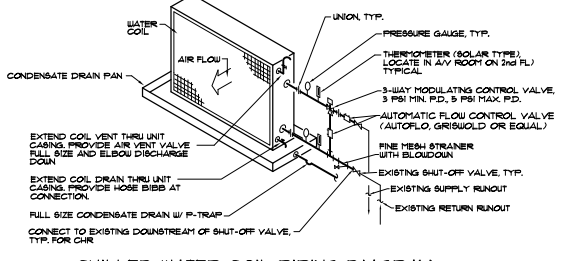
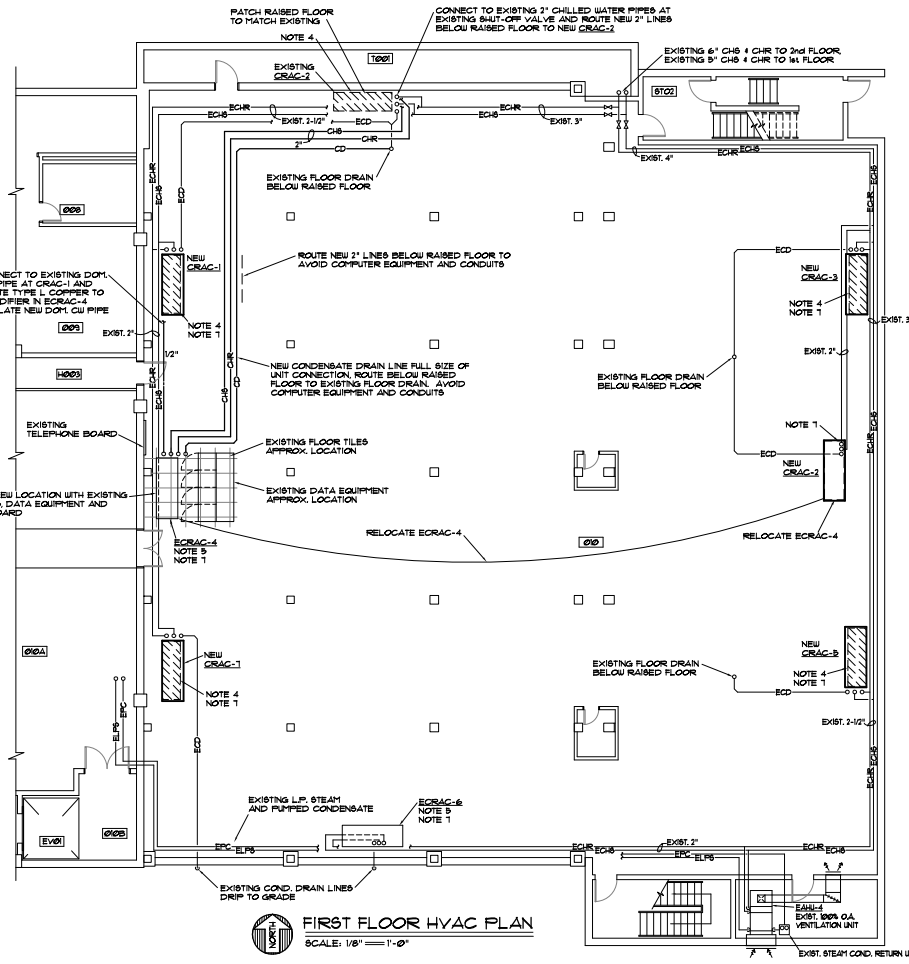


