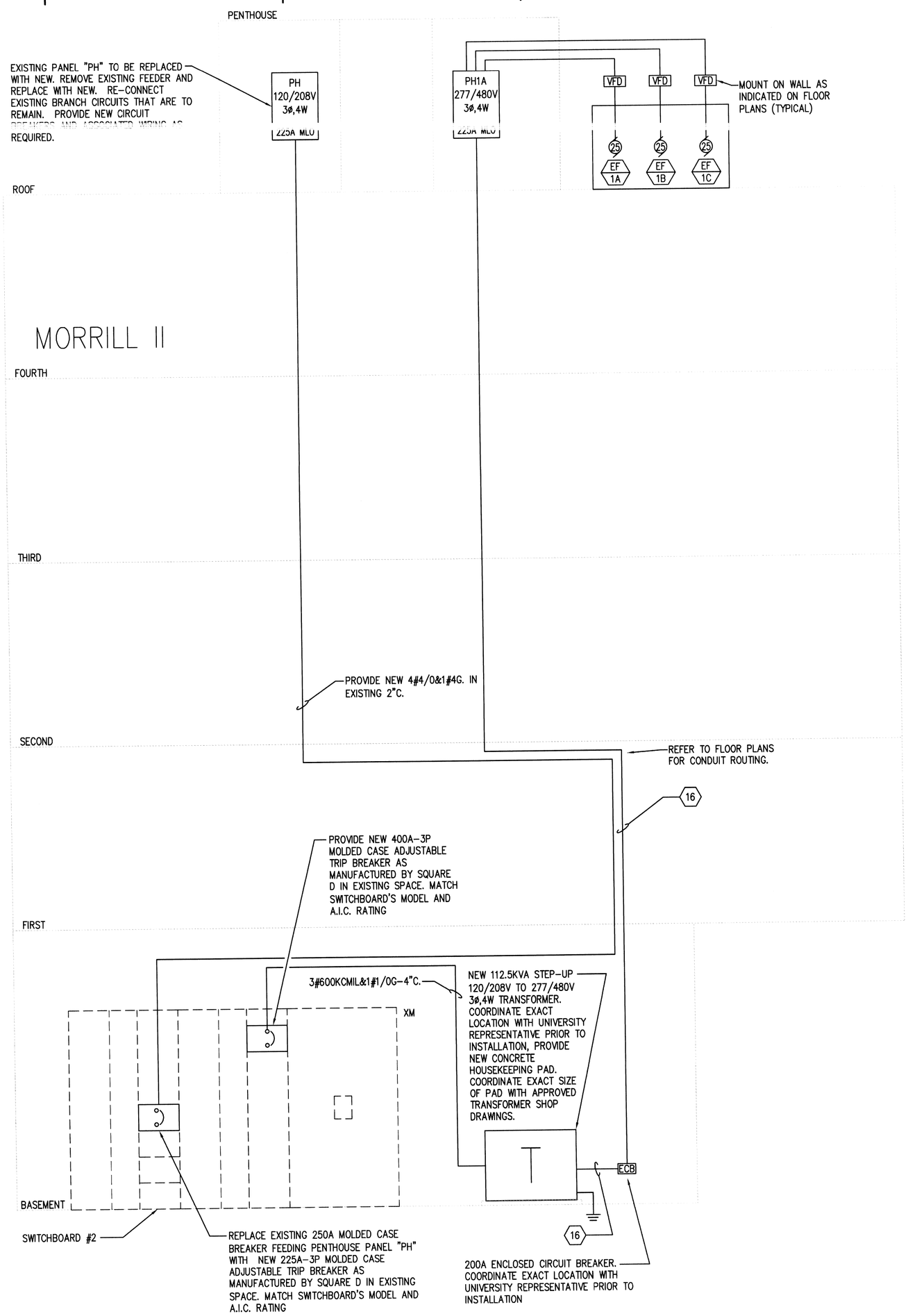

1 PARTIAL RISER DIAGRAM
SCALE: NOT TO SCALE

LEGEND OF FEEDER SIZES – COPPER CONDUCTORS

3-WIRE FEEDER TAG SYMBOL	CONDUCTORS (3-PHASE, 3-WIRE WITH GROUND) OR (1-PHASE, 3-WIRE WITH GROUND)	RACEWAY SIZE CONDUIT	4-WIRE FEEDER TAG SYMBOL	CONDUCTORS (3-PHASE, 4-WIRE WITH GROUND)	RACEWAY SIZE CONDUIT	NOMINAL AMPERE RATING
1	3#1 & 1#8G.	1"	2	4#4 & 1#10G.	1 1/4"	60
3	3#4 & 1#8G.	1"	4	4#4 & 1#8G.	1 1/4"	70
5	3#1 & 1#8G.	1 1/2"	6	4#1 & 1#8G.	1 1/2"	100
7	3#1/0 & 1#6G.	1 1/2"	8	4#1/0 & 1#6G.	2"	125
9	3#1/0 & 1#6G.	1 1/2"	10	4#1/0 & 1#6G.	2"	150
11	3#2/0 & 1#6G.	2"	12	4#2/0 & 1#6G.	2"	175
13	3#3/0 & 1#6G.	2"	14	4#3/0 & 1#6G.	2"	200
15	3#4/0 & 1#4G.	2"	16	4#4/0 & 1#4G.	2 1/2"	225
17	3#250 KCMIL & 1#4G.	2 1/2"	18	4#250 KCMIL & 1#4G.	3"	250
19	3#350 KCMIL & 1#4G.	3"	20	4#350 KCMIL & 1#4G.	3"	300
21	3#500 KCMIL & 1#3G.	3 1/2"	22	4#500 KCMIL & 1#3G.	4"	350
23	3#600 KCMIL & 1#3G.	3 1/2"	24	4#600 KCMIL & 1#3G.	4"	400
25	6#250 KCMIL & 2#2G.	(2) 2 1/2"	26	8#250 KCMIL & 2#2G.	(2) 3"	500
27	6#350 KCMIL & 2#1G.	(2) 3"	28	8#350 KCMIL & 2#1G.	(2) 3"	600
29	6#600 KCMIL & 2#1/0G.	(2) 3 1/2"	30	8#600 KCMIL & 2#1/0G.	(2) 4"	800
31	9#400 KCMIL & 3#2/0G.	(3) 3"	32	12#400 KCMIL & 3#2/0G.	(3) 3"	1000
33	9#600 KCMIL & 3#3/0G.	(3) 3 1/2"	34	12#600 KCMIL & 3#3/0G.	(3) 4"	1200
