



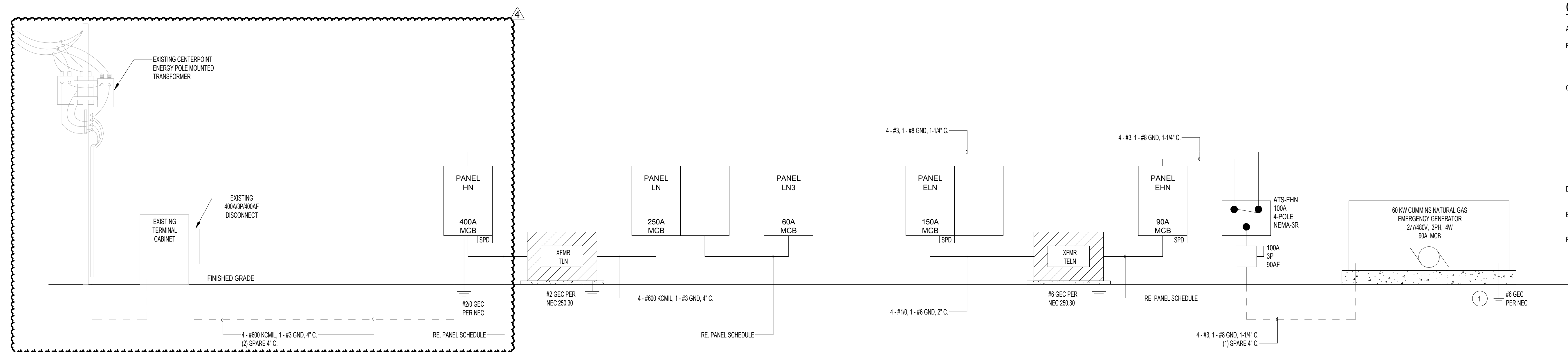
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PROJECT INFORMATION:

MAINTENANCE SHOP BLDG
2555 WASHINGTON AVE
HOUSTON, TEXAS 77007

GENERAL ONELINE NOTES:

- A. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
- B. PROVIDE AN ENGRAVED, PHENOLIC LABEL PUNCHED OR DRILLED FOR SCREW MOUNTING TO SERVICE EQUIPMENT. THE LABEL SHALL INDICATE THE MAXIMUM AVAILABLE FAULT CURRENT AT THE TIME OF INSTALLATION, AND THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED. THE LABEL SHALL BE 2"X2" IN SIZE WITH 3/8" MINIMUM LETTER HEIGHT WITH BLUE LETTERING ON A WHITE BACKGROUND.
- C. MANUFACTURER OF ELECTRICAL SWITCHGEAR SHALL PROVIDE AN ARC FAULT STUDY AND COORDINATION STUDY FOR THE ENTIRE ELECTRICAL SYSTEM IN ORDER TO SET BREAKERS. REFER TO SPECIFICATIONS. MANUFACTURER SHALL ALSO PROVIDE A FAULT CURRENT STUDY FOR THE ENTIRE ELECTRICAL SYSTEM IN ORDER TO SELECT INTERRUPTING RATINGS OF ALL CIRCUIT BREAKERS, DISTRIBUTION PANELBOARDS, PANELBOARDS, ETC. A SERIES RATED SYSTEM SHALL BE USED. SUBMIT INTERRUPTING RATING FOR ALL ELECTRICAL GEAR IN SUBMITTALS. CONTRACTOR SHALL SUPPLY WITH THEIR SUBMITTALS ON ALL NEW EQUIPMENT THE MANUFACTURERS U.L. DATA LISTING THE SERIES RATING OF ALL EQUIPMENT. THIS SWITCHBOARD AND ALL NEW EQUIPMENT CONNECTED DOWNSTREAM SHALL BEAR LABELS INDICATING "SERIES RATED EQUIPMENT" ON THEIR EXTERIOR AS INDICATED IN THE SPECIFICATIONS. CONTRACTOR SHALL INSTRUCT THE MANUFACTURER TO INCLUDE IN THEIR SUBMITTALS ALL TRIP CURVES AND ALL LITERATURE INDICATING THE INTERRUPTING RATING OF THE EQUIPMENT TO BE SUPPLIED.
- D. INSTALLATION SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODE ENFORCEMENT AGENCIES. INSTALLATION SHALL COMPLY WITH BUT NOT LIMITED TO NECA, IECQ, NEC, ETC.
- E. REFER TO ELECTRICAL UTILITY COMPANY TERMS AND CONDITIONS PACKAGE FOR INSTALLATION AND CONNECTION REQUIREMENTS. INSTALL ALL ELECTRICAL EQUIPMENT PER UTILITY COMPANY STANDARDS.
- F. ALL EQUIPMENT SHALL BE OUTDOOR RATED, NEMA 3R, UNLESS NOTED OTHERWISE.