MARK	NOMINAL SIZE	LEASERT MODEL	FAN (2)		COOLING COIL								RE-HEAT	HUMIDIFIER	FILTER				
			CFM	HP.	TOTAL	SENS.	EXT. AIR (% DB/TB WB)	EUF (% F)	LUT (% F)	GPM	WATER P.D.	TYPE				KW	LBS/HR	EFF.	DEPTH
CRAC-1	20 TONS	CU016	2,400	2 x 42	240.6	230.3	15.0/61.0	45	55	51.6	103 FT	NONE	9.6	221	7ERY 8	4"			
CRAC-2	25 TONS	CU064	3,000	2 x 42	281.2	264.1	15.0/61.0	45	55	63.1	115 FT	NONE	9.6	221	7ERY 8	4"			
CRAC-3	25 TONS	CU064	3,000	2 x 42	281.2	264.1	15.0/61.0	45	55	63.1	115 FT	NONE	9.6	221	7ERY 8	4"			
CRAC-4	20 TONS	EXIST. CU016	UNIT SHALL BE UPGRADED WITH REPLACEMENT EC FANS, NEW ICOT CONTROLLERS, AND NEW 18-UNITY-DP CARDS																
CRAC-5	25 TONS	CU064	3,000	2 x 42	281.2	264.1	15.0/61.0	45	55	63.1	115 FT	NONE	9.6	221	7ERY 8	4"			
CRAC-6	20 TONS	EXIST. CU016	UNIT SHALL BE UPGRADED WITH REPLACEMENT EC FANS, NEW ICOT CONTROLLERS, AND NEW 18-UNITY-DP CARDS																
CRAC-7	20 TONS	CU016	2,400	2 x 42	240.6	230.3	15.0/61.0	45	55	51.6	103 FT	NONE	9.6	221	7ERY 8	4"			

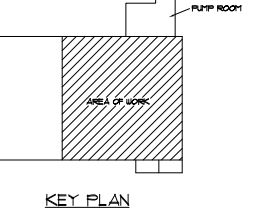
- AIR HANDLING UNIT TO MATCH AVAILABLE ELECTRICAL SERVICE. SEE ELECTRICAL. AIR HANDLING UNIT SHALL HAVE ONE POINT OF POWER CONNECTION.
- TWO (2) IMPELLERS WITH ELECTRONICALLY COMMUTATED (EC) VARIABLE SPEED MOTORS.
- PROVIDE UNITS WITH LOCKING DISCONNECT SWITCH, SMOKE DETECTOR, FLOOR STAND, DUAL FLOAT CONDENSATE PUMP, 3-WAY VALVE PIPING, ICOT CONTROL W/ DISPLAY, AND 18-UNITY-DP CARD, SEE SPECS.

- ### NOTES
- DO NOT SCALE DRAWINGS. ROUGH FROM ARCHITECTURAL, EXISTING CONDITIONS, AND EQUIPMENT MANUFACTURER'S DRAWINGS.
 - DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED. DUCT SIZES SHOWN ON DRAWINGS ARE INTERIOR DIMENSIONS.
 - WHENEVER THE WORD "PROVIDE" IS USED IT SHALL MEAN FURNISH AND INSTALL COMPLETE AND READY FOR USE.
 - WHERE NOTED, REMOVE COMPUTER ROOM AIR CONDITIONER COMPLETE INCLUDING PIPING TO SHUT OFF VALVE, SUPPORT STAND, AND CONTROLS.
 - WHERE NOTED, REMOVE CENTRIFUGAL SUPPLY AIR FANS, AND REPLACE WITH VARIABLE SPEED E.C. PLUS FANS. CONVERT UNITS TO DOWN BLOW (DRAIL-THRU) CONFIGURATION. UPGRADE EXISTING CONTROLLER TO NEW GENERATION TOUCHSCREEN ICOT CONTROLLER, AND ADD 18-UNITY-DP CARDS.
 - INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING, INCLUDING VIBRATION ISOLATION SHALL COMPLY WITH 2015 INTERNATIONAL BUILDING CODE FOR SEISMIC PROTECTION. SEE SPECIFICATIONS.
 - CONNECT TO EXISTING COBNETIC COLD WATER PIPE BELOW RAISED FLOOR SERVING EXISTING IMPELLERS WITH 1/2" TYPE L COPPER WITH 95-3 SOLDERED FITTINGS. ROUTE AND CONNECT TO HUMIDIFIER IN NEW COMPUTER ROOM UNITS COMPLETE. INSULATE NEW COLD WATER PIPES WITH 1" THICK FIBERGLASS INSULATION. SUPPORT PIPE WITH STAND-OFF BRACKETS ANCHORED TO CONCRETE FLOOR BELOW.