35	12#600 KCMIL & 4#4/0G.	(4) 3 1/2"	36	16#600 KCMIL & 4#4/0G.	(4) 4"	1600
37	15#600 KCMIL & 5#250 KCMIL G.	(5) 3 1/2"	38	20#600 KCMIL & 5#250 KCMIL G.	(5) 4"	2000

FEEDER SIZE NOTES:

1. 600KCMIL FEEDERS SHALL BE PROVIDED WITH MAC ADAPTERS AS REQUIRED TO COORDINATE WITH BREAKER LUG SIZES.
2. SEE SPECIFICATIONS FOR ACCEPTABLE CONDUCTOR TYPES.

EXISTING PANEL SCHEDULE
PANEL PH

VOLTS 208/120
PHASE 3
WIRE 4
A.I.C. EXISTING

MAINS M.L.O.
BUSSING –
FEED EXISTING
MOUNTING SURFACE

CIR	SERVICE DESCRIPTION	FRAME	POLES	A B C	POLES	FRAME	SERVICE DESCRIPTION	CIR
1	MAIN ELEVATOR	200A	3P		3P	100A	10HP FAN	2
3								4
5								6
7	EXISTING BRANCH CIRCUIT	100A	3P		3P	60A	CHILLED WATER PUMP	8
9								10
11								12
13	CHILLED WATER PUMP	60A	3P		3P	30A	TOWER PUMP	14
15								16
17								18
19	SPARE	30A	3P		3P	30A	JOHNSON CONTROLS	20
21								22
23								24
25	SPARE	30A	3P		3P	30A	1 HP VENTILATOR	26
27								28
29								30
31	SPARE	30A	3P		1P	30A	REF CONTROL	32
33					1P	30A	UNIT HEATERS	34
35					1P	30A	RECEPTACLE	36
					1P	30A	CORROSSEN PUMP	38

NOTES: (FOR INFORMATIONAL PURPOSES ONLY)

1. ALL EXISTING OVERCURRENT PROTECTIVE DEVICES ARE FUSES. ALL EXISTING FUSES SHALL BE REPLACED WITH CIRCUIT BREAKERS, VERIFY ACTUAL LOAD IN THE FIELD AND SIZE CIRCUIT BREAKERS ACCORDINGLY.

