5. EXISTING SWITCHGEAR SECONDARY SECTION.
6. EXISTING MOTOR CONTROL CENTER.
7. PROVIDE NEW CIRCUIT BETWEEN NEW PANEL MDB PER AND A NEW JUNCTION BOX PROVIDED DIRECTLY ABOVE DISCONNECT SWITCH FEEDING ACM-2; SIZE PER PANEL SCHEDULE. PROVIDE 10' OF CONDUCTORS COILED AT NEW JUNCTION BOX TO PROVIDE SERVICE TO DISCONNECT FEEDING ACM-2 IN PREPERATION FOR LOAD TRANSFER IN PHASE THREE.
8. PROVIDE NEW CIRCUIT BETWEEN NEW PANEL MDB PER AND A NEW JUNCTION BOX PROVIDED DIRECTLY BELOW THE VFD FEEDING CHWP-1 SIZE PER PANEL SCHEDULE. PROVIDE 10' OF CONDUCTORS COILED AT NEW JUNCTION BOX TO PROVIDE SERVICE TO VFD SERVING CHWP-1 IN PREPERATION FOR LOAD TRANSFER IN PHASE THREE.
9. PROVIDE NEW CIRCUIT BETWEEN NEW PANEL MDB PER AND A NEW JUNCTION BOX PROVIDED DIRECTLY BELOW THE VFD FEEDING CHWP-2 SIZE PER PANEL SCHEDULE. PROVIDE 10' OF CONDUCTORS COILED AT NEW JUNCTION BOX TO PROVIDE SERVICE TO VFD SERVING CHWP-2 IN PREPERATION FOR LOAD TRANSFER IN PHASE THREE.
10. PROVIDE AND INSTALL NEW COMBINATION MOTOR STARTER DISCONNECT, NEMA SIZE 0, HAND OFF AUTO, WITH RED PILOT LIGHT, WITH A NEMA 3R ENCLOSURE TO FEED EXISTING PUMP DBWP-1. PROVIDE NEW CONTROL WIRING BETWEEN MOTOR STARTER AND CONTROL SOURCE LOCATED ON ROOF, EXISTING CONTROL WIRING SHALL NOT BE DEMOLISHED UNTIL PHASE 3; SIZE NEW CONDUIT AND CONTROL WIRING TO MATCH EXISTING; 2#12AWG, 3/4"C MINIMUM. PROVIDE NEW CIRCUIT BETWEEN MOTOR STARTER DISCONNECT AND NEW PANEL MDB PER PANEL SCHEDULE.
11. PROVIDE AND INSTALL NEW COMBINATION MOTOR STARTER DISCONNECT, NEMA SIZE 0, HAND OFF AUTO, WITH RED PILOT LIGHT, WITH A NEMA 3R ENCLOSURE TO FEED EXISTING PUMP DBWP-2. PROVIDE NEW CONTROL WIRING BETWEEN MOTOR STARTER AND CONTROL SOURCE LOCATED ON ROOF, EXISTING CONTROL WIRING SHALL NOT BE DEMOLISHED UNTIL PHASE 3; SIZE NEW CONDUIT AND CONTROL WIRING TO MATCH EXISTING; 2#12AWG, 3/4"C MINIMUM. PROVIDE NEW CIRCUIT BETWEEN MOTOR STARTER DISCONNECT AND NEW PANEL MDB PER PANEL SCHEDULE.
12. PROVIDE AND INSTALL NEW 208/120V, 3PH, 4W PANELBOARD P1. MOUNT TO THE BACKSIDE OF UNISTRUT RACK FOR PANEL MDP. SEE PANEL SCHEDULES FOR MORE INFORMATION.
13. PROVIDE AND INSTALL NEW 15KVA 480V-208/120V DELTA WYE TRANSFORMER FOR PANEL P1. CEILING MOUNT TRANSFORMER FROM FLOOR ABOVE. SEE DETAIL THIS DRAWING FOR MORE INFORMATION.