ELECTRICAL RISER DIAGRAM
N.T.S. | 1

LIGHTING FIXTURE SCHEDULE

FIXTURE TAG	MANUFACTURER	MODEL	VOLTAGE	BALLAST	NO. OF LAMPS	LAMP TYPE	LOAD (VA)	MOUNTING	REMARKS
A	DAY-BRITE	2-FG-G-43L-840-4-D-UNV	277 V	ELECTRONIC <10% THD	-	LED	36	RECESSED	2x4" LED DIRECT/INDIRECT.
D2	ELEMENT LIGHTING	E4S-L-X-X-D-N-277/E4S-L-F-L-X	277 V	ELECTRONIC <10% THD	-	LED	26	RECESSED	4" LED SQUARE DOWNLIGHT. CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDER.
F	DAY-BRITE	D-W-A-E-43L-840-4-UNV	277 V	ELECTRONIC <10% THD	-	LED	38	CHAIN	4" INDUSTRIAL STRIP FOR WET LOCATION.
F1	DAY-BRITE	D-W-A-E-43L-840-4-UNV	277 V	ELECTRONIC <10% THD	-	LED	38	SURFACE	SAME AS F.
F2	PINNACLE	E4A-35-4-FL-U-OLS1-1-0	277 V	ELECTRONIC <10% THD	-	LED	38	RECESSED	4" RECESSED LINEAR. CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDERING.
M	HUBBELL LIGHTING	60L-G-08-C1-40K-D095-NDM-1C-UNV	277 V	ELECTRONIC <10% THD	-	LED	27	SURFACE	4" LED SLOT.
S1	VISIONAIRE LIGHTING	VSX-1-T3-#-4K-5-AM-X	480 V	ELECTRONIC <10% THD	1	LED	100	POLE	LED WALL SCONCE. WET LOCATION. CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDER.
W	GARDCO	101L-16L-1000-NW-G1-3-UNV	277 V	ELECTRONIC <10% THD	-	LED	55	SURFACE	SINGLE FACE EXIT SIGN. DIE CAST ALUMINUM CONSTRUCTION. RED TEXT AND CHEVRONS. BRUSHED ALUMINUM FINISH. STD. TESTING AND SELF DIAGNOSTICS. 10YR MAINT FREE BATTERY
X1	EMERGI-LITE	BA-X-1-R	277 V	ELECTRONIC <10% THD	-	LED	0	SURFACE	

TRANSFORMER SCHEDULE

Mark	kVA RATING	PRIMARY SIDE VOLTAGE	SECONDARY SIDE VOLTAGE	MOUNTING	REMARKS
TELN	45	480V, 3PH.	208Y/120V, 3PH., 4W	PAD	NEMA 3R
TLN	75	480V, 3PH.	208Y/120V, 3PH., 4W	PAD	NEMA 3R

SPD SCHEDULE

MARK	MANUFACTURER	MODEL	ACCUGUIDE CABLE SIZE
SPD1	LIEBERT	560YC12ANCG1S	5 #6, 1 1/2" C.
SPD2	LIEBERT	510YC08ANAJ2S	5 #10, 1 1/2" C.
SPD3	LIEBERT	510YA08ANAJ2S	5 #10, 1 1/2" C.

