

PACKAGING CORPORATION OF AMERICA
6247 SOUTH PINE STREET
BURLINGTON, WISCONSIN 53105

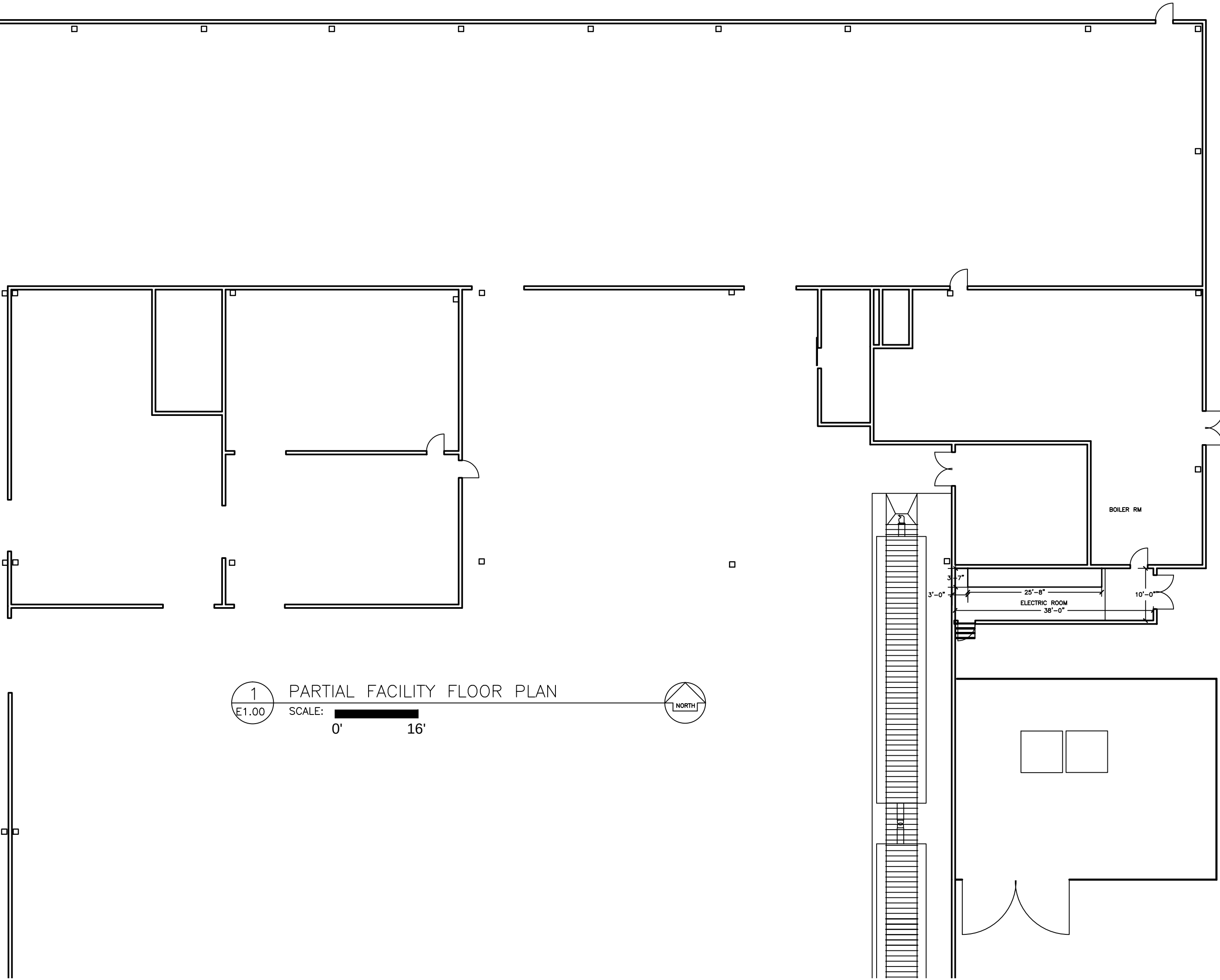
ELECTRICAL SERVICE UPGRADE

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WISCONSIN
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MAR 26, 2014

ELECTRICAL SYMBOLS				
A A A A EM			GFI	



SHEET INDEX

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PROJECT:
FOSBER CORRUGATOR UPGRADE
PACKAGING CORPORATION OF AMERICA
6247 SOUTH PINE STREET
BURLINGTON, WISCONSIN 53105
TITLE:
ELECTRICAL COVER SHEET & INDEX

REVISIONS

DATE:
MARCH 26, 2014

DRAWN BY:
DAE

CHECKED BY:
DAE

APPROVED BY:
DAE

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E1.00

ELECTRICAL MECHANICAL EQUIPMENT SCHEDULE															
ID	KEY	ELECTRICAL DATA		LOCATION	BASIS OF DESIGN				FED FROM	CKT #	LOAD	DISC	CONTROL	REMARKS	NOTES
		MOCP AMPS	VOLTAGE		MANUFACTURER	MODEL #	DESCRIPTION	CONDUIT & WIRE SIZE							
UH-1	⚡	20	208/3/60	ELECTRIC ROOM	DAYTON	2YU65	UNIT HEATER	3/4"C, (3) #10 THHN CU	LPER	7,9,11	5000	YES	OTHERS	BY ELECTRICAL CONTRACTOR	1,2
UH-2	⚡	20	208/3/60	ELECTRIC ROOM	DAYTON	2YU65	UNIT HEATER	3/4"C, (3) #10 THHN CU	LPER	13,15,17	5000	YES	OTHERS	BY ELECTRICAL CONTRACTOR	1,2

