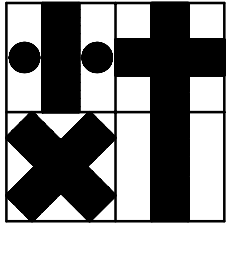




ISSUE
01/29/12 ISSUED FOR PERMIT
02/15/12 CITY COMMENTS

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PROJECT ADDRESS
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PROJECT NUMBER
11078
SHEET NAME
ELECTRICAL RISER DIAGRAM

SHEET NUMBER
E3.1

PANEL 'LM'												
LOCATION: EXTERIOR		120/240V, 3ø, 4W W/ FEED THRU LUGS			MOUNTING SURFACE RUSSMAN SERVO			250 AMP MCB				
CKT	LOAD	* KVA	WIRE	BKR	A	C	BKR	WIRE	KVA * LOAD			
1	RU-1 (EXISTING)	1	15.5	#8	50/3	1	20/1	#12	1.6	1	EE-F13	2
3	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
7	RU-2 (NEW)	1	10.9	#8	40/3	1	20/1	#12	1.1	1	EE-F11	6
9	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
13	RU-3 (NEW)	1	10.9	#8	40/3	1	20/1	#12	1.1	1	SE-F12	12
15	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
19	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
21	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
23	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
25	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
27	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
29	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
31	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
33	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
35	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
37	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
39	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
41	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
42	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL KVA = 42.2 (101.5 AMPS)												

* NOTES
1. PROVIDE HACR CIRCUIT BREAKER AT THIS LOCATION.

PANEL 'LU'												
LOCATION: EXTERIOR		120/240V, 1ø, 3ø			MOUNTING SURFACE RUSSMAN SERVO			200 AMP MCB				
CKT	LOAD	* KVA	WIRE	BKR	A	C	BKR	WIRE	KVA * LOAD			
1	P.O.S. REGISTER	0.7	#12	20/1	---	---	---	#12	0.2	---	COMMENCEMENT RECEPT.	4
3	JUICER	0.7	#12	20/1	---	---	---	---	---	---	1 SHUNT TRIP BREAKER	2
5	GRINDER	1.0	#12	20/1	---	---	---	#12	0.2	---	COMMENCEMENT RECEPT.	6
7	PROCESSOR	0.8	#12	20/1	---	---	---	---	---	---	1 SHUNT TRIP BREAKER	8
9	SPACE	---	---	---	---	---	---	---	---	---	HOOD LIGHTS	10
11	SPACE	---	---	---	---	---	---	---	---	---	1 SHUNT TRIP BREAKER	12
13	DISHWASHER	---	---	---	---	---	---	---	---	---	ICE MACHINE	14
15	DISHWASHER BE-FLUE	0.3	#12	20/1	---	---	---	#12	1.5	---	---	16
17	FREEZER	0.8	#12	20/1	---	---	---	#12	0.2	---	REFRIGERATOR BAR	18
19	HOT WELL	6.4	#8	40/2	---	---	---	#12	0.9	---	REFRIGERATOR BAR	20
21	---	---	---	---	---	---	---	---	---	---	P.O.S. REGISTER	22
23	TELE. TERM. BOARD	0.2	#12	20/1	---	---	---	#12	0.3	---	COMMENCEMENT RECEPT.	24
25	ROOF/EXTER. RECEPT.	0.9	#12	20/1	---	---	---	#12	0.3	---	FIRE SUPPRESSION SYS.	26
27	GENERAL RECEPT. MOPEN	0.9	#12	20/1	---	---	---	#12	0.3	---	P.O.S. REGISTER	28
29	COMMENCEMENT RECEPT.	0.2	#12	20/1	---	---	---	#12	0.3	---	RECEPT. DINING/HALL	30
31	LIGHTING	2	11	#12	20/1	---	---	#12	0.8	---	BAR EQUIP.	32
33	LIGHTING	3	13	#12	20/1	---	---	#12	0.1	---	ONE STENOBO	34
35	LIGHTING	4	0.7	#12	20/1	---	---	#12	0.1	---	1 SHUNT TRIP BREAKER	36
37	LIGHTING	5	0.8	#12	20/1	---	---	#12	0.4	---	7 TENANT SIGN	38
39	LIGHTING	6	0.8	#12	20/1	---	---	#12	0.4	---	EE-1 & 2	40
41	LIGHTING	1.5	#12	20/1	---	---	---	#12	0.4	---	DISHWASHER SE-FLUE	42
TOTAL KVA = 30.1 (41.3 AMPS)												