480 VOLT, 3 PHASE MOTOR TABLE

HP	FULL LOAD AMPS (1)	NEMA SIZE STARTER	CIRCUIT BREAKER (2)	MOTOR CIRCUIT PROTECTOR	FUSE SIZE (2) NON-TIME DELAY	FUSE SIZE (2) TIME DELAY	PHASE WIRE SIZE (3)	GROUND WIRE SIZE (4)	CONDUIT SIZE (5)
5	7.6	1	20	15	25	15	10	10	3/4
7 1/2	11	1	30	15	35	20	10	10	3/4
10	14	1	30	30	45	25	10	10	3/4
15	21	2	50	30	70	40	8	8	3/4
20	27	2	60	50	90	50	6	8	1
25	34	2	80	50	110	60	6	6	1
30	40	3	100	70	125	70	4	6	1 1/4
40	52	3	125	100	175	100	3	6	1 1/4
50	65	3	150	100	200	125	1	6	1 1/2

480 VOLT, 3 PHASE MOTOR TABLE NOTES:

(1) PER 2008 NEC, TABLE 430.250.
(2) PER 2008 NEC, TABLE 430.52.
(3) PER 2008 NEC, ARTICLE 430.22.
(4) PER 2008 NEC, TABLE 250.122.
(5) PER 2008 NEC, ANNEX C, TABLE C1 (EMT).

SCHEDULE OF PANELBOARDS

PANEL	LOCATION	MOUNTING	VOLTS/PHASE/WIRE	A.I.C. RATING	BUS SIZE	MAINS MLO	MAINS MCB	15A 1P	20A 1P	30A 1P	40A 1P	15A 2P	20A 2P	30A 2P	40A 2P	15A 3P	20A 3P	30A 3P	40A 3P	50A 3P	60A 3P	70A 3P	80A 3P	90A 3P	100A 3P	125A 3P	150A 3P	175A 3P	200A 3P	SPARE (1/20)	SPACE	TOTAL POLES	NOTES
PH	PENTHOUSE	SURFACE	120/208V; 3PH,4W	42K		225A			8	4								6			3					1					0	42	1
PH1A	PENTHOUSE	SURFACE	277/480V; 3PH,4W	22K		225A			4												1		3								14	30	

NOTES:

1 ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO MATCH EXISTING LOADS THAT ARE TO REMAIN. AT A MINIMUM THE ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT BREAKERS AS INDICATED IN THIS SCHEDULE.

FITZEMEYER & TOCCI ASSOCIATES, INC.
MECHANICAL / ELECTRICAL ENGINEERS
92 Montvale Ave, Suite 4100
Stoneham, MA 02180
Tel: 781-481-0210
Fax: 781-481-0203
email: info@f-t.com
www.f-t.com
Project No.: 09088.00

REV. NO	DESCRIPTION	BY	APP'D	DATE
-	-	-	-	-
-	ISSUED FOR BID	-	-	08.25.10
-	100% CONSTRUCTION DOCUMENTS	-	-	08.20.10

UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

MORRILL II & III VENTILATION UPGRADE

MORRILL 2, ELECTRICAL RISER DIAGRAM AND SCHEDULES

	BY	DATE
DRN.	-	-
APP'D	-	-
CKD.	-	-
APP'D	-	-

PROJECT NO. 08-001594
CONTRACT NO. UMA 11-04
SCALE N.T.S.
SHEET 60 OF 71
DRAWING NUMBER D-A-127/290-08-001594- E1

W:\2009\09088.00 - UMA Morrill 3\Plot\09088E1.dwg Aug 19, 2010 - 4:04pm