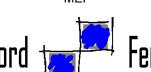


STRUCTURAL Bob D. Campbell & Company 4338 Belleview Rd Kansas City, Missouri 64111 816.531.4144



1730 Walnut Street Kansas City, Missouri 64108 1915 Frederick Avenue, St. Joseph, Missouri 64501 Phone: 816.221.1411 | Fax: 816.221.1429 LANKFORD | FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC. COPYRIGHT (2021 Project No. 21.6884.00 COA No. 2006001168

451 NW Murray Rd Renovation

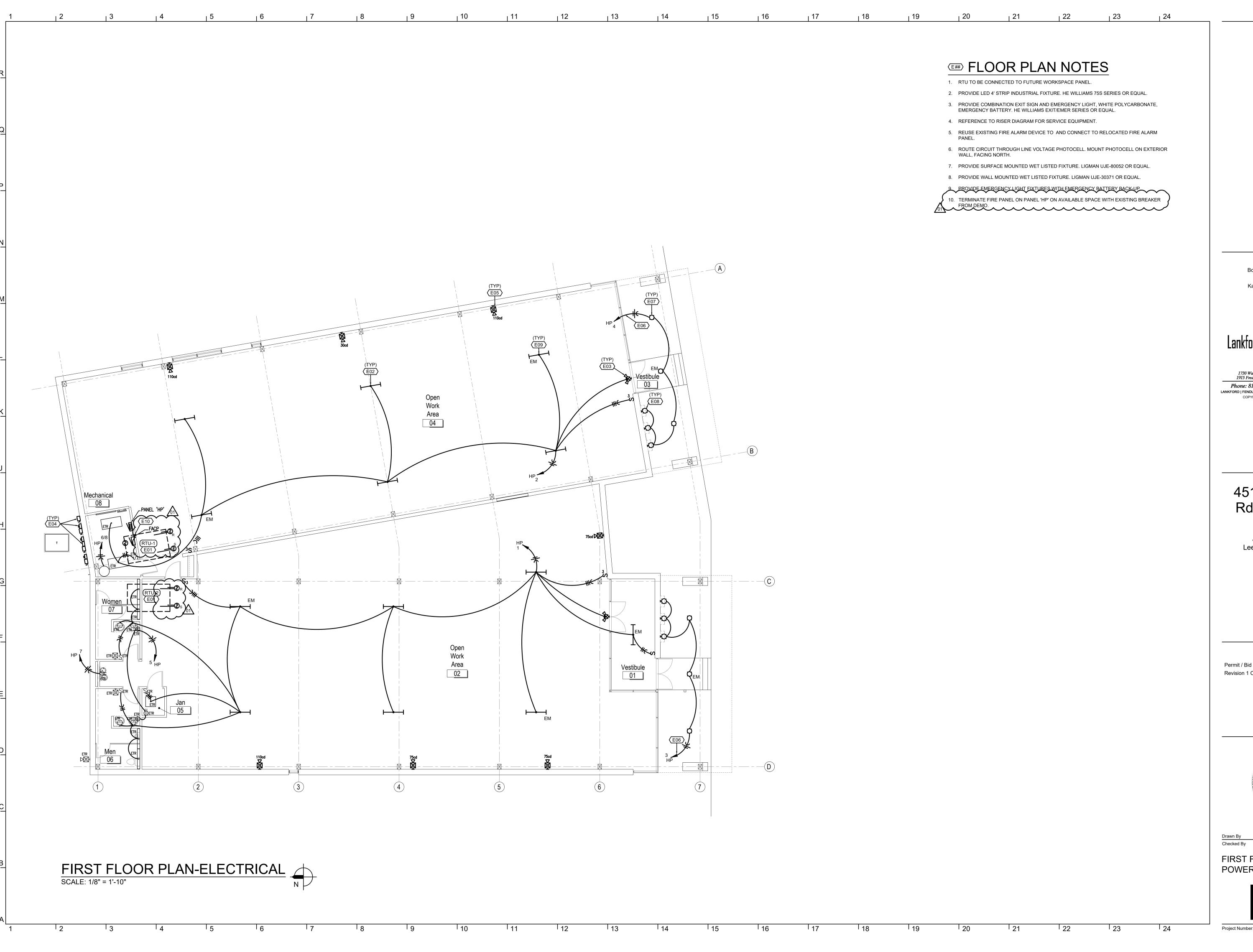
451 NW Murray Rd Lees Summit, MO 64081

ISSUED FOR:

29 OCT 2021 08 NOV 2021



FIRST FLOOR PLAN-**ELECTRICAL DEMOLITION**



stingerWalker

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ISSUED FOR:

Revision 1 City Comments

29 OCT 2021 08 NOV 2021



FIRST FLOOR PLAN-**POWER**



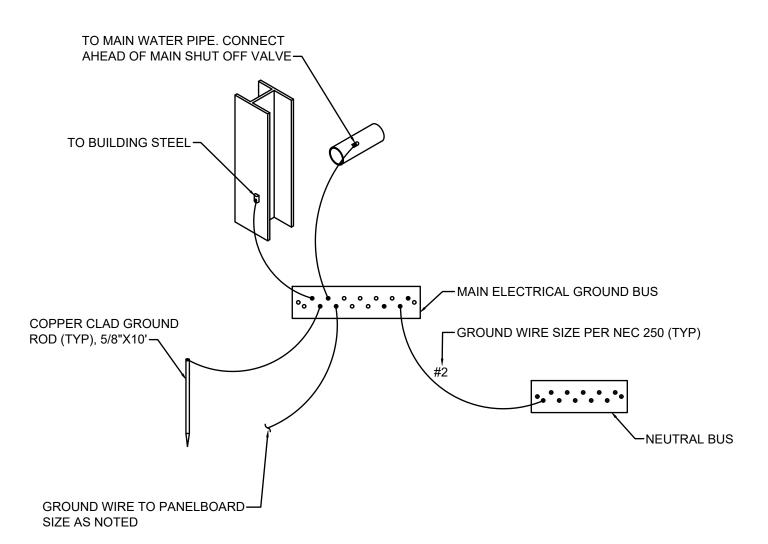
			NEW			PAN	ELBC	ARD	HP	SCH	EDULE									
	SEI	RVICE:	208/120 VOLT, 3-PHASE, 4- WIRE												R/	ATING:	22000 A	A.I.C.		
A			100 AMP												LOCA	ATION:	_			
	N	MAINS:	MCB / 100 AMP MAIN BREAKER						MOU	NTING:	SURFACE									
REV NOTE			LOAD	BRKF	₹	LOAD KVA					LOAD		BRKR		LOAD KVA			NOTE REV		
NO. NO.		CRT#	DESCRIPTION		AMP	Α	В	С	3PH	CRT#	DESCRIPTION		AMP	Α	В	С	3PH	NO.	NO.	
			LIGHTING SPACE ONE	1	20	0.4		_		2	LIGHTING SPACE TWO	1	20	0.4		•				
		3	EXTERIOR LIGHTING SPACE ONE	1	20		0.4			4	EXTERIOR LIGHTING SPACE TWO	1	20		0.4					
		5	RESTROOM/JANITOR RCPT	1	20		_	0.54		6	WATER HEATER	2	30			1.7				
		7	WATER FOUNTAIN RCPT	1	20	0.18		_		8				1.7						
		9	SPARE	1	20					10	SPARE	1	20							
		11	SPARE	1	20		_			12	SPARE	1	20							
		13	SPARE	1	20					14	SPARE	1	20]					
		15	SPARE	1	20					16	SPARE	1	20							
		17	SPARE	1	20					18	SPARE	1	20							
		19	SPARE	1	20]			20	SPARE	1	20] '					
		21	SPARE	1	20			1		22	SPARE	1	20							
		23	SPARE	1	20					24	SPARE	1	20							
		25		1	20		[26		1	20] '					
		27		1	20					28		1	20							
		29		1	20		,			30		1	20		,					
				٦	OTAL:	0.58	0.4	0.54	0			٦	ΓΟΤΑL:	2.1	0.4	1.7	0.0			
										0.58	0.4	0.54	0.0							
NC	NOTES:							KVA / PHASE TOTAL: 2.68 0.8			0.8	2.24	0.0							
	1										AMP / I	PHASE 1	ΓΟΤΑL:	22.3	6.7	18.7		-		
											TOTAL CONN	NECTED	LOAD:		5.72	KVA				
											TOTAL CONNECT	ED CUR	RENT:		15.88	AMPS				
											LIGHTS (D)	125%:		2.00	KVA				
											RECEPTACLES (D D	100%:		0.72	KVA				
	Ε	= EXIST	ING BREAKER/INDEX/LOAD (ESTIMATED)								RECEPTACLES (_	50%		0.00	KVA				
RE	ΞV:		,								LARGEST MOTOR LOAD (<u> </u>	125%:			KVA				
											CONTINUOUS LOAD (_	125%:			KVA				
											OTHER AND NON-CONTINUOUS LOADS (_	100%:			KVA				
GF	ENER	AL NOTI	Ξ:								TOTAL D	_				KVA				
0.			 CTOR & CONDUIT SIZING CHART FOR SIZ	ING OF	BRANC	ЭН						WER FA				% PF				
			TS AND OR FEEDERS AT OR BELOW 100 /		J. J. 1140						TOTAL DEMAN					AMPS				

BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART*											
OVERCURRENT PROTECTION DEVICE RATING (AMPS)	REQUIRED CONDUCTOR SIZE	EQUIPMENT GROUNDING CONDUCTOR SIZE	SINGLE PHASE 2 WIRE + GND. CONDUIT SIZE	SINGLE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 4 WIRE + GND. CONDUIT SIZE					
15	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"					
20	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"					
25	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"					
30	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"					
35	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"					
40	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"					
45	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"					
50	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"					
60	4 AWG	10 AWG	1"	1"	1"	1-1/4"					
70	4 AWG	8 AWG	1"	1"	1"	1-1/4"					
80	3 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"					
90	2 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"					
100	1 AWG	8 AWG	1-1/4"	1-1/2"	1-1/2"	1-1/2"					

- * = UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- * = UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL BRANCH CIRCUITS AND FEEDERS TO BE PROVIDED WITH A NEUTRAL WIRE.
- * = ALL CONDUCTORS SIZED ON THE POWER RISER DIAGRAM OR IN BRANCH CIRCUIT CONDUCTOR TABLE ARE BASED ON 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY OR CABLE. CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE NEC IF 4 OR MORE CONDUCTORS ARE PLACED IN A RACEWAY OR CABLE.

NOTES: 1. ALL WIRING SHALL BE TYPE THHN/THWN

- 2. MAIN GROUND RODS ARE TO BE LOCATED AT SERVICE ENTRANCE WITH SIZE AND QUANTITY PER SPECIFICATIONS.
- 3. EQUIPMENT GROUNDING CONDUCTORS SMALLER THAN 6 AWG SHALL BE PROTECTED PER NEC 250.120(C)



MAIN SERVICE ENTRANCE GROUNDING DETAIL NO SCALE

GENERAL NOTES (TYPICAL ALL SHEETS)

- A. ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY THE CONTRACTOR.
- B. NEW CIRCUITRY SHOWN FOR NEW/EXISTING POWER AND LIGHTING IS DIAGRAMMATIC AND IS INTENDED TO SHOW WHICH DEVICES ARE TO BE GROUPED ON INDIVIDUAL CIRCUITS. EXISTING WIRING THAT CONFORMS TO THE INTENT OF THE DRAWINGS MAY BE USED.
- C. PROVIDE UPDATED, TYPEWRITTEN PANELBOARD DIRECTORY FOR EACH PANELBOARD WHICH CIRCUITS HAVE BEEN ADDED TO OR MODIFIED.
- D. CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW
- E. EXISTING RECEPTACLES AND SWITCHES TO REMAIN EXCEPT THOSE THAT ARE CHIPPED, BROKEN OR DAMAGED IN ANY OTHER WAY SHALL BE REPLACED TO MATCH EXISTING.
- F. SUPPORT ALL LIGHT FIXTURES WITH A MINIMUM OF (4) 12 GA. HANGER WIRES TO STRUCTURE ABOVE.
- G. CONNECT EXIT AND EMERGENCY LIGHTS TO HOT LEG, NOT SWITCH LEG.
- H. CLEAN AND CHECK ALL EXISTING LIGHT FIXTURES FOR PROPER OPERATION AND REPLACE ANY BROKEN SOCKETS, LENS, LOUVERS, OR DEFECTIVE BALLAST. RELAMP ALL EXISTING FIXTURES WITH NEW LAMPS.
- I. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN BID ALL COSTS ASSOCIATED WITH FIRE ALARM MODIFICATIONS. THIS WORK SHALL INCLUDE POWER EXTENDER PANEL, SMOKE DETECTORS, HORN/STROBES, PULL STATIONS, REMOTE INDICATING LIGHTS AND ANY OTHER FIRE ALARM WORK SHOWN ON PLANS. ALL WIRING, PLENUM RATED CABLING, BETWEEN DEVICES SHALL BE INCLUDED IN WORK TO PROVIDE AN OPERATIONAL EXTENSION OF THE EXISTING FIRE ALARM SYSTEM.
- J. CONDUIT SHALL BE USED FOR CONDUCTORS WHERE REQUIRED BY N.E.C.
- K. CONTRACTOR SHALL CALCULATE VOLTAGE DROP AND SIZE WIRE ACCORDINGLY. PER
- INSTALL FIRE ALARM DEVICES THAT COMPLY WITH APPLICABLE CODES. INCLUDING BUT NOT LIMITED TO THE FAIR HOUSING ACT, NFPA, UL, ADA, IBC OR ANY OTHER AUTHORITIES HAVING JURISDICTION.
- M. FIRE ALARM CONTRACTOR IS RESPONSIBLE OF TESTING AND VERIFYING THAT THE AUDIBILITY OF THE FIRE ALARM SYSTEM MEETS A MINIMUM OF 15 DBA ABOVE AMBIENT NOISE LEVELS. AFTER INSTALLATION AND BEFORE CERTIFICATE OF OCCUPANCY. ADD HORNS WHERE REQUIRED TO MAINTAIN MINIMUM LEVELS.