* NOTES
1. SHUNT TRIP BREAKER.
2. VIA RELAY 'RT' IN LEVITON 'Z-MAX' RELAY PANEL. (TIMELOCK ON/OFF)
3. VIA RELAY 'RT' IN LEVITON 'Z-MAX' RELAY PANEL. (TIMELOCK ON/OFF)
4. VIA RELAY 'RE' IN LEVITON 'Z-MAX' RELAY PANEL. (TIMELOCK ON/OFF)
5. VIA RELAY 'RE' IN LEVITON 'Z-MAX' RELAY PANEL. (TIMELOCK ON/OFF)
6. VIA RELAY 'RE' IN LEVITON 'Z-MAX' RELAY PANEL. (TIMELOCK ON/OFF)
7. VIA RELAY 'RE' IN LEVITON 'Z-MAX' RELAY PANEL. (PHOTOCELL ON/OFF)

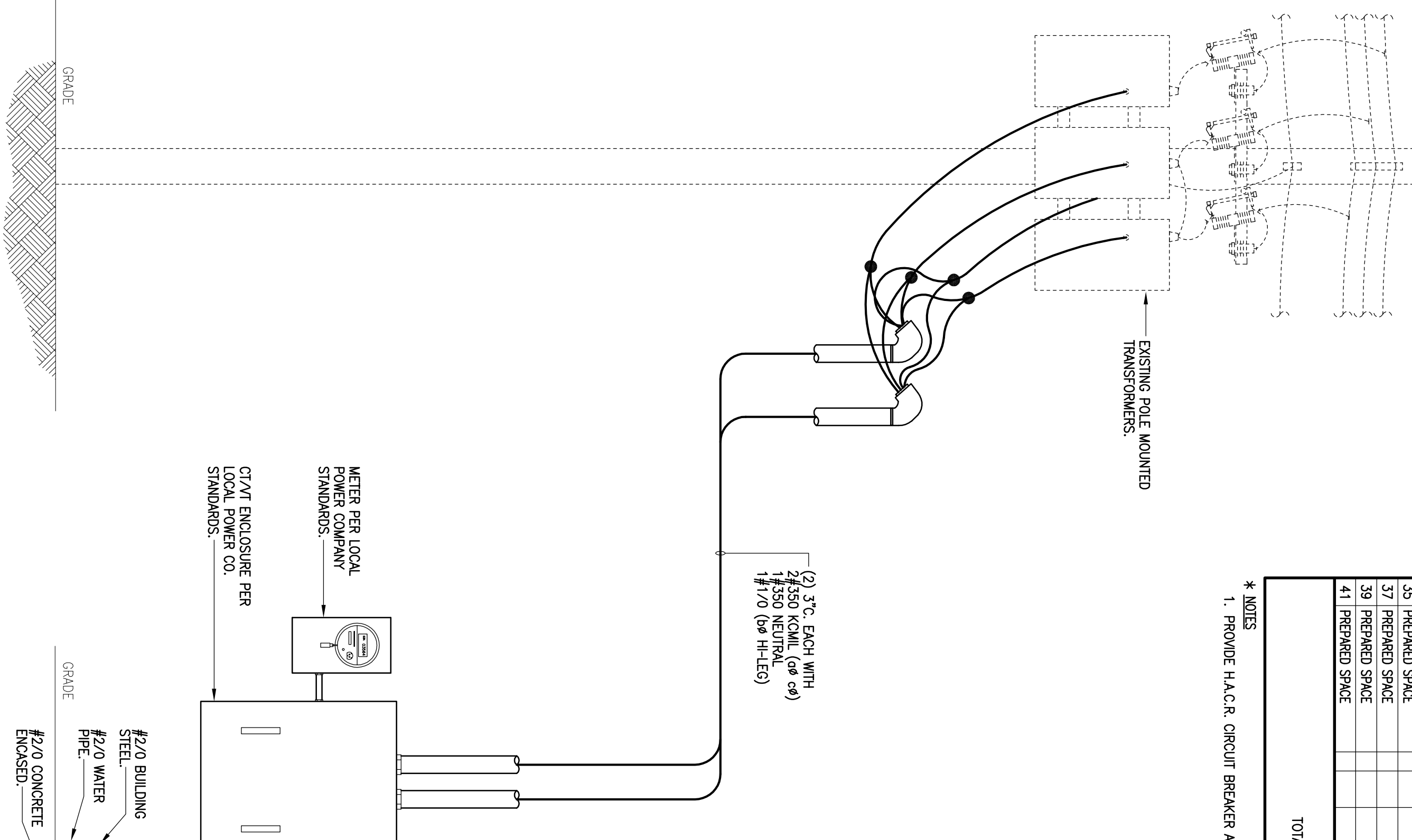
PANEL 'LL2'												
LOCATION: EXTERIOR		120/240V, 1ø, 3ø			MOUNTING SURFACE RUSSMAN SERVO			100 AMP MCB				
CKT	LOAD	* KVA	WIRE	BKR	A	C	BKR	WIRE	KVA * LOAD			
1	THM-1	---	---	---	---	---	---	---	---	---	---	---
3	THM-2	---	---	---	---	---	---	---	---	---	---	---
5	SPACE	---	---	---	---	---	---	---	---	---	---	---
7	SPACE	---	---	---	---	---	---	---	---	---	---	---
9	SPACE	---	---	---	---	---	---	---	---	---	---	---
11	SPACE	---	---	---	---	---	---	---	---	---	---	---
13	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
15	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
17	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
19	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
21	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
23	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
25	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
27	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
29	PREPARED SPACE	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL KVA = 0.4 (1.7 AMPS)												