GENERAL NOTES:

- A. CONTRACTOR SHALL CHECK THE BUILDING ELECTRICAL REQUIREMENT, ARCHITECTURAL FINISHES AND REGARDLESS OF THE CATALOG NUMBER PREFIXES AND SUFFIXES SHOWN, FURNISH FIXTURES WITH THE PROPER TRIM, HANGERS, BALLASTS, VOLTAGE RATINGS, AND OTHER MISCELLANEOUS APPURTENANCES TO PROPERLY COORDINATE WITH SAID FIXTURES.
 - B. CONTRACTOR SHALL ALSO CHECK THE TYPE OF CEILING TO BE INSTALLED IN EACH ROOM AND VERIFY THA THE RECESSED LIGHT FIXTURES ARE PROPER FOR THE TYPE OF CEILING TO BE INSTALLED BEFORE ORDERING FIXTURES.
 - C. SUBMISSION OF VENDOR DRAWINGS FOR APPROVAL SHALL BE CONSTRUED THAT THE CONTRACTOR HAS VERIFIED THAT THE VOLTAGE AND CEILING SYSTEM HAS BEEN VERIFIED AND THAT ALL REQUIRED APPURTENCES HAVE BEEN INCLUDED.
 - D. EMERGENCY BATTERY PACK SHALL BE EQUAL TO BODNE B50 WITH MINIMUM OF 1100 LUMENS, 90 MINUTES OF OPERATION. FOR MULTIPLE BALLASTED FIXTURES THE CENTER LAMP(S) BALLAST SHALL BE CONNECTED TO THE BATTERY PACK.
 - F. PRODUCT CATALOG NUMBERS WERE PROVIDED BY MANUFACTURERS REPRESENTATIVES AND ARE CURRENT AS OF THE ISSUE DATE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING FIXTURES WHICH FULLY MEET THE INTENT OF THE LIGHT FIXTURE SCHEDULE. ALL FLUORESCENT FIXTURES SHALL HAVE PAINT ELECTROSTATICALLY APPLIED AT THE FACTORY. AFTER FABRICATION, (PAF) ALL FLUORESCENT FIXTURES SHALL HAVE <10% THD ELECTRONIC BALLASTS.
- RECESSED LUMINAIRES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE SEALED TO LIMIT AIR LEAKAGE BETWEEN CONDITIONED AND UNCONDITIONED SPACES. ALL RECESSED LUMINAIRES SHALL BE IC-RATED AND LABELED AS MEETING ASTM E 283 WHEN TESTED AT 1.57 PSF (75 PA) PRESSURE DIFFERENTIAL WITH NO MORE THAN 2.0 CFM (0.944 US) OF AIR MOVEMENT FROM THE CONDITIONED SPACE TO THE CEILING CAVITY. ALL RECESSED LUMINAIRES SHALL BE SEALED WITH A GASKET OR CALK BETWEEN THE HOUSING AND INTERIOR WALL OR CEILING COVERING.

Service Load Analysis

Load Description	Connected Load (KVA)	Demand Factor	Design Load (KVA)
Lighting	3.5 W/SQ. FT.	43.30 * 1.25 =	54.1
Receptacles	3 W/SQ. FT.	37.11 * 100%/50% =	23.6
General Equipment	3 W/SQ. FT.	37.11 * 1.00 =	37.1
Mechanical			
ACCU-1	5.00 * 1.00 =		5.0
ACCU-2	4.00 * 1.00 =		4.0
ACCU-3	3.00 * 1.00 =		3.0
Exhaust	1.00 * 1.00 =		1.0
HEATING	30.00 * 1.00 =		30.0
Plumbing			
Water heater	12.00 * 1.00 =		12.0
Site Equipment			
Gas Pumps	4.00 * 1.00 =		4.0
Well	12.00 * 1.00 =		12.0
Lift station	3.00 * 1.00 =		3.0
Total Load kVA:			188.8
480 V 3 PHASE			Total Load Amps: 227.1

Generator Load Analysis

Load Description	Connected Load (KVA)	Demand Factor	Design Load (KVA)
Lighting	2.00 *	1.25 =	2.5
Receptacles	5.00 *	1.00 =	5.0
IT Room	3.00 *	1.00 =	3.0
Gas Pumps	3/4 HP	2.00 * 1.00 =	2.0
Well Equipment	10 HP	12.00 * 1.00 =	12.0
Total Load kVA:			24.5
480 V 3 PHASE			Total Load Amps: 29.5

REV.	DESCRIPTION	DATE
1	Issue for Permitt/Construction	Sept 16 2017
2	Plan Check Comment Response #1	Oct 27 2017
3	Plan Check Comment Response #2	Nov 21 2017
4	Updated Construction Set	Dec 27 2017
	Revision 5	JUL 11 2018



MEP ENGINEERING • TECHNOLOGY
ENERGY MODELING • COMMISSIONING

SHEET CONTENTS :

**ELECTRICAL RISER
DIAGRAM**

SHEET NUMBER :

E-401

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