- ### CRAC UNIT SEQUENCE OF WORK
- ONLY ONE CRAC UNIT CAN BE DOWN AT ANY TIME EXCEPT STEP 7. RELOCATE OR UPGRADE SHALL BE COMPLETED BEFORE STARTING WORK ON THE NEXT UNIT.
 - ROUTE NEW CHILLED WATER PIPING AND CONDENSATE DRAIN PIPE FOR RELOCATED / UPGRADED UNIT ECRA-4. LEAVE ECRA-2 RUNNING AS LONG AS POSSIBLE. RELOCATE ECRA-4. CONNECT PIPING, AND UPGRADE COMPLETE. REMOVE ECRA-2 COMPLETE.
 - UPGRADE ECRA-6 COMPLETE.
 - INSTALL NEW CRAC-2 IN CURRENT LOCATION OF RELOCATED ECRA-4 COMPLETE.
 - REPLACE ECRA-1 WITH NEW CRAC-1 COMPLETE.
 - REPLACE ECRA-3 WITH NEW CRAC-3 COMPLETE.
 - REPLACE ECRA-5 WITH NEW CRAC-5 COMPLETE.
 - REPLACE ECRA-7 WITH NEW CRAC-7 COMPLETE.



CHILLED WATER COIL PIPING DIAGRAM
NOT TO SCALE



KEY PLAN

FIRST FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

CAMPUS PLANNING AND CONSTRUCTION
COLUMBIA, SC 29208

PROJECT TITLE:	UNITS MAIN DATA CENTER HVAC REPLACEMENT (H27-2363)
BUILDING:	
DATE:	12/14/15
DESIGNER:	
CHECKED BY:	DDW
DRAWN BY:	DDW
DATE:	
DISSEMINATOR:	

University of South Carolina

MECHANICAL DESIGN, INC.
4409 Broad River Road
Columbia, SC 29203
(803) 731-9934
danny@mdinc.com

CONTACT: Danny Wilds
No. C00096
DATE: 01/12/16
CONC. NO. 183436

SHEET: M101
1 OF 2
SHEET IN SET:
OF



DATE:	12/14/18
DESCRIPTION:	
DRAWN BY:	CES
CHECKED BY:	LJA
DATE:	
DRAWN BY:	
CHECKED BY:	
DATE:	
DRAWN BY:	
CHECKED BY:	

PROJECT TITLE: UTS MAIN DATA CENTER HVAC REPLACEMENT (H27-2363)