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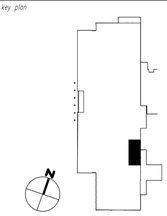

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ELECTRICAL PHASE 2 BASEMENT PLAN

sheet number

E3.2

drawn by C.SE

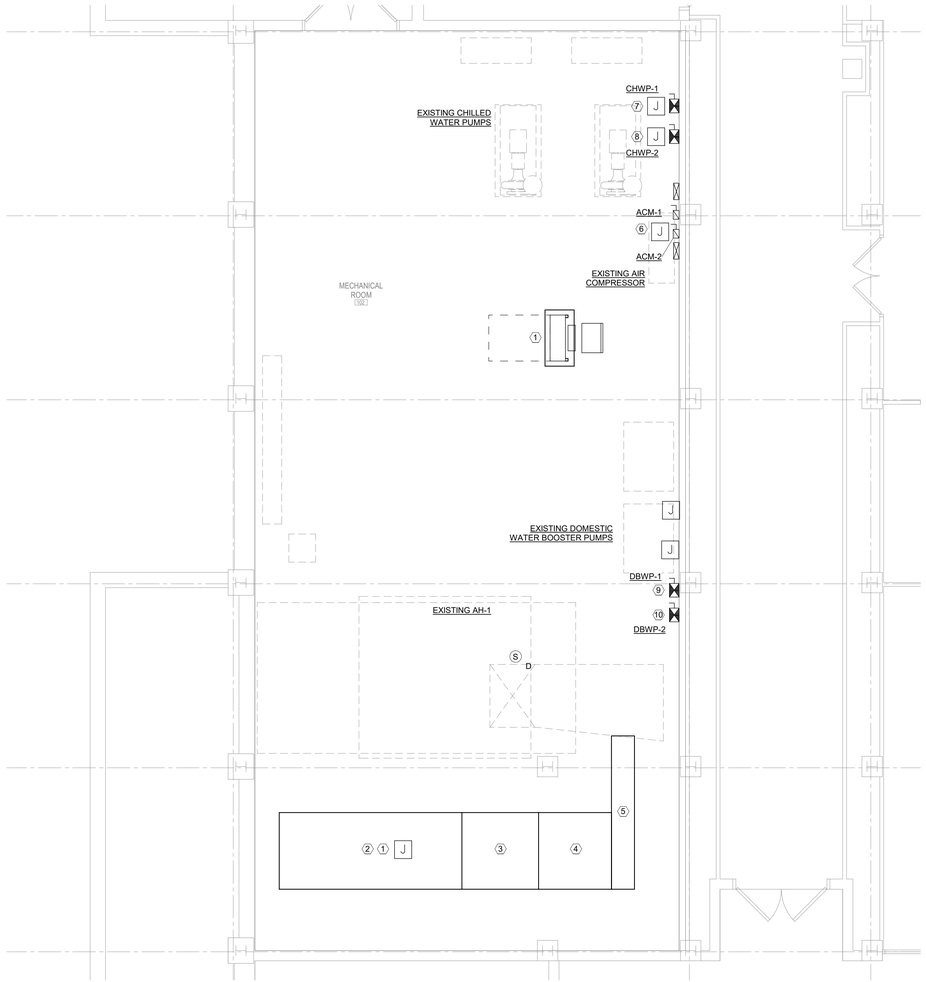
checked by RMI

GENERAL NOTES PHASE 3:

ALL EXISTING ELECTRICAL DEVICES AND FIXTURES TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.