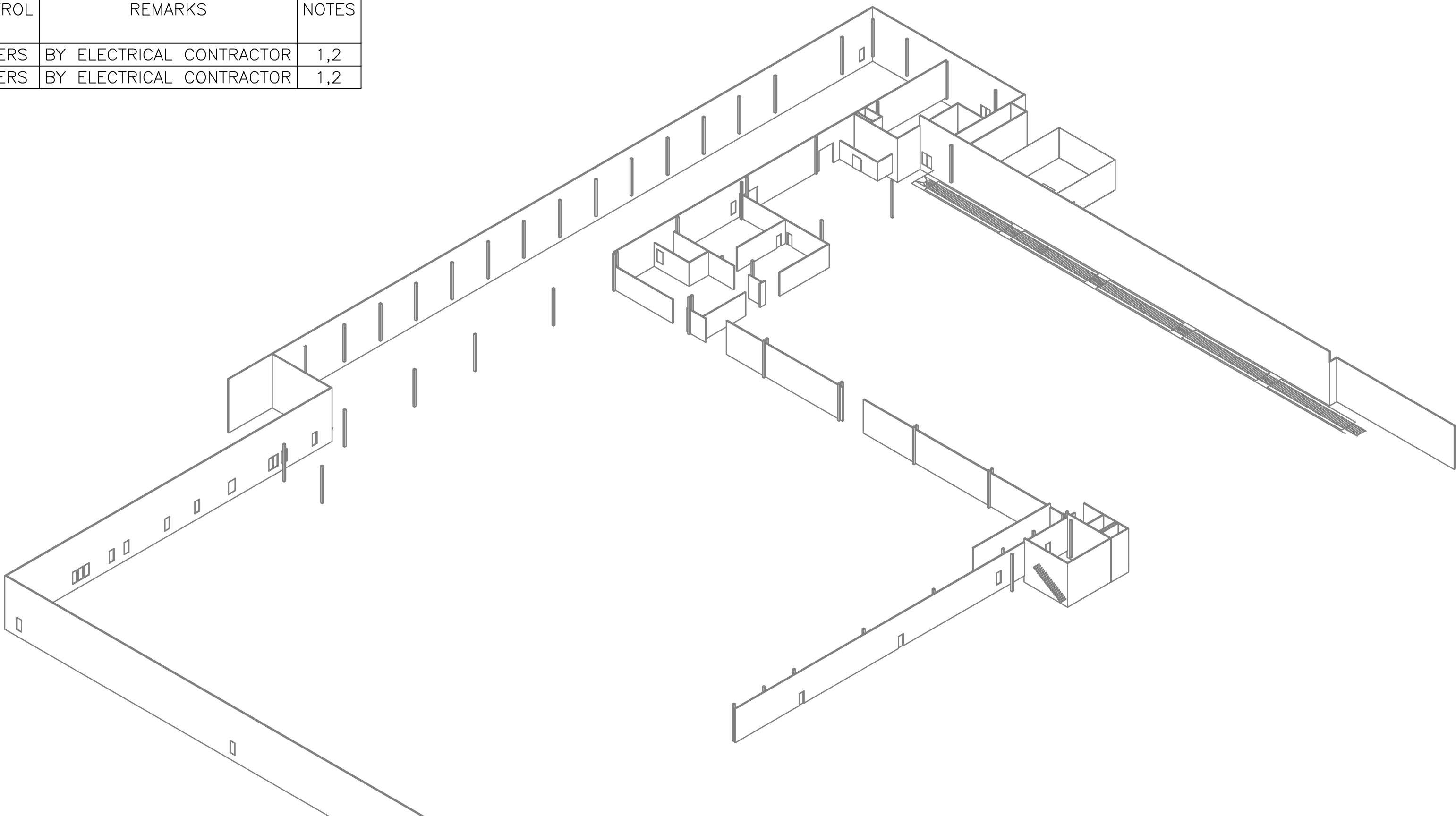
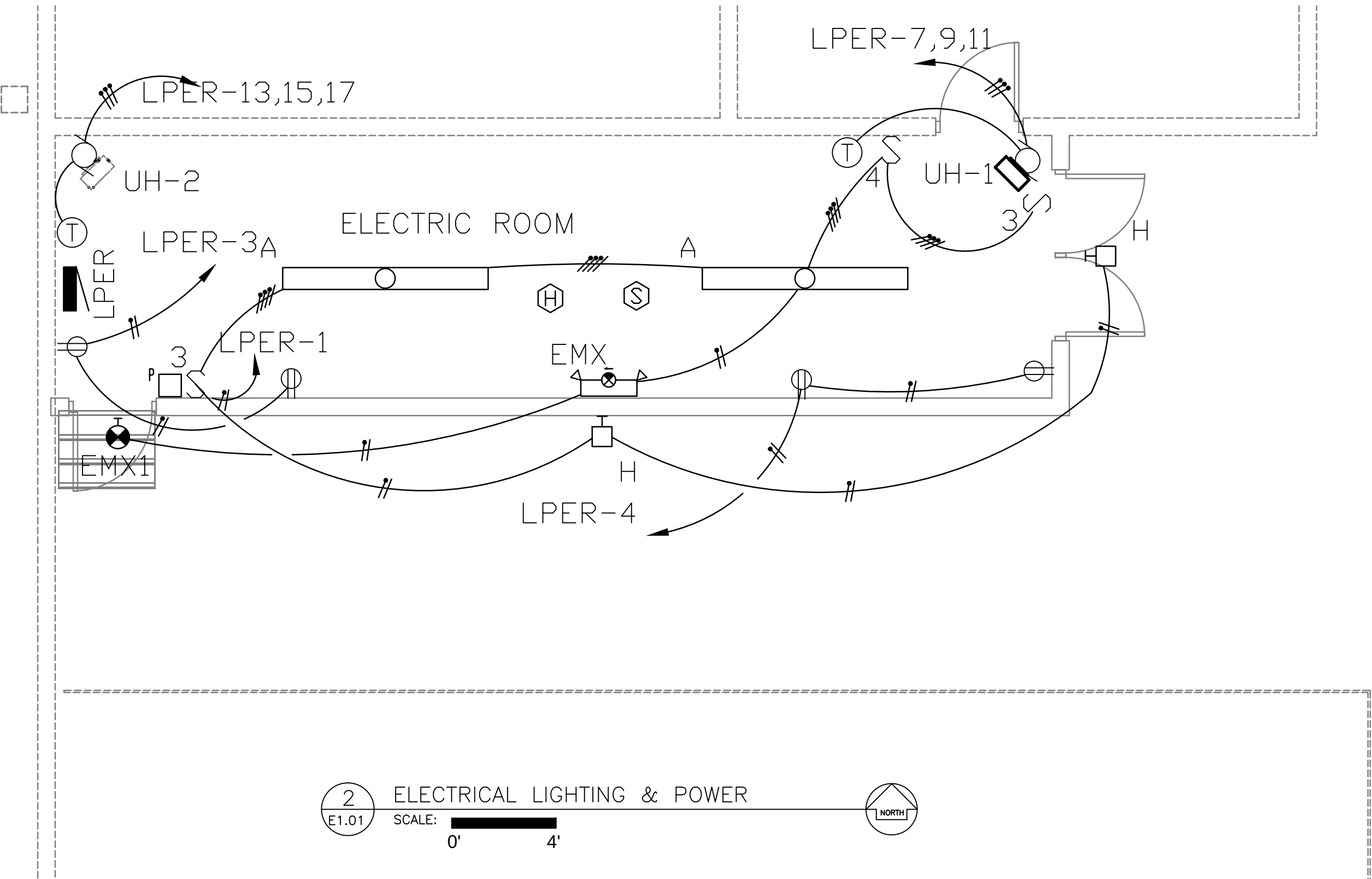
NOTES:
1. HONEYWELL, HEATING ONLY, THERMOSTAT BY ELECTRICAL CONTRACTOR. MOUNT AT 60"
2. MOUNT HEATER AT 96" AFF TO BOTTOM OF UNIT. MAINTAIN CLEARANCE FROM ELECTRICAL EQUIPMENT & CONDUITS.

