FOR REFERENCE ONLY

EXISTING ELECTRICAL PANEL LAYOUTS & REST OF ELECTRICAL INFORMATION MAY NOT REFLECT THE ACTUAL EXISTING CONDITIONS, FIELD VERIFY BY GENERAL CONTRACTOR PRIOR TO SUBMIT PRICING

PANEL 'HB'

SERV: 277/480 VOLTS: 3 PHASE 4 WIRE; S.N. & GRND.
MAINS: 225 AMP. WITH MLO
CABINET SURFACE MOUNTING

SERVES	KW LOAD	WIRE	C.B.	CT	CT	C.B.	WIRE	SERVES	KW LOAD
CHILLER	2.07	1/0	150/3	1	2	20/3	#2	PUMP 'CHLP' 2HP	1.4
	2.07			3	4				1.4
	2.07			5	6				1.4
AHU 7 1/2 HP	2.3	#6	30/3	7	8	20/1	--	SPARE	--
	2.3			9	10		--		--
	2.3			11	12		--		--
XFMR 'TLAA'	25	#1	125/3	13	14	20/1	#8	SITE LTG	.9
	25			15	16		#2	LIGHTING	1.2
	25			17	18				2.25
(2) LIGHTING	1.4	#2	20/1	19	20				.9
SPARE	--			21	22				2.7
	--			23	24			NT LTG.	.9
	--			25	26		--	SPARE	--
	--			27	28		--		--
	--			29	30		--		--
				31	32				
				33	34				
				35	36				
				37	38				
				39	40				
				41	42				
SUBTOTAL	147.2							SUBTOTAL	19.75

TOTAL CONN. LOAD = 166.95KW WATTS AT 480 VOLTS 3 PHASE
= 201 AMPS TOTAL NEC DEMAND 117.02 = 202 AMPS @ 480V, 3 PHASE

(1) PROVIDE ROOF MTD. PHOTOCELL & 24 HR TYPE TIME CLOCK FOR CONTROL OF CIRCUIT #4.
(2) PROVIDE 24 HR. TYPE TIME CLOCK FOR CONTROL OF CIRCUIT #19.

PANEL 'LAA'

(1) SERV: 120/208 VOLTS: 3 PHASE 4 WIRE; S.N. & GRND.
MAINS: 400 AMP. WITH 250A MCB
(3) CABINET SURFACE MOUNTING

SERVES	KW LOAD	WIRE	C.B.	CT	CT	C.B.	WIRE	SERVES	KW LOAD
(2) LIGHTING	1.05	#2	20/1	1	2	20/1	#2	LIGHTING	.75
	.75			3	4				.75
(2)	.9			5	6				.75
	.9			7	8	20/2		COPY MACHINE	1.8
	.75			9	10				1.8
RECEPTS (6)	1.08			11	12	20/2		COPY MACHINE	1.8
COPY MACHINE	1.7			13	14				1.8
	1.7			15	16	20/1		BLDG. SIGN	.72
RECEPTS (3)	3.4			17	18				.72
(8)	.9			19	20			RECEPTS (2)	.36
(5)	.9			21	22			(2)	.36
(8)	1.44			23	24			(1)	.18
(4)	.72			25	26			(1)	.18
(3)	.36			27	28			HAND DRYER	.12
(1)	.18			29	30				.12
(1)	.18			31	32		---	SPARE	---
(1)	.18			33	34		---		---
LIB. DESK EQUIP.	.12			35	36		#2	RECEPTS (4)	.72
	.12			37	38		---	SPARE	---
	.12			39	40		#2	RECEPTS (2)	.36
(2) LIGHTING	.75			41	42			(1)	.18
SUBTOTAL	16.32							SUBTOTAL	18.4

TOTAL CONN. LOAD = 34.72KW WATTS AT 208 VOLTS 3 PHASE
= 96 AMPS TOTAL NEC DEMAND 53.869 = 149 AMPS @ 208V, 3 PHASE

(1) PROVIDE FEED THRU LUGS.
(2) PROVIDE 20A, 1P TIME CLOCK (24 HR. TYPE) & 30A - 3P RELAY FOR CONTROL 1 OF CKTS. 3,5 & 41.
(3) PROVIDE 20A, 1P TIME CLOCK (24 HR. TYPE) & 30A - 3P RELAY FOR CONTROL 1

PANEL 'CP'

(1) SERV: 120/208 VOLTS: 3 PHASE 4 WIRE; S.N. & GRND.
MAINS: 100 AMP. WITH MLO
(2) CABINET SURFACE MOUNTING

SERVES	KW LOAD	WIRE	C.B.	CT	CT	C.B.	WIRE	SERVES	KW LOAD
COMPUTER OUTLET	1.35	#2	20/1	1	2	20/1	---	SPARE	---
	.9			3	4		#2	COMPUTER OUTLET	.45
	.45			5	6				.45
	1.35			7	8				.45
	.45			9	10				.9
	.45			11	12		---	SPARE	---
SPACE W/ PROV.	---	---		13	14		---		---
	---	---		15	16		---		---
				17	18		---		---
				19	20				
				21	22				
				23	24				
				25	26				
				27	28				
				29	30				
				31	32				
				33	34				
				35	36				
				37	38				
				39	40				
				41	42				
SUBTOTAL	4.95							SUBTOTAL	2.7