PHASE 3 NOTES KEYED TO PLANS: ⬡

1. TRANSFER SERVICE FROM MCC TO MDP AS FOLLOWS: INSTALL CONDUIT BETWEEN NEW JUNCTION BOX AND SWITCHGEAR PRIMARY SECTION. PULL WIRE FROM JUNCTION BOX TO THE DISTRIBUTION BREAKER FEEDING THE EXISTING MCC. DISCONNECT EXISTING CONDUCTORS FROM THE LOAD TERMINALS OF THE BREAKER AND CONNECT THE NEW CONDUCTORS FEEDING MDB. SEE POWER RISER FOR CIRCUIT SIZE, SEE EXISTING SWITCHGEAR PRIMARY SECTION DETAIL FOR LOCATION OF BREAKER. SEE PHASE 4 PLAN FOR DETAILS REGARDING DEMOLITION OF EXISTING CIRCUIT BETWEEN THE SWITCHGEAR PRIMARY SECTION AND THE EXISTING MCC.
2. EXISTING SWITCHGEAR PRIMARY SECTION.
3. EXISTING SWITCHGEAR TRANSFORMER.
4. EXISTING SWITCHGEAR SECONDARY SECTION.
5. EXISTING MOTOR CONTROL CENTER.
6. TRANSFER LOADS ACM-1 AND ACM-2 FROM MCC TO MDB AS FOLLOWS: INSTALL CONDUIT BETWEEN NEW JUNCTION BOX AND DISCONNECT SWITCH FEEDING ACM-2. PULL WIRE FROM JUNCTION BOX TO DISCONNECT FEEDING ACM-2. DISCONNECT EXISTING CONDUCTORS ON LINE TERMINALS OF DISCONNECT (ACM-2) AND CONNECT NEW CONDUCTORS FED FROM MDB. PULL NEW WIRE FROM DISCONNECT FEEDING ACM-2 THROUGH EXISTING CONDUIT TO DISCONNECT FEEDING ACM-1. DISCONNECT EXISTING CONDUCTORS ON LINE TERMINALS OF DISCONNECT (ACM-1) AND CONNECT NEW CONDUCTORS FED FROM MDB (VIA ACM-2). SEE PANEL SCHEDULE FOR CIRCUIT SIZE. EXISTING CIRCUITS BETWEEN DISCONNECT SWITCHES, MOTOR STARTERS, AND MOTORS SERVING THIS AIR COMPRESSOR ARE TO REMAIN AS IS. SEE PHASE 4 PLANS FOR DETAILS REGARDING DEMOLITION OF FEEDER BETWEEN THESE DISONNECT SWITCHES AND THE EXISTING MCC.
7. TRANSFER LOAD CHWP-1 FROM MCC TO MDB AS FOLLOWS: INSTALL CONDUIT BETWEEN NEW JUNCTION BOX AND VFD FEEDING CHWP-1. PULL WIRE FROM JUNCTION BOX TO VFD. DISCONNECT EXISTING CONDUCTORS ON LINE TERMINALS OF VFD AND CONNECT NEW CONDUCTORS FED FROM MDB. SEE PANEL SCHEDULE FOR CIRCUIT SIZE. EXSTING CIRCUIT BETWEEN THE VFD AND THE MOTOR CHWP-1 TO REMAIN AS IS. SEE PHASE 4 PLANS FOR DETAILS REGARDING DEMOLITION OF FEEDER BETWEEN VFD FEEDING CHWP-1 AND THE EXISTING MCC.
8. TRANSFER LOAD CHWP-2 FROM MCC TO MDB AS FOLLOWS: INSTALL CONDUIT BETWEEN NEW JUNCTION BOX AND VFD FEEDING CHWP-2. PULL WIRE FROM JUNCTION BOX TO VFD. DISCONNECT EXISTING CONDUCTORS ON LINE TERMINALS OF VFD AND CONNECT NEW CONDUCTORS FED FROM MDB. SEE PANEL SCHEDULE FOR CIRCUIT SIZE. EXSTING CIRCUIT BETWEEN THE VFD AND THE MOTOR CHWP-2 TO REMAIN AS IS. SEE PHASE 4 PLANS FOR DETAILS REGARDING DEMOLITION OF FEEDER BETWEEN VFD FEEDING CHWP-1 AND THE EXISTING MCC.
9. TRANSFER LOAD DBWP-1 FROM MCC TO MDB AS FOLLOWS: DISCONNECT PUMP BDWP-1 FROM EXISTING CIRCUIT. INSTALL NEW CIRCUIT BETWEEN MOTOR STARTER DISCONNECT AND DBWP-1. SEE PANEL SCHEDULE FOR CIRCUIT SIZE. SEE PHASE 4 PLANS FOR DETAILS REGARDING DEMOLITION OF EXISTING CIRCUIT BETWEEN DBWP-1 AND THE EXISTING MCC.
10. TRANSFER LOAD DBWP-2 FROM MCC TO MDB AS FOLLOWS: DISCONNECT PUMP BDWP-2 FROM EXISTING CIRCUIT. INSTALL NEW CIRCUIT BETWEEN MOTOR STARTER DISCONNECT AND DBWP-2. SEE PANEL SCHEDULE FOR CIRCUIT SIZE. SEE PHASE 4 PLANS FOR DETAILS REGARDING DEMOLITION OF EXISTING CIRCUIT BETWEEN DBWP-2 AND THE EXISTING MCC.



