GENERAL NOTES:

1. SEE TABLE 3 ON THIS DRAWING FOR TRANSFORMER FEEDER SIZES, INCLUDING GROUNDING ELECTRODE SIZE.
2. PULL NEW WIRE IN EXISTING EMPTY 2" CONDUIT TO EXISTING 100A, 480/277V PARKING LOT PANEL LOCATED IN PARKING LOT BOOTH. INCREASE FEEDER SIZE AS REQUIRED TO ACCOUNT FOR VOLTAGE DROP IF NECESSARY.
3. EMPTY CONDUIT WAS PROVIDED FOR FEEDER TAGS WITH THIS NOTE ADJACENT TO IT AS PART OF UNDERGROUND PACKAGE 1.
4. PROVIDE POWER WHERE REQUIRED PER "ET" SERIES DRAWINGS AND ASSOCIATED SPECIFICATIONS FOR TELECOM, SECURITY, AV DEVICES AND SIGNAGE. NOTE THAT 25% SPARE QUANTITY OF CIRCUIT BREAKERS SHALL BE PROVIDED IN PANELBOARDS. AN ADDITIONAL PANELBOARD SHALL BE PROVIDED IF BRANCH CIRCUIT QUANTITY EXCEEDS THIS AMOUNT WITH PANELS SHOWN IN RISER BELOW.
5. (1) GENERATOR ENCLOSURE SHOULD BE PROVIDED IN ACCORDANCE WITH STATE OF MINNESOTA REQUIREMENTS, INCLUDING "INDUSTRALIZED MODULAR BUILDING BULLETIN #38"; THIS STATES ENCLOSURE REQUIRES IMBC (INDUSTRIALIZED MODULAR BUILDING COMMISSION) CERTIFICATION LABEL AND REQUIREMENTS FOR H-3 TYPE OCCUPANCIES AS DEFINED IN INTERNATIONAL BUILDING CODE 2006. REFER TO CIVIL DRAWING FOR LOCATION OF GENERATOR.

KEYED NOTES:

1. MOTOR PROTECTOR WITH MAGNETIC TRIP THAT OPENS ON SHORT CIRCUIT ONLY. CIRCUIT BREAKER SHALL NOT HAVE THERMAL TRIP.
2. MULTIPLE METER UNIT CABINET FOR SUBMETERS. METER CABINET SHALL BE EMON TYPE "MMU24" OR APPROVED EQUAL. SEE PANEL SCHEDULES AND SPECIFICATION 16428 FOR ADDITIONAL SUBMETERING REQUIREMENTS.
3. "LP" PANELS SHALL BE SQUARE D POWERLINK G3 TYPE PANELS OR APPROVED EQUAL. LIGHTING CIRCUITS SHALL BE ON CONTROLLABLE CIRCUIT BREAKERS WHERE INDICATED ON PANEL SCHEDULES AND ARE CONTROLLED BY THE BAS (BUILDING AUTOMATION SYSTEM) – COORDINATE WITH BAS CONTRACTOR.

   PANELS SHOWN ON RISER WITH "M" INSIDE THEM ARE SQUARE D POWERLINK G3 MASTER PANELS (INCLUDE CONTROLLER). PANELS SHOWN WITH "S" INSIDE OF THEM ARE SQUARE D POWERLINK G3 SLAVE PANELS. SEE SPECIFICATION SECTION 16146 FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
4. SQUARE D POWERLINK DEVICE ROUTER. LOCATE ROUTER WITHIN 50 FT OF MASTER PANEL. RS232 CABLE CONNECTION BETWEEN MASTER PANEL AND ROUTER IS PROVIDED BY SQUARE D.
5. CONTROL WIRE IN BETWEEN SQUARE D MASTER PANEL AND SLAVE PANELS SHALL BE 4-WIRE, CLASS 1 COMMUNICATIONS CABLE (BELDEN 27326 OR EQUIVALENT).