ELECTRICAL TRANSFORMER SCHEDULE								
TAG	PRIMARY				SECONDARY			NOTES
	KVA	CURRENT FLA	RATING	PROTECTION	VOLTAGE	CURRENT FLA	RATING	
T-X	37.5	45.0		40	480/3/60	104.0	100	208/3/60

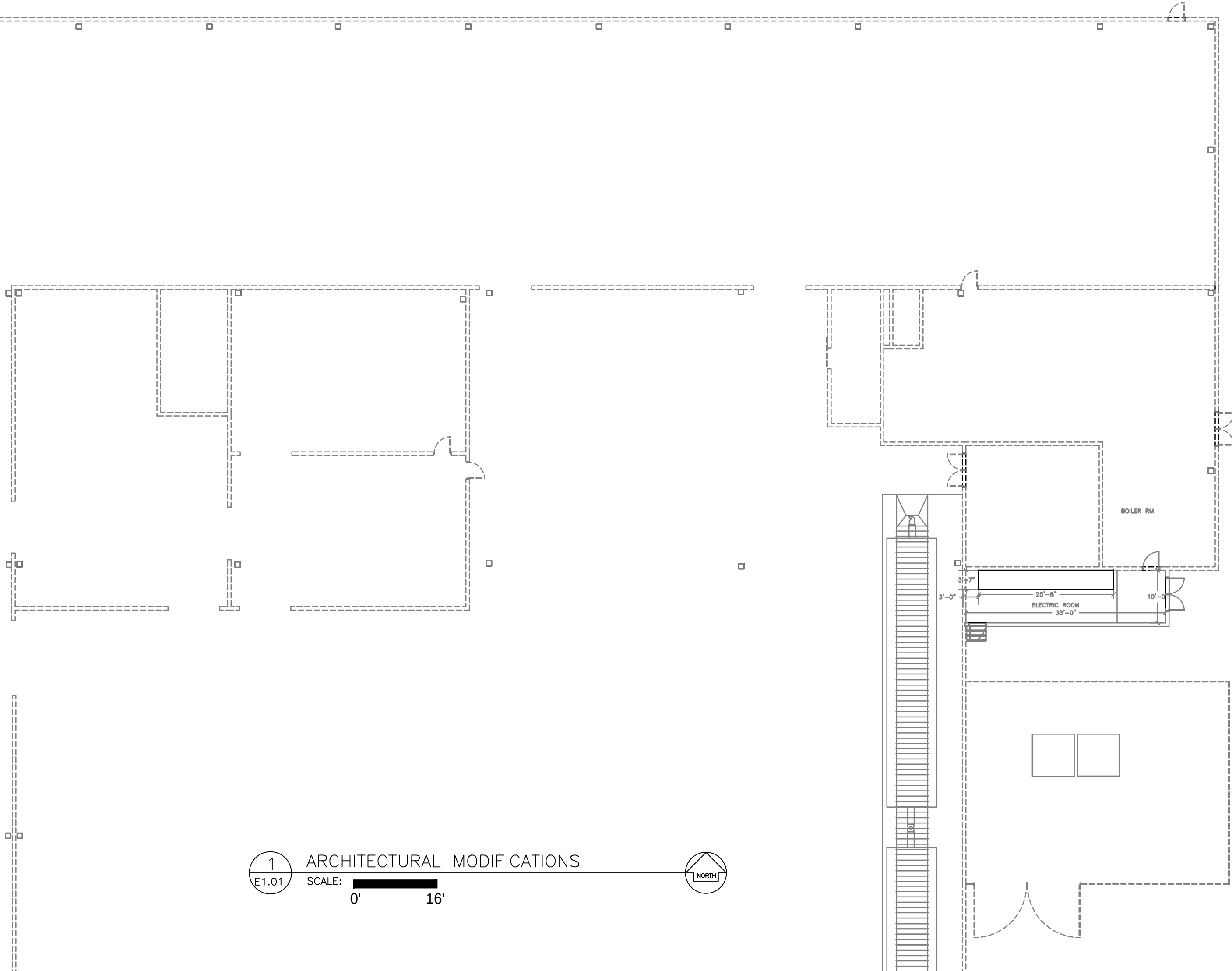
LIGHT FIXTURE SCHEDULE										
Quantity	KEY	ID	DESCRIPTION	ELECTRICAL DATA		LAMP DATA		BASIS OF DESIGN		NOTES
				VOLTAMP	VOLTAGE	QTY	WATT	MANUFACTURER	CATALOG NUMBER	
2	☐	A	SURFACE MOUNT	130	120	4	32	COLUMBIA	KL8-432-ST-4E-U	1
1	⚡	EMX	COMBINED EMERGENCY EXIT	2	120	1	2	DUALLITE	HCX-U-R-W-03L-RC12	1
1	⚡	EMX1		5	120	1	5	DUALLITE	-RC12	1,4
2	☐	H	WALL PACK	50	120	1	50	HUBBELL	TRP-30L-4K-053-3-120-DB-PC	2