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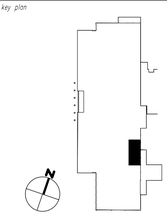


sheet title

ELECTRICAL PHASE 3 BASEMENT PLAN

sheet number

E3.3

drawn by C.SE

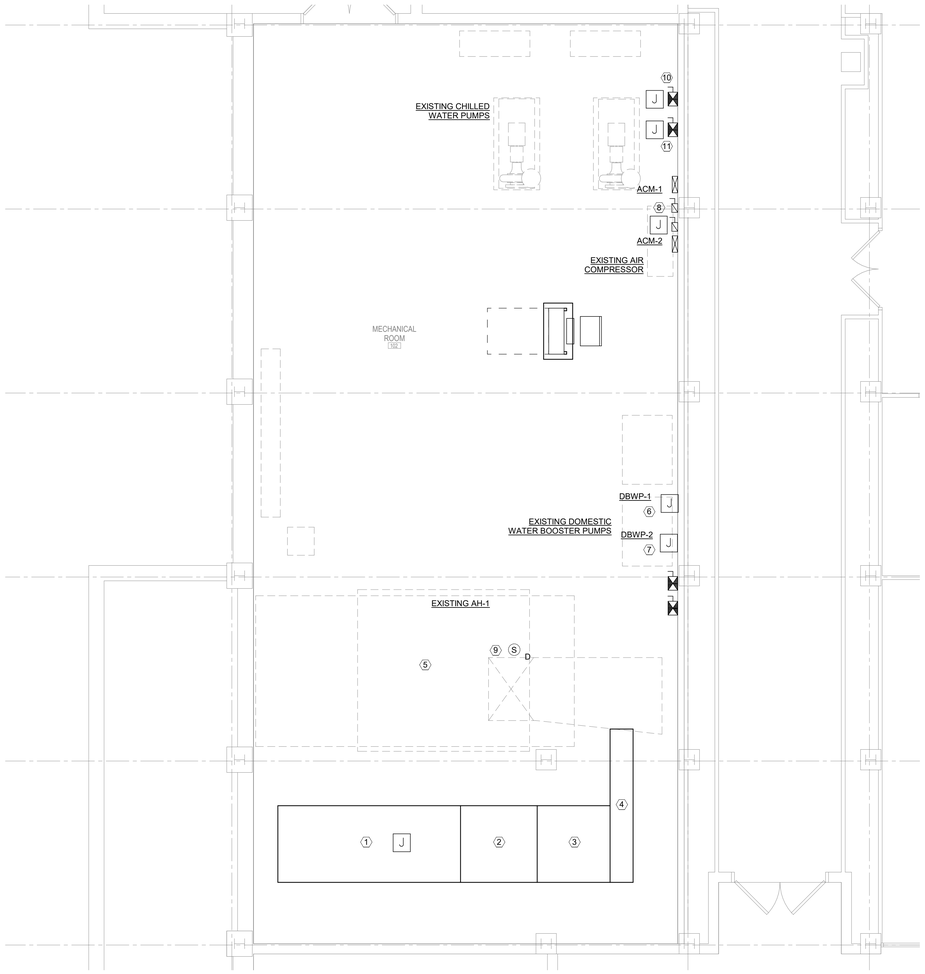
checked by RMI

GENERAL NOTES PHASE 4:

ALL EXISTING ELECTRICAL DEVICES AND FIXTURES TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.