UNIVERSITY OF SOUTH CAROLINA

US21713

DATE: 12/14/18

PROJECT: E101

1 OF 1

2 OF 2

ELECTRICAL NOTES

- THE ELECTRICAL SCOPE OF THIS PROJECT IS TO DISCONNECT EXISTING CIRCUITS FROM EXISTING CRAC UNITS AND RECONNECT TO REPLACEMENT UNITS. ALL WORK SHALL BE PLANNED, STAGED, AND PERFORMED IN COORDINATION WITH MECHANICAL CONTRACTOR SO THAT NO MORE THAN 2 UNITS ARE NOT OPERATIONAL AT ANY TIME DURING REMOVAL. PHASING SHALL BE PERFORMED IN SEQUENCE OF NOTES 2 THRU 5 - TO BE COORDINATED AND CONFIRMED WITH MECHANICAL CONTRACTOR.
- DISCONNECT EXISTING CRAC-4 AND REMOVE EXISTING CONDUCTORS/CONDUIT (FED FROM EXISTING PANEL "D"). UNIT SHALL BE RELOCATED TO OPPOSITE SIDE OF ROOM. PROVIDE 175 AMP, 3 POLE BREAKER IN EXISTING PANEL "1EPP1" (REARRANGE/REMOVE 20 AMP, 1 POLE BREAKERS TO ACCOMMODATE NEW BREAKER). PROVIDE 3/2"Ø, 1#6 GND. (MC CABLE) FROM PANEL TO NEW LOCATION. CABLE AND BREAKER SHALL BE PULLED/STAGED TO MINIMIZE SHUTDOWN OF EXISTING PANEL "1EPP1" - MAXIMUM SHUTDOWN SHALL BE 20 MINUTES.
- DISCONNECT EXISTING CRAC-6 AND REMOVE EXISTING CONDUCTORS/CONDUIT (FED FROM EXISTING PANEL "B"). PROVIDE 175 AMP, 3 POLE BREAKER IN EXISTING PANEL "1EPP1" (REMOVE EXISTING 125 AMP, 3 POLE TO ACCOMMODATE NEW BREAKER). PROVIDE 3/2"Ø, 1#6 GND. (MC CABLE). CABLE AND BREAKER SHALL BE PULLED/STAGED TO MINIMIZE SHUTDOWN OF EXISTING PANEL "1EPP1" - MAXIMUM SHUTDOWN SHALL BE 20 MINUTES.
- DISCONNECT EXISTING CRAC-2 AND REMOVE EXISTING CONDUCTORS/CONDUITS (FED FROM PANEL "1EPP1"). REMOVE EXISTING DISCONNECT SWITCH FROM UNDER RAISED FLOOR. REMOVE EXISTING 125 AMP, 3 POLE BREAKER AND PROVIDE 50 AMP, 3 POLE BREAKER IN SAME POSITION OF EXISTING "1EPP1". PROVIDE 3/8"Ø, 1#10 GND. (MC CABLE). CABLE AND BREAKER SHALL BE PULLED/STAGED TO MINIMIZE SHUTDOWN OF EXISTING PANEL "1EPP1" - MAXIMUM SHUTDOWN SHALL BE 20 MINUTES.
- FOR CRAC-1, -3, -5, -7 (ONE AT A TIME), DISCONNECT EXISTING CRAC UNIT AND REMOVE EXISTING CONDUCTORS/CONDUIT AND EXISTING DISCONNECT SWITCH UNDER RAISED FLOOR. REMOVE EXISTING 125 AMP, 3 POLE BREAKER AND PROVIDE 50 AMP, 3 POLE BREAKER IN SAME POSITION OF EXISTING "1EPP1". PROVIDE 3/8"Ø, 1#10 GND. (MC CABLE). CABLE AND BREAKER SHALL BE PULLED/STAGED TO MINIMIZE SHUTDOWN OF EXISTING PANEL "1EPP1" - MAXIMUM SHUTDOWN SHALL BE 20 MINUTES.
- ALL EXISTING CRAC-RELATED BRANCH CIRCUITS (CONDUITS AND CONDUCTORS) AND DISCONNECT SWITCHES SHALL BE REMOVED FROM UNDER RAISED FLOORS. REMOVED EXISTING BREAKERS SHALL BE TURNED OVER TO OWNER. ALL PANEL DIRECTORIES SHALL BE UPDATED WITH NEW TYPED DIRECTORIES TO REFLECT CHANGES.

