NOTES:

1. 1"C. – (1)#4/0 SERVICE GROUNDING CONDUCTOR FROM SWITCHBOARD GROUND BUS TO DOMESTIC WATER SERVICE PIPE.
2. BUILT–IN TRANSIENT VOLTAGE SURGE SUPPRESSER (SEE SPECIFICATION).
3. PROVIDE FULLY RATED VERTICAL AND HORIZONTAL BUS SECTIONS.
4. INSTALL FEEDER IN EXISTING (3)–4" CONDUITS.
5. WITH ISOLATED GROUND BUS.
6. FOR FEEDER ROUTING IN EXISTING BUILDING REFER TO POWER PLANS. PENETRATIONS/SLEEVES THROUGH EXISTING ROOF AND NEW MECHANICAL PENTHOUSE FLOOR SHALL BE SEALED.
7. FOR FEEDER SIZES NOT IDENTIFIED ON ONE–LINE DIAGRAM, REFER TO RESPECTIVE PANELBOARD SCHEDULES ON DWG E8.1 OR TRANSFORMER FEEDER SCHEDULE ON THIS DWG.
8. GROUNDING CONDUCTOR TO PAD–MOUNTED TRANSFORMER GROUNDING LOOP, REFER TO POWER PLAN.
9. SLEEVE FOR 1" CONDUIT, REFER TO SPECIFICATION AND NOTE #67 ON DRAWING E2.0 FOR REQUIREMENTS.
10. SLEEVE FOR 3" CONDUIT, REFER TO SPECIFICATION AND NOTE #67 ON DRAWING E2.0 FOR REQUIREMENTS.
11. PROVIDE POWER WIRING PER THE ELEVATOR SHOP DRAWINGS.
12. FURNISH AND INSTALL (1) 700AMP/3 POLE MOLDED–CASE CIRCUIT BREAKER, HACR RATED, IN THE EXISTING SPACE. THE CIRCUIT BREAKER SHORT–CIRCUIT INTERRUPTING RATING SHALL MATCH THE SWITCHBOARD RATING.
13. EXISTING CIRCUIT BREAKER WITH SHUNT TRIP SHALL BE FEILD–RETROFITTED WITH AUXILLARY SWITCH CONTACTS, TYPE AS REQUIRED TO SWITCH POWER TO EMERGENCY BATTERY–POWERED LOWERING UNIT.
14. E.C. SHALL VERIFY IF ELEVATOR WIRING FROM MAIN SWITCHBOARD HAS BEEN PULLED WITHIN SCOPE OF PREVIOUS PHASES. IF NOT, IT SHALL BE CONSIDERED IN SCOPE OF THIS PROJECT: PROVIDE 3#4 & 1#6GND. IN EXISTING 1–1/4"CONDUIT.
15. PROVIDE NEW 60A/3P CIRCUIT BREAKER IN EXISTING PANEL.

ALTERNATE 1

FEEDER SCHEDULE

		CONDUIT	FEEDER
	1	(8)–4"C.	(8) 4#500kcmil
	2	(2)–4"C.	(2)–(4#600kcmil & 1#1/0 GND.)
	3	(3)–4"C.	(3)–(4#500kcmil & 1#3/0 GND.)
	4	(2)–3"C.	(2)–(3#350kcmil & 1#1 GND.)
	5	2"C.	3#3/0 & 1#4GND.
	6	1 1/4"C.	4#3 & 1#8 GND.
	7	1"C.	4#6, 1#6 I.G., & 1#10 GND.
N.I.C.	8	(2)–3"C.	2 SETS (3–350kcmil & 1#1/0 GND.)