PHASE 4 NOTES KEYED TO PLANS: ◯

1. EXISTING SWITCHGEAR PRIMARY SECTION.
2. EXISTING SWITCHGEAR TRANSFORMER.
3. EXISTING SWITCHGEAR SECONDARY SECTION.
4. OWNER'S REPRESENTATIVE TO DEMOLISH AND REMOVE MOTOR CONTROL CENTER DUE TO PRESENCE OF ASBESTOS. COORDINATE WITH OWNER FOR REMOVAL OF EXISTING MOTOR CONTROL CENTER. DEMOLISH AND REMOVE EXISTING CONDUIT AND WIRING LINE SIDE OF THE MOTOR CONTROL CENTER BACK TO SOURCE DISTRIBUTION SWITCH. DEMOLISH AND REMOVE EXISTING CONDUIT AND WIRING, INCLUDING CONTROL WIRE, LOAD SIDE OF THE MOTOR CONTROL CENTER BACK TO PREVIOUSLY REMOVED OR MODIFIED EQUIPMENT. SALVAGE EXISTING CIRCUIT FEEDING AH-3 AND RE-USE AS SHOWN IN PHASE 5 PLANS.
5. DEMOLISH AND REMOVE EXISTING ELECTRICAL SERVICE, INCLUDING DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, MOTOR STARTERS, ETC, CONDUIT AND WIRING, FEEDING THE AIR HANDLER TO BE REMOVED, BACK TO SOURCE PANEL OR JUNCTION BOX SERVING LOADS TO REMAIN.
6. DEMOLISH AND REMOVE EXISTING ELECTRICAL SERVICE, JUNCTION BOXES, CONDUIT AND WIRING, PREVIOUSLY FEEDING DOMESTIC BOOSTER WATER PUMP DBWP-1, BACK TO EXISTING MCC OR JUNCTION BOX SERVING LOADS TO REMAIN.
7. DEMOLISH AND REMOVE EXISTING ELECTRICAL SERVICE, JUNCTION BOXES, CONDUIT AND WIRING, PREVIOUSLY FEEDING DOMESTIC BOOSTER WATER PUMP DBWP-2, BACK TO EXISTING MCC OR JUNCTION BOX SERVING LOADS TO REMAIN.
8. DEMOLISH AND REMOVE EXISTING ELECTRICAL SERVICE, JUNCTIONS BOXES, CONDUIT AND WIRING, THAT IS NOT RE-USED DURING RENOVATION, BETWEEN THE EXISTING MCC FEEDING THE AIR COMPRESSOR DISCONNECTS ACM-1 AND ACM-2.
9. DEMOLISH AND REMOVE EXISTING DUCT DETECTOR AND SAMPLING TUBE. SALVAGE AND RE-USE EXISTING FIRE ALARM CIRCUIT.
10. DEMOLISH AND REMOVE EXISTING ELECTRICAL SERVICE, JUNCTION BOXES, CONDUIT AND WIRING, THAT IS NOT REUSED DURING RENOVATION, BETWEEN THE EXISTING MCC FEEDING THE CHILLED WATER PUMP VFDS CHWP-1.
11. DEMOLISH AND REMOVE EXISTING ELECTRICAL SERVICE, JUNCTION BOXES, CONDUIT AND WIRING, THAT IS NOT REUSED DURING RENOVATION, BETWEEN THE EXISTING MCC FEEDING THE CHILLED WATER PUMP VFDS CHWP-2.