TOTAL CONN. LOAD = SEE PANEL 'LAA' WATTS AT ____ VOLTS ____ PHASE
= ____ AMPS TOTAL NEC DEMAND ____ = ____ AMPS @ 208V, 3 PHASE

(1) PROVIDE GROUND BAR SEPARATE & ISOLATED FROM NEUTRAL BAR CIRCUIT #4.
(2) PROVIDE WIREMOLD 'SENTREX' HC120Y. HARD WIRE TO PANEL BUS

PANEL 'LBB'

(2) SERV: 120/208 VOLTS: 3 PHASE 4 WIRE; S.N. & GRND.
MAINS: 400 AMP. WITH MLO
CABINET SURFACE MOUNTING

SERVES	KW LOAD	WIRE	C.B.	CT	CT	C.B.	WIRE	SERVES	KW LOAD
RECEPTS (3)	3.4	#3	20/1	1	2	20/1	#2	RECEPTS (8)	1.44
(2)	.36			3	4			(5)	.9
(2)	.36			5	6			(1)	.18
(2)	.36			7	8			(2)	.36
(4)	.72			9	10			(2)	.36
(1) LIGHTING	1.4	#6		11	12			SPARE	---
	.4	#2		13	14			MICROWAVE	.9
(1) RECEPTS (5)	.9	#2		15	16			RECEPT (1)	.18
RECEPT (1)	.18			17	18			(1)	.18
RECEPT (1)	.18			19	20			(1)	.18
(1) RECEPT (1)	.18			21	22			LIGHTING	.9
SPARE	---	---		23	24			SPARE	---
PANEL 'CP'	4.95	#6	60/3	25	26				---
	4.95			27	28				---
	4.95			29	30				---
SPACE W/PROV	---	---	20/1	31	32				---
	---	---		33	34				---
	---	---		35	36				---
	---	---		37	38			SPACE W/ PROV	---
	---	---		39	40				---
	---	---		41	42				---
SUBTOTAL	16.09							SUBTOTAL	6.36

TOTAL CONN. LOAD = SEE PANEL 'LAA' WATTS AT ____ VOLTS ____ PHASE
= ____ AMPS TOTAL NEC DEMAND ____ = ____ AMPS @ 208V, 3 PHASE

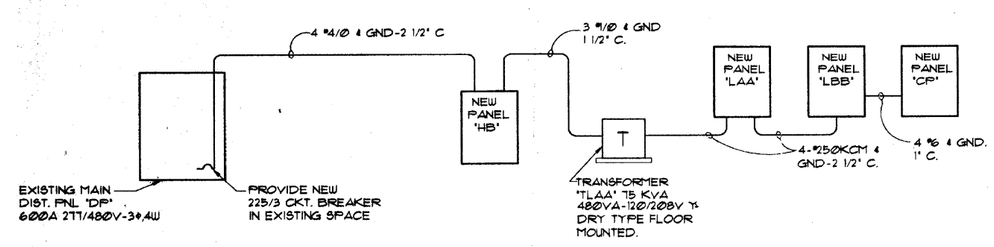
(1) PROVIDE 20A-2P TIME CLOCK (24 HR. TYPE) FOR CONTROL 1 OF CKTS. 11 & 13.
(1) PROVIDE GROUND BAR SEPARATE FROM NEUTRAL BAR

2 EXISTING ELECTRICAL PANEL LAYOUTS

LOAD ANALYSIS

EXISTING PEAK DEMAND 266 KVA X 125%	=	333	KVA
NEW LIGHTING LOAD 21.2 KVA X 125%	=	26	KVA
NEW RECEPT LOAD 101 RECEPTS X 180 IN EA. = 18.180 KW			
1ST 10 KW @ 100% = 10.00 KW			
REMAINDER @ 50% = 4.00 KW			
DEMAND LOAD = 14 KW	=	14	KW
MISC. POWER 14.9 KW X 100%	=	15	KW
NEW HVAC 80.3 KW X 100%	=	80	KW
TOTAL LOAD	=	468.3	KW
TOTAL AMPS @ 480V-3Ø	=	564	AMPS
SERVICE CAPACITY	=	600	AMPS
SPARE CAPACITY	=	36	AMPS

3 EXISTING ELECTRICAL LOAD ANALYSIS



ELECTRICAL ONE LINE DIAGRAM
NO SCALE

1 EXISTING ELECTRICAL ONE-LINE DIAGRAM

CITY OF HOUSTON TEXAS

GENERAL SERVICES DEPARTMENT
DESIGN & CONSTRUCTION DIVISION

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REVISIONS

date	revision	comments

PROJECT LOCATION

ALIEF LIBRARY
7979 Kirkwood
Houston, Texas

HOUSTON TEXAS

ELECTRICAL VEHICLE CHARGING STATION SITE PLAN

PROJECT NUMBER

ISSUE: 12/07/10
SCALE: REFER TO DRAWING
DRAWN BY: A.R.
DRAWING NUMBER: 2 OF 6
SHEET NUMBER: E1.0