NOTES:
1. PENDANT MOUNT AT 12' AFF, STEMS BY CONTRACTOR.
2. MOUNT AT 12' ABOVE GRADE, WITH PHOTO CELL.

GENERAL NOTES	
1.	COORDINATE LOCATION OF FIXTURES WITH EQUIPMENT.



3 ARCHITECTURAL MODIFICATIONS ISOMETRIC VIEW
EA101 SCALE: NTS



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PROJECT: FOSBER CORRUGATOR UPGRADE
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TITLE: ELECTRICAL ROOM MODIFICATIONS

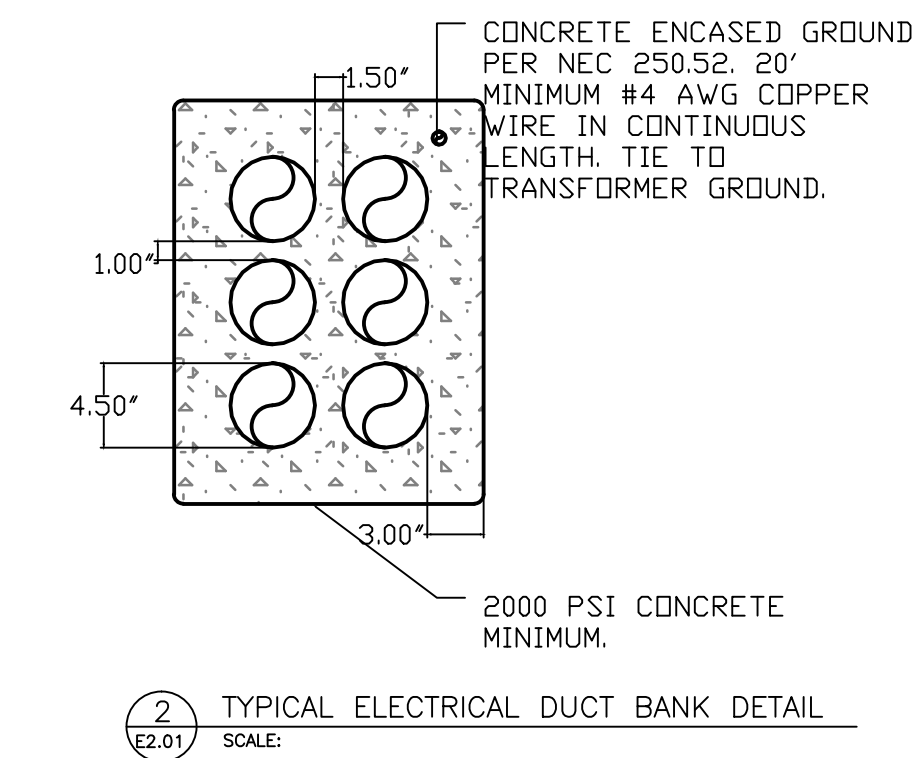
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DUCT BANK GENERAL NOTES

- USE GRS (GALVANIZED RIGID STEEL) OR PVC SCHEDULE 40 FOR UNDERGROUND CONDUIT AND DUCT BANK.
- CONCRETE ENCASMENT SHALL BE 2000 PSI.
- RED COLORED CONCRETE ENCASMENT SHALL USE A RED PIGMENT INTEGRALLY MIXED INTO THE CONCRETE. DRY SHAKE OR BROADCAST COLORING AGENTS ARE NOT TO BE USED.
- USE GRS (GALVANIZED RIGID STEEL) FOR ALL OFFSETS AND BENDS. TAPE ALL UNDERGROUND GRS CONDUIT WITH 10 MIL PVC TAPE, HAL LAPPED OR COAT WITH A BITUMASTIC COMPOUND.
- USE PVC SPACERS AND MOUNTS FOR SUPPORT AND SPACING OF THE CONDUITS. DO NOT USE CONCRETE BLOCKS OR OTHER MEANS TO SUPPRY AND SPACE CONDUITS THAT ARE TO RECEIVE CONCRETE ENCASMENT.
- A METALLIC BACKED MARKING TAPE SHALL BE INSTALLED 12" ABOVE ALL UNDERGROUND CONDUITS AND DUCT BANKS.
- INSTALL DUCT BANK A MINIMUM OF 24" BELOW GRADE.