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UNIVERSITY OF SOUTH CAROLINA

project name

JONES PHYSICAL SCIENCE CENTER MECHANICAL SYSTEM RENOVATION

State project number

H27-Z340

project number

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SOUTH CAROLINA — GMK, INC. No. C00287 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — LICENSED PROFESSIONAL ENGINEER — No. 31520 — 7/10/19 — RYAN MATTHEW INFINGER

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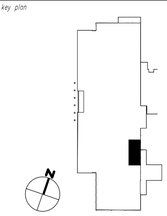

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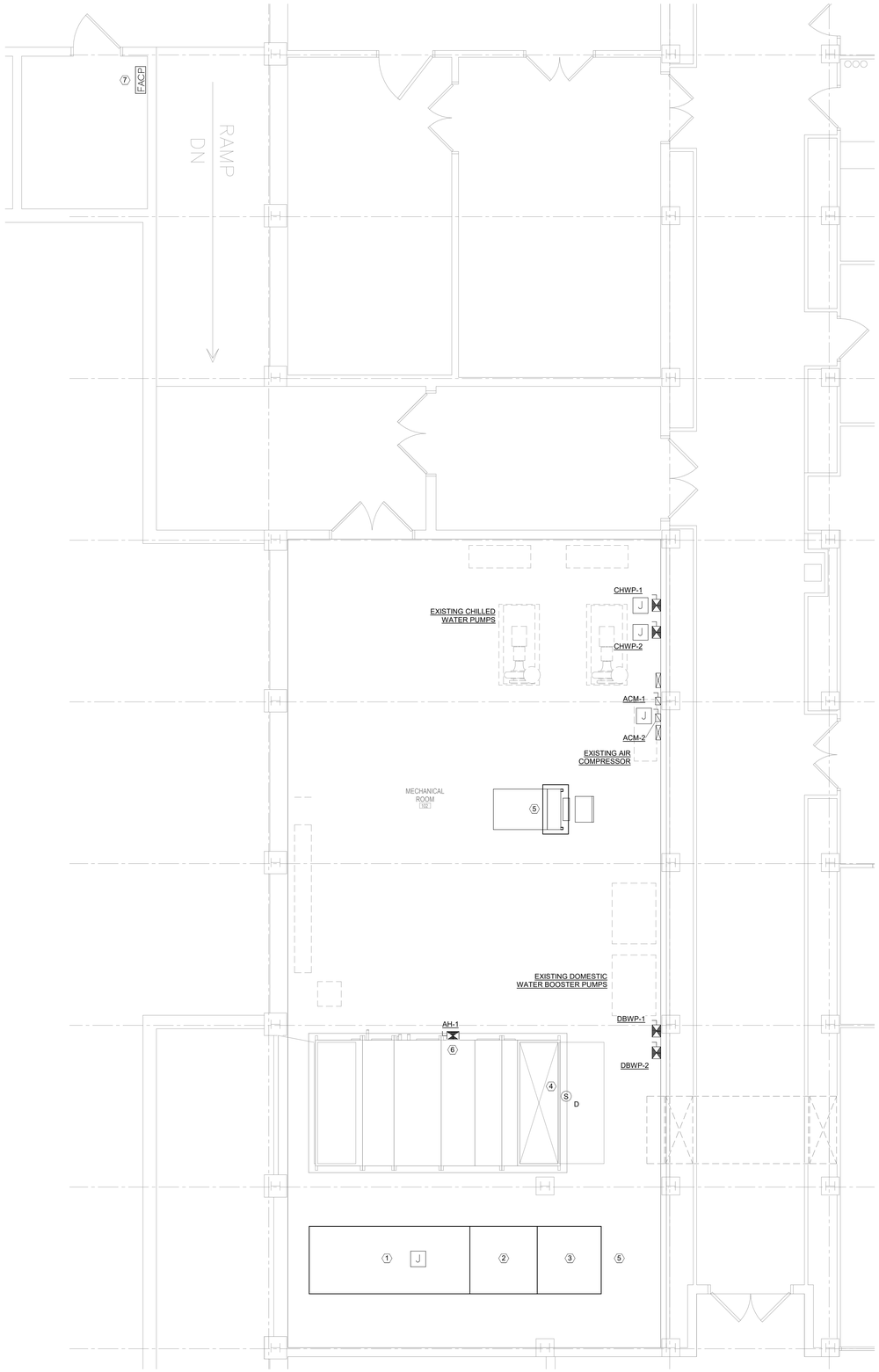
ELECTRICAL PHASE 4 BASEMENT PLAN