ELECTRICAL SYMBOLS

BRANCH CIRCUIT CONCEALED IN CEILING OR WALL. ARROWS INDICATE HOMERUNS TO PANEL. ALL CONDUCTORS ARE MINIMUM NO.12 UNLESS NOTED OTHERWISE.
PHASE CONDUCTORS
NEUTRAL CONDUCTOR
SWITCH-LEG AND OR TRAVELER
GROUND CONDUCTOR

LP1-10 PANEL - BREAKER NUMBER (IDENTIFICATION)

1/3, 1/3/5 INDICATES X/X= 2-POLE C.B., X/X/X = 3-POLE C.B.

CONDUIT CONCEALED IN CEILING OR WALL WITH THREE CONDUCTORS:
1-PHASE; 1-NEUTRAL; 1-GROUND WIRE, MINIMUM NO.12 WIRE UNLESS
OTHERWISE SPECIFIED ON DRAWINGS.

COMBINATION EXIT SIGN/EMERGENCY LIGHTING UNIT - CEILING OR WALL MOUNTED. SHADED SIDE(S) INDICATES FACE SIDE(S) OF EXIT.

A A 2x2 LIGHT FIXTURE, LETTER DENOTES FIXTURE TYPE, REFER TO SCHEDULE

STRIP FIXTURE, LETTER DENOTES FIXTURE TYPE, REFER TO SCHEDULE

OR ON WALL WASH OR RECESSED CEILING LIGHT FIXTURE

WALL MOUNTED LIGHT FIXTURE, SIZE AND TYPE AS NOTED

INDIRECT/DIRECT LIGHT FIXTURE, SIZE AND TYPE AS NOTED

208Y/120V OR 120/240V PANELBOARD (SURFACE) TOP MOUNTED 6'-0" AFF

208Y/120V OR 120/240V PANELBOARD (FLUSH) TOP MOUNTED 6'-0" AFF

SURFACE MOUNTED EQUIPMENT, TYPE AS INDICATED ON DRAWINGS

FLUSH MOUNTED EQUIPMENT, TYPE AS INDICATED ON DRAWINGS

DISCONNECT SWITCH, SIZE AND TYPE AS NOTED TOP MOUNTED 5'-0" AFF

S SINGLE POLE SWITCH. TOP OF DEVICE BOX AT +4'-0" AFF

S

THREE-WAY SWITCH. TOP OF DEVICE BOX AT +4'-0" AFF

DUPLEX RECEPTACLE. +1'-6" AFF OR AS NOTED

DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP

 ⊕ WP
 GFI DUPLEX RECEPTACLE WITH WEATHERPROOF PLATE. HEIGHT AS NOTED.