KEY NOTES

- EXISTING CONDUIT FEEDING CIRCUITS FROM EXISTING MAIN SWITCHBOARD AND THAT ARE BEING RELOCATED TO BE FED FROM NEW PANEL PP3. CONDUITS MAY BE REUSED AT THE DISCRETION OF THE CONTRACTOR. CONDUITS NOT USED SHALL BE REMOVED. REUSED CONDUITS SHALL BE PAINTED TO MATCH EXISTING LOCATION.
- FIRE PUMP CONDUITS ABOVE GRADE SHALL BE ALUMINUM.
- N/A
- FIRE PUMP FEED. VERIFY PATHWAY AROUND BUILDING. INTERCEPT EXISTING FIRE PUMP FEED FROM INSIDE BUILDING ON NORTH WALL. APPROXIMATELY 9' ABOVE GRADE. PROVIDE LOCKABLE, 1200A, INTERCEPT CONDUIT AND MAKE APPROPRIATE SPLICES TO HAVE CONTINUOUS FEED TO FIRE PUMP.
- INSTALL 1200A, NEMA 3R DISCONNECT ON EXTERIOR WALL WITH LOCK ON CAPABILITY. PROVIDE TAMPER SWITCH CONTACT AND CONNECT TO FIRE ALARM SYSTEM AS TROUBLE ALARM.
- TRIAD GROUND. PROVIDE (3) 10"x5/8" GROUND RODS 10' APART. CONNECT WITH # 4/0 COPPER CONDUCTOR TO TRANSFORMER GROUND. VERIFY LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
- STORM COPPER COMPONENTS SCGB-7 4"x16' GROUND BAR ON STANDOFFS. VERIFY LOCATION WITH ENGINEER PRIOR TO ROUGH-IN. TIE GROUND BARS TOGETHER WITH 3/0 CU AND TIE TO BUILDING GROUND.
- BOILER WATER CONTROL PANEL. RELOCATE FROM CURRENT LOCATION AT NEW DOOR WEST TO CORNER. VERIFY LOCATION WITH OWNER'S REP PRIOR TO ROUGH-IN. FEED FROM PANEL LPER

GENERAL NOTES

- CONDUIT RUNS ARE SHOWN FOR GENERAL REFERENCE. CONTRACTOR MAY ROUTE CONDUITS TO PROVIDE THE MOST DIRECT ROUTE. CONTRACTOR SHALL PROVIDE A LAYOUT OF ALTERNATE CONDUIT RUNS TO THE ENGINEER PRIOR TO ROUGH-IN.
- PHASE 1 DOES NOT INCLUDE PROVIDING PP1, PP2 AND ALL EQUIPMENT FED BY THOSE PANELS. THOSE ELEMENTS WILL BE PART OF PHASE 2. PP3 IS PART OF PHASE 1 AND SHALL BE INSTALLED COMPLETE. .

SERVICE ENTRANCE CONDUIT NOTES

- SERVICE ENTRANCE CONDUITS TO RISE BEHIND SWITCHGEAR. ORIENT SWITCHGEAR SUCH THAT THE MAIN SWITCH SECTIONS ALIGN WITH THE OPENING BETWEEN THE RIBS OF THE WALL BEHIND CONDUITS. PROVIDE A BOX TO FILL THE CAVITY BEHIND FROM 24" AFF TO THE TOP OF THE SWITCHGEAR. PROVIDE A TOP COVER TO COVER THE TOP OF THAT SECTION OF SWITCHGEAR AND THE BOX BEHIND.
- BRING CONDUCTORS UP THROUGH BOX BEHIND AND INTO TOP OF GEAR. IF NECESSARY EXTEND THE TOP OF THE SWITCHGEAR AND BOX TO ACCOMMODATE BENDING RADIUS OF CONDUCTORS. VERIFY CODE COMPLIANCE FOR AMOUNT OF CONDUCTORS WITHIN THE BUILDING.
- AFFIX CONDUITS SOLIDLY TO BOTTOM OF BOX. BOX TO BE MOUNTED SOLIDLY TO WALL STRUCTURE. BACK OF SWITCHGEAR TO FIT TIGHT AGAINST FORWARD EDGE OF BOX.
- BOX TO BE PAINTED TO MATCH SWITCHGEAR.
- CONDUIT TO BE ROUTED THROUGH BOX MAINTAINING GROUPING FROM CONDUITS AND ANCHORED AS REQUIRED BY CODE AND TO MAINTAIN INTEGRITY OF CONDUCTORS AND GOOD WORKMANSHIP.



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PROPOSED ELECTRICAL DISTRIBUTION