TABLE 3

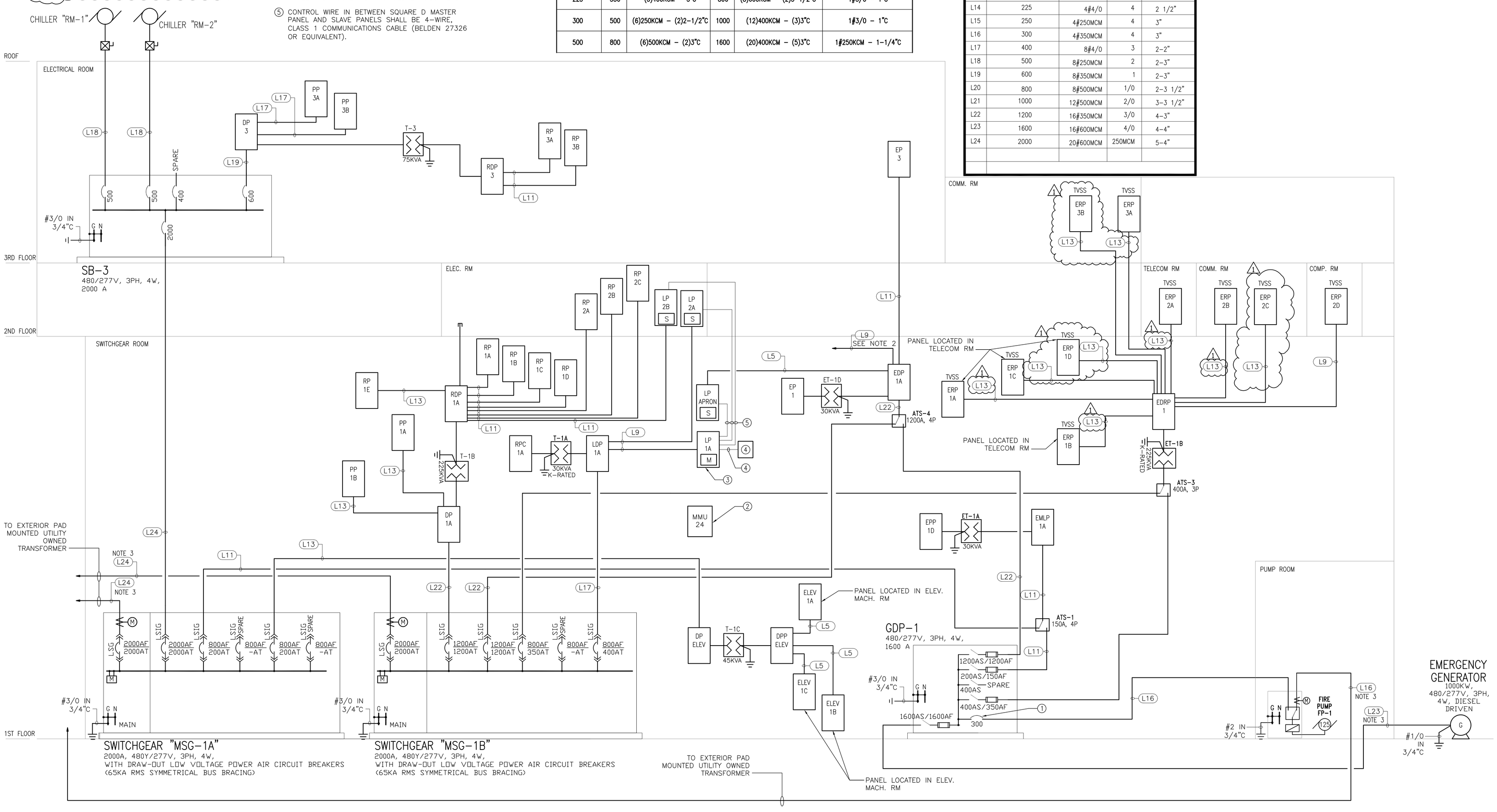
TRANSFORMER SCHEDULE

TRANSFORMER (KVA)	480 VOLT SIDE OCD (AMPS)	480 VOLT SIDE FEEDER	120/208 VOLT SIDE OCD (AMPS)	120/208 VOLT SIDE NON "K" RATED TRANSFORMER FEEDER	120/208 VOLT SIDE GROUNDING ELECTRODE CONDUCTOR
9	15	3#12 – 3/4"C	40	4#8 – 3/4"C	1#8 – 1/2"C
15	30	3#10 – 3/4"C	50	4#6 – 1"C	1#8 – 1/2"C
30	50	3#6 – 1"C	100	4#2 – 1-1/4"C	1#8 – 1/2"C
45	70	3#4 – 1"C	150	4#1/0 – 2"C	1#6 – 1/2"C
75	125	3#1 – 1-1/4"C	250	4#250KCM – 2-1/2"C	1#2 – 3/4"C
112.5	175	3#2/0 – 1-1/2"C	400	(4)600KCM – 3-1/2"C	1#1/0 – 1"C
150	225	3#4/0 – 2"C	500	(8)250KCM – (2)2-1/2"C	1#1/0 – 1"C
225	350	(3)400KCM – 3"C	800	(8)600KCM – (2)3-1/2"C	1#3/0 – 1"C
300	500	(6)250KCM – (2)2-1/2"C	1000	(12)400KCM – (3)3"C	1#3/0 – 1"C
500	800	(6)500KCM – (2)3"C	1600	(20)400KCM – (5)3"C	1#250KCM – 1-1/4"C

SIZING OF 3PH, 4W & GROUND FEEDERS (COPPER CONDUCTORS)

(1) NOTE: PROVIDE 200% NEUTRAL FOR "ERP" PANELS

TAG	REQUIRED OVERCURRENT DEVICE (OCD) WITH FUSE OR C/B TRIP (AMPS)	QUANTITY AND SIZE OF CONDUCTORS AND CONDUIT: 4WIRE SET	GROUND WIRE	CONDUIT(S)
L1	20	4#12	12	3/4"
L2	30	4#10	10	3/4"
L3	40	4#8	10	3/4"
L4	50	4#6	10	1"
L5	60	4#6	10	1"
L6	70	4#4	8	1 1/4"
L7	80	4#2	8	1 1/4"
L8	90	4#2	8	1 1/4"