* NOTES

ELECTRICAL LOAD ANALYSIS							
LOCATION: 8338 SOUTHWEST FREEWAY HOUSTON, TEXAS 77074							
PROJECT DESCRIPTION: 2606 SQ. FT. REMODEL OF AN EXISTING LEASE SPACE.							
LOAD DESCRIPTION	120/240V, 3ø - 4W	LOAD KVA	LOAD (FULL LOAD AMPS)	Aø	Bø	Cø	N
LIGHTING LOAD 3W/SQ. FT. (2,606 SQ.FT.) AT 1.25% = 9.7		9.7	80.8	-	80.8	80.8	80.8
RECEPTACLES - FIRST 10 KW OF 3.7 KVA AT 100% = 8.5		N/A	---	---	---	---	---
RECEPTACLES - REMAINDER 3.7 KVA AT 50% (N.E.C. 220-13) = N/A		3.7	30.8	-	30.8	30.8	30.8
HVAC: 3ø ROOF TOP UNITS AT 100% =		37.3	89.7	89.7	89.7	89.7	-
3ø EXHAUST/SUPPLY FANS AT 100% =		4.9	11.8	11.8	11.8	11.8	-
PLUMBING EQUIPMENT AT 100% =		0.4	3.3	-	3.3	3.3	3.3
MISCELLANEOUS NON-CONTINUOUS AT 100% =		15.3	127.5	-	127.5	127.5	127.5
MISCELLANEOUS CONTINUOUS 5.5 KVA AT 125% (N.E.C. 215-2) =		6.9	57.5	-	57.5	57.5	57.5
TOTAL ESTIMATED CONNECTED LOAD =		78.2	401.4	101.5	401.4	401.4	299.9
SERVICE PROVIDED =		600	600	300	600	600	600

SHORT CIRCUIT CALCULATIONS USING RUSSMAN POINT TO POINT METHOD:
ULTIMATE FAULT CURRENT FROM CENTER POINT ENERGY = 72,900 AMPS AT 240 VOLTS, 3 PHASE.

1. SERVICE FROM POLE MOUNTED TRANSFORMER WITH #500 KCUIL CU IN 3 INCH CONDUIT FOR 120/240 VOLT, 3 PHASE, 4 WIRE SERVICE TO BUILDING, APPROXIMATELY 150 FT FROM SERVICE DROP TO SERVICE COUNTER
 - A. $F = 1.73 \times 150 \times 72,900 = 4.0$
 - 19,704 X 240 = 4.0
- B. $M = 1$
- C. $72,900 \times 0.2 = 14,580$ AMPS RMS SHORT CIRCUIT CURRENT AT MAIN SWITCH.
- D. ALL PANELS RATED AT 25,000 A.I.C. RMS SYM.



ELECTRICAL RISER DIAGRAM

1 SCALE: NOT TO SCALE