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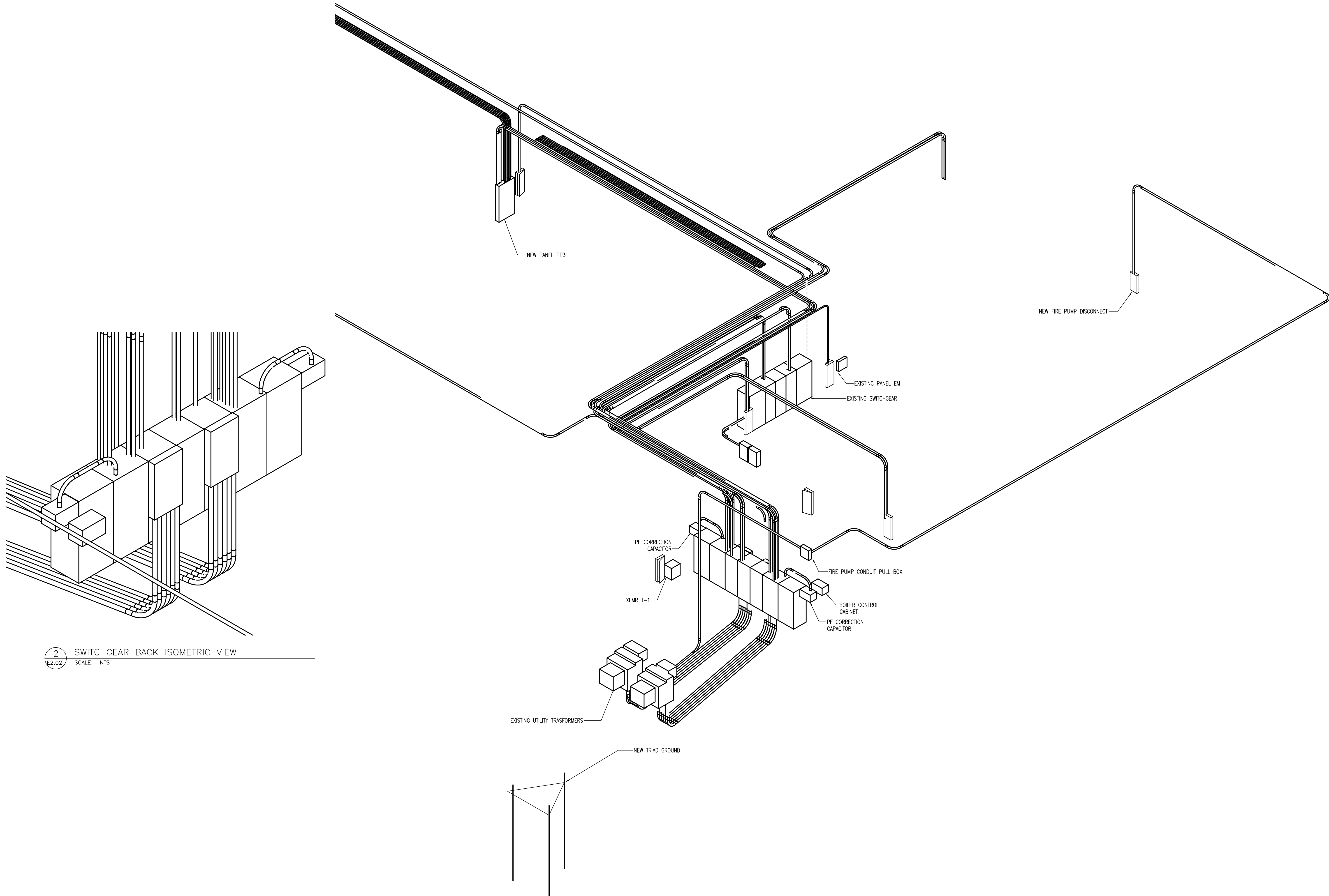
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2 SWITCHGEAR BACK ISOMETRIC VIEW
E2.02 SCALE: NTS

1 PROPOSED ELECTRICAL DISTRIBUTION ISOMETRIC
E2.02 SCALE: NTS

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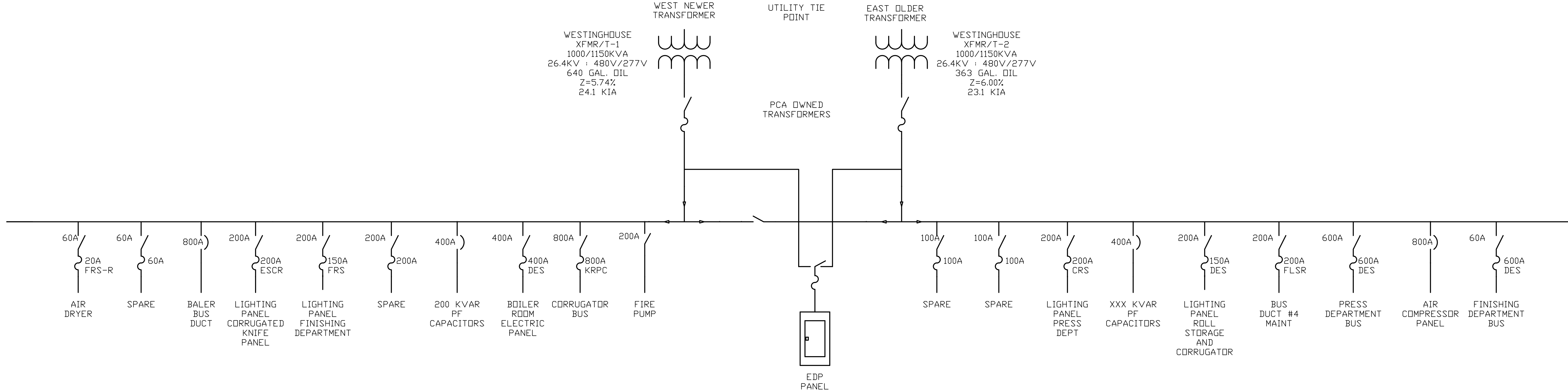
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PANEL PP5													
VOLTAGE (L-N):				277				ENCLOSURE TYPE: -----					
VOLTAGE (L-L):				480				MOUNTING: SURFACE					
PHASES, WIRES:				3 ϕ 4 W				AIC RATING (A): 0					
MINIMUM BUS CAPACITY (A):				800 A				NOTES: -----					
MAIN O.C. DEVICE (A):				800 A									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)						POLE	TRIP AMPS	DESCRIPTION	CKT NO
				A		B		C					
1,3,5	AIR DRYER	20	3	4000	0					3	20	MAIN	2,4,6
1,3,5	AIR DRYER	20	3			4000	0			3	20	MAIN	2,4,6
1,3,5	AIR DRYER	20	3					4000	0	3	20	MAIN	2,4,6
7,9,11	PANEL PP4	100	3	0	0					3	20	MAIN	8,10,12
7,9,11	PANEL PP4	100	3			0	0			3	20	MAIN	8,10,12
7,9,11	PANEL PP4	100	3					0	0	3	20	MAIN	8,10,12
13,15,17	STARCH SILO (FUTURE)	30	3	6000	50000					3	400	AIR COMPRESSOR 1	14,16,18
13,15,17	STARCH SILO (FUTURE)	30	3			6000	50000			3	400	AIR COMPRESSOR 1	14,16,18
13,15,17	STARCH SILO (FUTURE)	30	3					6000	50000	3	400	AIR COMPRESSOR 1	14,16,18
19,21,23	UTILITY XFMR FANS (FUTURE)	20	3	0	83000					3	400	AIR COMPRESSOR 2	20,22,24
19,21,23	UTILITY XFMR FANS (FUTURE)	20	3			0	83000			3	400	AIR COMPRESSOR 2	20,22,24
19,21,23	UTILITY XFMR FANS (FUTURE)	20	3					0	83000	3	400	AIR COMPRESSOR 2	20,22,24
25,27,29	-----	20	3	0	0					3	20	-----	26,28,30
25,27,29	-----	20	3			0	0			3	20	-----	26,28,30
25,27,29	-----	20	3					0	0	3	20	-----	26,28,30
				CONNECTED LOAD PHASE TOTALS (VA)									
				143000		143000		143000					
				CONNECTED LOAD (KVA)		DEMAND FACTOR		DEMAND LOAD (KVA)		DEMAND LOAD		491.3 KVA	
Motors				180.0		1.00		180.0		SPARE CAPACITY		173.8 KVA	
Motors (Largest)				249.0		1.25		311.3		SPARE CAPACITY		209.1 AMPS	
										SPARE CAPACITY		26 %	
										PHASE BALANCE			
										A TO B		100 %	
										B TO C		100 %	
										C TO A		100 %	
TOTAL:				429.0				491.3					
LOAD (AMPS):				516.0				590.9					