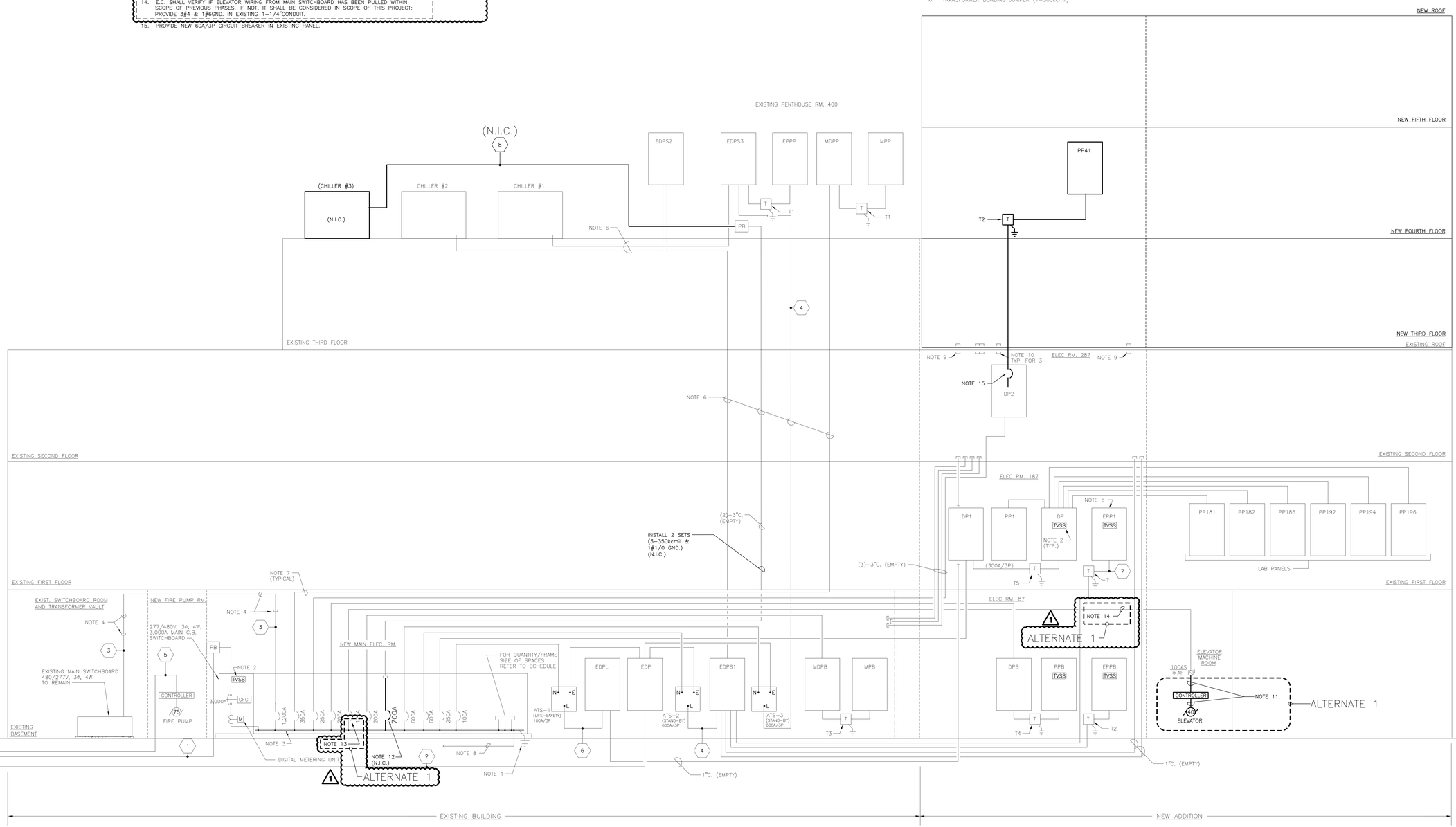
DRY TYPE TRANSFORMER SCHEDULE

ID	KVA	480 VOLT OVER CURRENT	208 VOLT OVER CURRENT	480V FEEDER	120/208V FEEDER	GROUNDING (5)
T1	15	30A, 3P	50A, 3P	3#10 & 1#10GND. – 3/4"C.	4#6 & 1#10GND. – 1"C.	1#6 – 3/4"C
T2	30	60A, 3P	100A, 3P	3#6 & 1#10GND. – 1"C.	4#3 & 1#8GND. – 1 1/4"C.	1#6 – 3/4"C
T3	45	80A, 3P	150A, 3P	3#4 & 1#8GND. – 1 1/4"C.	4#1/0 & 1#6GND. – 2"C.	1#6 – 3/4"C
T4	75	150A, 3P	250A, 3P	3#1/0 & 1#6GND. – 1 1/2"C.	4#250kcmil & 1#4GND. – 3"C.	1#2 – 3/4"C
T5	150	300A, 3P	500A, 3P	(3)–(3"C., 3#350kcmil & 1#4 GND.)	(2)–(3"C., 8#250kcmil & 2#2GND.)	1#2/0 – 3/4"C.

TRANSFORMER NOTES:

1. BOND NEUTRAL OF TRANSFORMER SECONDARY TO THE TRANSFORMER CASE, WITH BONDING JUMPER.
2. GROUND THE CASING OF THE TRANSFORMER TO NEAREST AVAILABLE EFFECTIVELY GROUNDED WATER PIPE, STRUCTURAL STEEL AND/OR DRIVEN GROUND ROD IN ACCORDANCE WITH N.E.C. 250–50 AND 250–52.
3. ALL CONDUCTOR SIZES ARE FOR COPPER CONDUCTORS. N.E.C. TABLE 310–16.
4. SECONDARY OVER CURRENT PROTECTION SHALL BE LOCATED WITHIN TEN (10) FEET OF THE TRANSFORMER SECONDARY TERMINALS EITHER IN A PANELBOARD (MAIN BREAKER) OR A INDIVIDUALLY MOUNTED CIRCUIT BREAKER.
5. TRANSFORMER BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR, EXCEPT NOTED OTHERWISE.
6. TRANSFORMER BONDING JUMPER (1–300kcmil)

KEY
- FUTURE
- NEW
- EXISTING



POWER ONE–LINE DIAGRAM

SMMA
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Cambridge, Massachusetts 02138
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OWNER REVIEW

NAME	DATE

NO.	DATE	DESCRIPTION
0	02.20.04	CONSTRUCTION

ISSUE LOG
△ = CLOUDED CHANGE

UNIVERSITY OF SOUTHERN MAINE
SCIENCE BUILDING RESEARCH WING EXPANSION
70 Falmouth Street
Portland, Maine

POWER ONE-LINE DIAGRAM △1 PHASE 2

SCALE	NONE
DRAWN BY	DRC
CHECKED BY	
PROJ. ARCH. / ENGR.	LG/SD
PROJ. MGR.	RCH
JOB NO.	03049.00

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E4.1