sheet number

E3.4

drawn by C.SE

checked by RMI



GENERAL NOTES PHASE 5:

ALL EXISTING ELECTRICAL DEVICES AND FIXTURES TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.

PHASE 5 NOTES KEYED TO PLANS: ◯

1. EXISTING SWITCHGEAR PRIMARY SECTION.
2. EXISTING SWITCHGEAR TRANSFORMER.
3. EXISTING SWITCHGEAR SECONDARY SECTION.
4. FIRE ALARM CONTRACTOR TO FURNISH AND WIRE NEW DUCT SMOKE DETECTOR AND SAMPLING TUBE; MODIFY/EXTEND EXISTING FIRE ALARM CIRCUIT SALVAGED IN DEMOLITION. MECHANICAL CONTRACTOR TO INSTALL DUCT DETECTOR AND SAMPLING TUBE.
5. MODIFY/EXTEND EXISTING CIRCUIT FEEDING AH-3 SUCH THAT AH-3 RECEIVES SERVICE FROM MDP. SEE PANEL SCHEDULE FOR CIRCUIT SIZE. DEMOLISH AND REMOVE EXISTING CONDUCTORS AND WIRING FEEDING AH-3 THAT ARE NOT RE-USED.
6. CIRCUIT AH-1 PER PANEL SCHEDULE. VFD PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. PROVIDE 120V CIRCUIT FROM PANEL P1-1.
7. EXISTING FIRE ALARM CONTROL PANEL.

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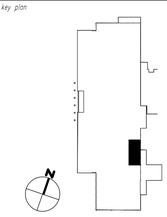