GENERAL NOTES

1. ALL CIRCUITS ON THE EXISTING SWITCHGEAR WILL BE TRANSFERRED TO THE NEW SWITCHGEAR. IN GENERAL THE LOADS ON THE INDIVIDUAL SWITCHGEAR WILL BE TRANSFERRED TO THE SAME SECTIONS ON THE NEW SWITCHGEAR SUCH THAT THE LOADS ON THE TRANSFORMERS WILL REMAIN THE SAME.

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6247 SOUTH PINE STREET
BURLINGTON, WISCONSIN 53105
TITLE:
EXISTING ELECTRICAL 1-LINE DIAGRAM

REVISIONS	

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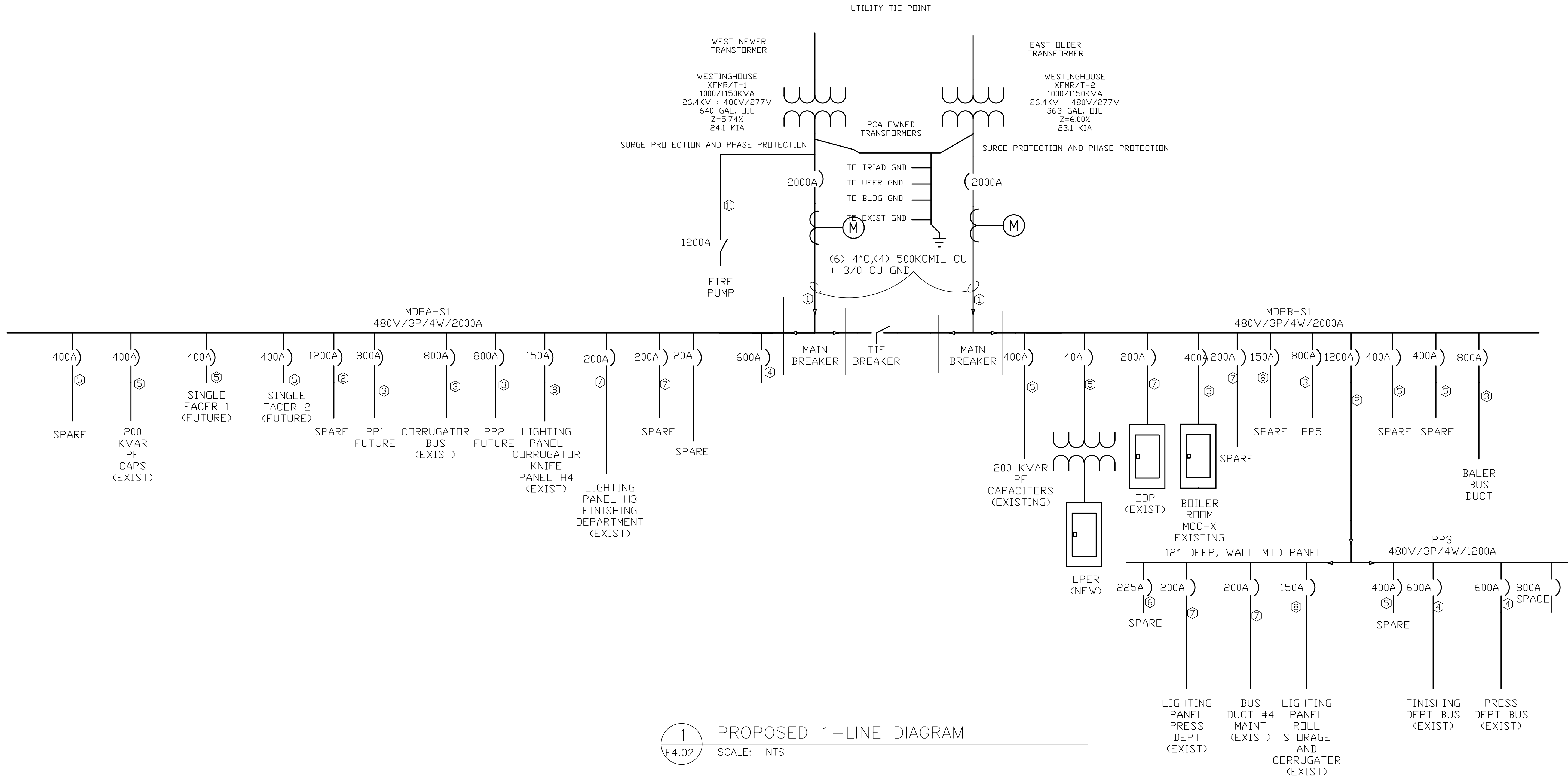
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E4.01