EXISTING CIRCUIT INFORMATION

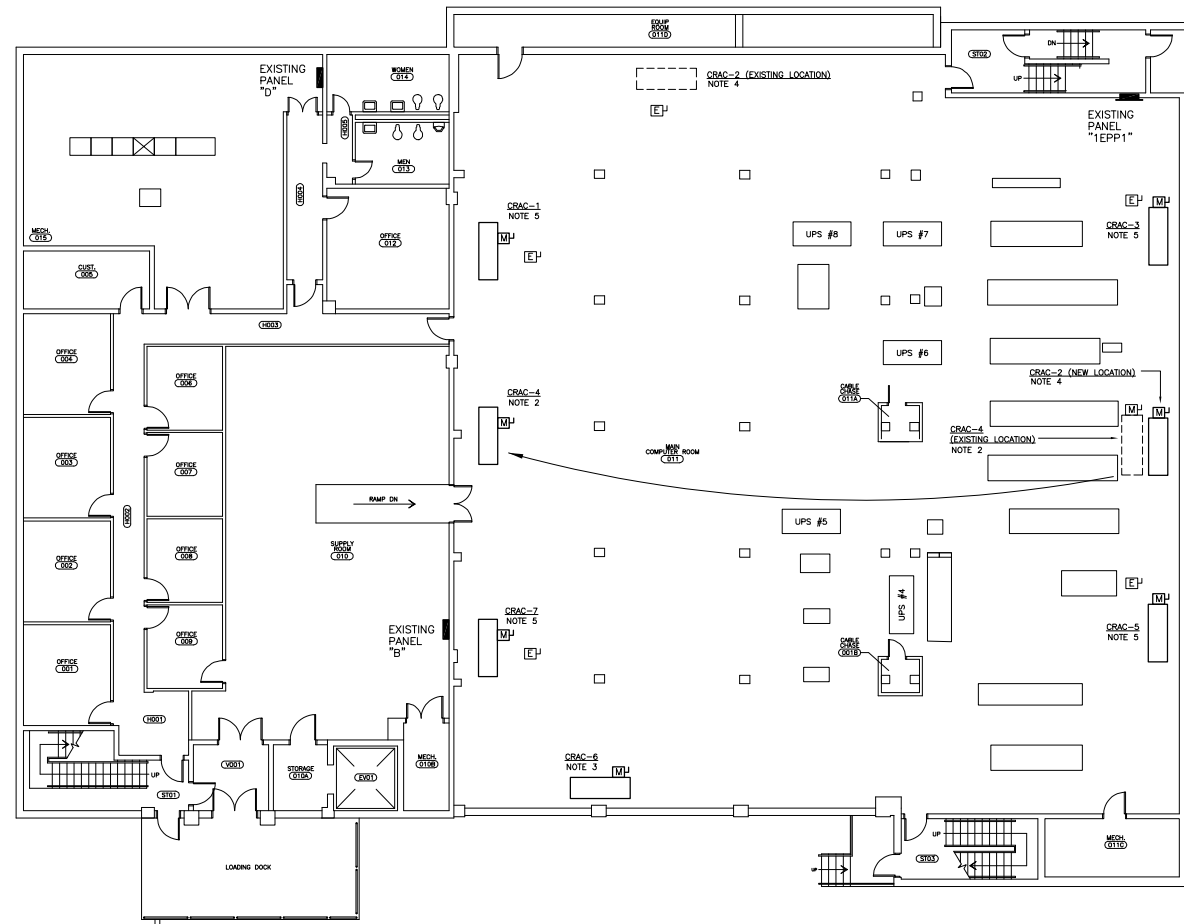
CRAC UNIT	EXISTING PANEL	EXISTING CIRCUIT	EXISTING BREAKER	EXISTING CONDUCTORS
#1	PANEL "1EPP1"	13,15,17	125A/3P	3#1, 1#6 GND.
#2	PANEL "1EPP1"	14,16,18	125A/3P	3#1, 1#6 GND.
#3	PANEL "1EPP1"	1,3,5	125A/3P	3#1, 1#6 GND.
#4	PANEL "D"	22,24,26	200A/3P	3/3"Ø, 1#6 GND.
#5	PANEL "1EPP1"	2,4,6	125A/3P	3#1, 1#6 GND.
#6	PANEL "B"	31,33,35	250A/3P	3-350kcmil, 1#4 GND.
#7	PANEL "1EPP1"	8,10,12	125A/3P	3#1, 1#6 GND.

EXISTING PANEL INFORMATION

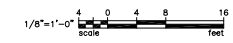
PANEL "1EPP1"	1000A M.B., 120/208V, 3ø, 4W	GENERAL ELECTRICAL "CCB"
PANEL "D"	800A M.L.O., 120/208V, 3ø, 4W	SQUARE D "I-LINE" HCW
PANEL "B"	800A M.L.O., 120/280V, 3ø, 4W	SQUARE D "I-LINE"

DISCONNECT SWITCH SCHEDULE

- EXISTING DISCONNECT UNDER RAISED FLOOR TO BE REMOVED BY THIS CONTRACTOR
- INTEGRAL MEANS OF DISCONNECTION IN MECHANICAL UNIT



1 BASEMENT FLOOR PLAN - 145
SCALE: 1/8" = 1'-0"



US21713

DATE: 12/14/18

PROJECT: E101

1 OF 1

2 OF 2

CONTACT: CLIFF STRINGFIELD
7 CLUSTERS COURT, SUITE 201 | COLUMBIA, SC | 29210
(803) 731-0550 p | (803) 731-2880 f
CStringfield@BEA-Consulting.com