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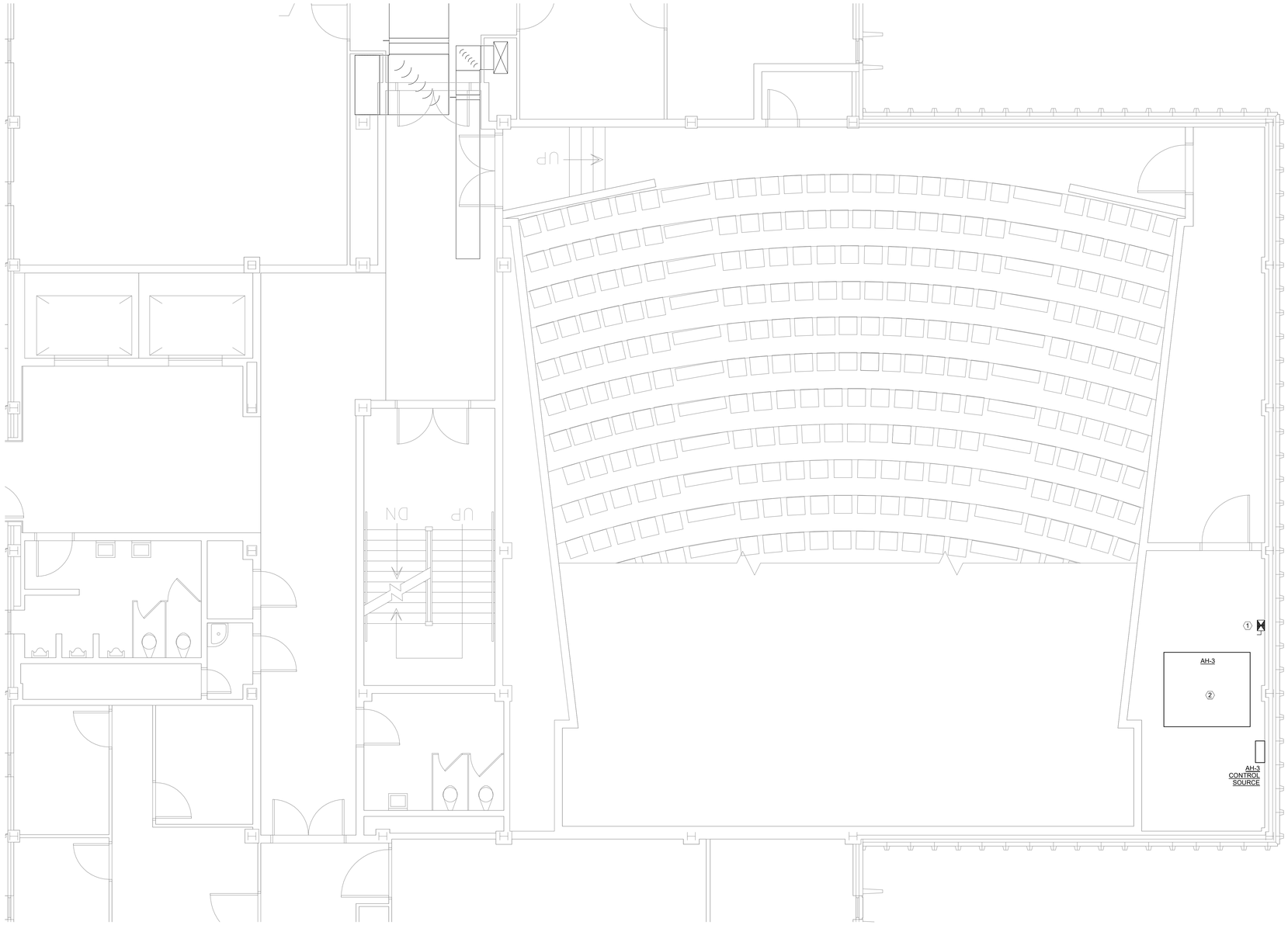
ELECTRICAL PHASE 5 BASEMENT PLAN

sheet number

E3.5

drawn by C.SE

checked by RMI



GENERAL NOTES PHASE 5:

ALL EXISTING ELECTRICAL DEVICES AND FIXTURES TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.

PHASE 5 NOTES KEYED TO PLANS:

1. PROVIDE AND INSTALL NEW COMBINATION MOTOR STARTER DISCONNECT, NEMA SIZE 1, HAND OFF AUTO, WITH RED PILOT LIGHT, WITH A NEMA 3R ENCLOSURE TO FEED EXISTING AIR HANDLER AH-3. PROVIDE NEW CONTROL WIRING BETWEEN MOTOR STARTER AND CONTROL SOURCE LOCATED IN SAME ROOM; SIZE NEW CONDUIT AND CONTROL WIRING TO MATCH EXISTING; 2#12AWG, 3/4"C MINIMUM. DEMOLISH AND REMOVE EXISTING CONDUCTOS AND CONTROL WIRING BETWEEN MCC AND AH-3 CONTROL SOURCE.
2. MODIFY/EXTEND EXISTING CIRCUIT FEEDING AH-3 SUCH THAT THE NEW COMBINATION MOTOR STARTER DISCONNECT SERVES AS BOTH A DISCONNECTING MEANS AND A CONTROLLER FOR AC-3. SEE PANEL SCHEDULE FOR CIRCUIT SIZE. DEMOLISH AND REMOVE EXISTING CONDUCTORS AND WIRING FEEDING AH-3 THAT ARE NOT RE-USED.

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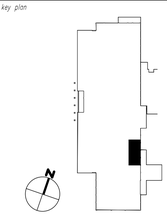

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ELECTRICAL PHASE 5 THIRD FLOOR PLAN

sheet number

E3.6

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