1 PROPOSED 1-LINE DIAGRAM
E4.02 SCALE: NTS

1 CONDUIT SIZING

1. 2000A	(6) 4"C,(4) 500KCMIL CU + 3/0 CU GND
2. 1200A	(3) 4"C, (4) 600KCMIL CU + 3/0 CU GND
3. 800A	(2) 4"C, (4) 500KCMIL CU + 1/0 CU GND
4. 600A	(2) 3"C, (4) 300KCMIL CU + #1 CU GND
5. 400A	(1) 3 1/2"C, (4) 500KCMIL CU + #3 CU GND
6. 225A	(1) 2 1/2"C, (4) #4/0 CU + #4 GND
7. 200A	(1) 2"C, (4) #3/0 CU + #6 GND
8. 150A	(1) 2"C, (4) #1/0 CU + # 6 GND
9. 100A	(1) 1 1/4"C, (4) #3 CU + #8 GND
10. 60A	(1) 1"C, (4) #6 CU + #10 GND
11. 200A	(1) 2"C, (3) #3/0 CU + #6 GND

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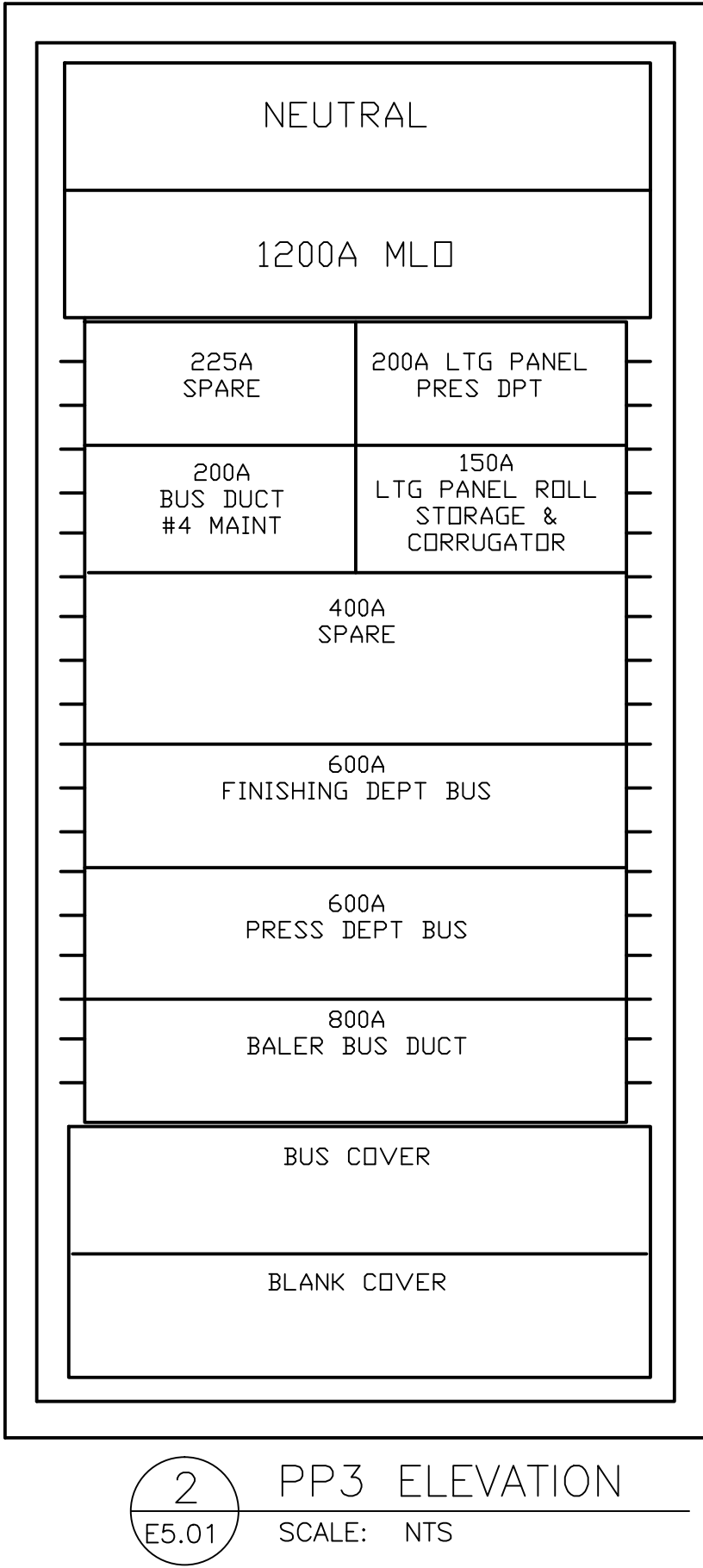
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- GENERAL NOTES
1.

SWITCHBOARD SECTIONS TO BE MOUNTED ON 4" HOUSEKEEPING PAD EXTENDING 4" IN FRONT OF SWITCHGEAR AND EXTENDING FULL WIDTH OF FUTURE PROJECTED SECTIONS.
2.

CONTRACTOR SHALL READJUST BREAKER LOCATIONS AD NECESSARY TO ADD ADDITIONAL 800A BREAKER TO MDPB-1.