DUPLEX RECEPTACLE W/GROUND FAULT PROTECTION.
 +1'-6" AFF OR AS NOTED
 VOICE OUTLET WITH 3/4" CONDUIT STUBBED UP OUT OF BOX TO ABOVE ACCESSIBLE CEILING. INSTALLED ABOVE COUNTERTOP. (W DENOTES WALL

MOUNTED +48" AFF)

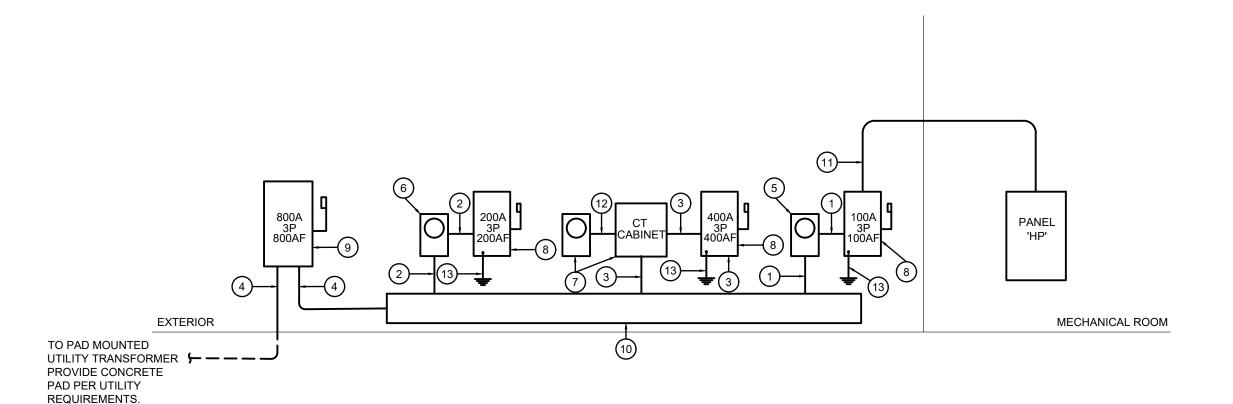
FA VISUAL FIRE ALARM STROBE LIGHT +6'-8" A.F.F.

FA COMBINATION AUDIBLE/VISUAL WALL MOUNTED, +6'-8" AFF.

ABOVE FINISH FLOOR
ETR EXISTING TO REMAIN

PA FIRE ALARM

OUCT MOUNTED PHOTO-ELECTRIC SMOKE DETECTOR



RISER DIAGRAM NO SCALE

⊗ RISER NOTES

- 1. PROVIDE 100 AMP FEEDER: 1-1/2"C, 4-#1.
- 2. PROVIDE 200 AMP FEEDER: 2" C, (4)#3/0.
- 3. PROVIDE 400 AMP FEEDER: (2) SETS OF 2-1/2"C, 4-#3/0.
- 4. PROVIDE 800 AMP SERVICE: (3) SETS OF 3"C, 4-#300.
- 5. PROVIDE 100 AMP, 120/208 VOLT, 3 PHASE, UTILITY METER SOCKET PER UTILITY COMPANY STANDARDS. GROUND PER UTILITY COMPANY STANDARDS.
- 6. PROVIDE 200 AMP, 120/208 VOLT, 3 PHASE, UTILITY METER SOCKET PER UTILITY COMPANY STANDARDS. GROUND PER UTILITY COMPANY STANDARDS.
- 7. PROVIDE 400 AMP, 120/208 VOLT, 3 PHASE, UTILITY METER SOCKET AND CT CABINET PER
- 8. PROVIDE FUSED DISCONNECT SWITCH WITH NEMA 3R ENCLOSURE. PROVIDE WITH CLASS

UTILITY COMPANY STANDARDS. GROUND PER UTILITY COMPANY STANDARDS.

- 9. PROVIDE FUSED DISCONNECT SWITCH WITH NEMA 3R ENCLOSURE. PROVIDE WITH CLASS L FUSES. GROUND PER UTILITY COMPANY STANDARDS.
- PROVIDE NEMA 3R GUTTER WIREWAY. SPLICE INCOMING SERVICE CONDUCTORS TO HOUSE AND FUTURE SERVICE CONDUCTORS WITHIN WIREWAY. GROUND PER UTILITY
- 11. PROVIDE 100 AMP SERVICE: 1-1/2"C, 4-#1, 1-#8 GROUND.
- 12. PROVIDE 1-1/4"C FOR UTILITY METERING CABLES PER UTILITY COMPANY STANDARDS.
- 13. REFER TO SERVICE GROUNDING DETAIL.

COMPANY STANDARDS.

451 NW Murray Rd Renovation

STRUCTURAL

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451 NW Murray Rd Lees Summit, MO 64081

ISSUED FOR:

29 OCT 2021

08 NOV 2021

Permit / Bid Revision 1 City Comments



Checked By

Au Ched

ELECTRICAL DETAILS

Project Number: 2021.375 © 0