L9	100	4#1	8	1 1/2"
L10	125	4#1	6	1 1/2"
L11	150	4#1/0	6	2"
L12	175	4#2/0	6	2"
L13	200	4#3/0	6	2"
L14	225	4#4/0	4	2 1/2"
L15	250	4#250MCM	4	3"
L16	300	4#350MCM	4	3"
L17	400	8#4/0	3	2-2"
L18	500	8#250MCM	2	2-3"
L19	600	8#350MCM	1	2-3"
L20	800	8#500MCM	1/0	2-3 1/2"
L21	1000	12#500MCM	2/0	3-3 1/2"
L22	1200	16#350MCM	3/0	4-3"
L23	1600	16#600MCM	4/0	4-4"
L24	2000	20#600MCM	250MCM	5-4"



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ENGINEER CERTIFICATION

I hereby certify that the engineerinhg plans, specifications or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Douglas C. Mass

Signature:

Date: 08/16/10 Reg. No.: 21067

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM 1	6.11.10
	CONFORMANCE SET	7.12.10
3	PERMIT REVISIONS	7.23.10
	BUILDING PERMIT	8.16.10
	100% REVIEW	12.17.10
	BID PACKAGE 2A	1.24.11
1	BP2A ADDENDUM 2	2.25.11

DATE ISSUED: 02-25-11
REVIEWED BY: XXX
DRAWN BY: JK
DESIGNED BY: JK

AEP PROJECT NUMBER
213-1882-091

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SHEET TITLE
POWER RISER DIAGRAM

SHEET NUMBER
E300

BID PACKAGE 2A
ADDENDUM 2

Drawing: I:\2035.00 Duluth Airport\5.0 CADD\(5.1) Electrical\Dwgs\2035_E300.dwg Plotted on: 2/25/2011 8:55 AM Plotted by: Kastner, Jennifer