EXIST. PANELBOARD SCHEDULE '102'

TYPE:	PANELBOARD	NEMA TYPE:	NEMA 1	MAIN TYPE:	225A M.C.B.
VOLTAGE:	208Y/120V 3Ø 4W	AFC:	25,490	FEED THRU:	NO
MOUNTING:	SURFACE	C/B RATING:	SERIES RATED	ISO. GROUND:	NO
BUS AMPS:	225	C/B A.I.C.:	22,000	SERVICE RATED:	NO

PROVIDE GFCI CIRCUIT BREAKER ⊛ : PROVIDE TIE BAR ⊕ : EXIST. TO REMAIN UNCHANGED □

HANDLE "LOCK-ON" DEVICE ⊖ : CIRCUIT VIA LTG CONTROLS ◇ : EXIST. WITH CHANGED LOAD ○

HANDLE "LOCK-OFF" DEVICE ⊘ : EXIST. W/ ALL LOAD REMOVED ◇ : NEW BREAKER WITH NEW LOAD △

R = RECEPTS H = H.V.A.C. E = EQUIP. K = KITCHEN M = MISC. L = CONT. LIGHTING C = CONT. EQUIP.

T	AREA SERVED	C/B	#	Aø	Bø	Cø	#	C/B	T	AREA SERVED
R	TMB	20 / 1	1	360 / 360			2	20	R	ROOFTOP
L	EXT. SIGN	20 / 1	3		1500 / 3360		4	50	H	AC-5T (a)
L	LIGHTING – SPEC SPACE/EM	20 / 1	5			180 / 3360	6			
R	RECEPTS – GENERAL/RR	20 / 1	7	1080 / 3360			8	3		
R	RECEPT – SERVER	20 / 1	9		1000 / 3360		10	50	C	AC-5T (b)
R	CIRC PUMP	20 / 1	11			180 / 3360	12			
H	EF-2	20 / 1	13	52 / 3360			14	3		
R	RECEPTS – FLOOR BOX (a)	20 / 1	15		1080 / 2250		16	30	C	WH-1
L	LTG – SALES FLOOR	20 / 1	17			1267 / 2250	18	2		
–	SPARE	20 / 1	19	– / –			20	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	21		– / –		22	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	23			– / –	24	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	25	– / –			26	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	27		– / –		28	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	29			– / –	30	– / 1	–	BUSSED SPACE
△⊛ R	EDF	20 / 1	31	180 / –			32	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	33		– / –		34	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	35			– / –	36	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	37	– / –			38	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	39		– / –		40	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	41			– / –	42	– / 1	–	BUSSED SPACE
NON-CONTINUOUS LOAD				5392	5440	3540	5440	VA / 120 V = 45.3 AMPS		
CONTINUOUS LOAD				3360	7110	7057	7110	VA / 120 V = 59.3 AMPS		
CONTINUOUS LOAD @ 25%				840	1778	1764	1778	VA / 120 V = 14.8 AMPS		
TOTAL LOAD PER PHASE				9592	14328	12361	14328	VA / 120 V = 119.4 AMPS		

NOTES:
1. LABEL BRANCH CIRCUIT FEEDING ANY EMERGENCY LIGHTING WITH (EM) PER NEC 700.12(F).
2. EXISTING LOAD TAKEN FROM PREVIOUSLY PERMITTED DRAWINGS.
3. CONTRACTOR SHALL VERIFY THAT PANELBOARD IS LABELED AS SERIES RATED WITH THE UPSTREAM OVERCURRENT PROTECTION DEVICE AS SHOWN ON THE PANEL SCHEDULE BASED ON THE AVAILABLE FAULT CURRENT AT THE PANEL PER THE FAULT CALCULATION PROVIDED. REFER TO FAULT CALCULATION THIS SHEET. CONTACT DESIGNER/ENGINEER WITH ANY DISCREPANCIES.

EXIST. PANELBOARD SCHEDULE '101'

TYPE:	PANELBOARD	NEMA TYPE:	NEMA 1	MAIN TYPE:	225A M.C.B.
VOLTAGE:	208Y/120V 3Ø 4W	AFC:	31,998	FEED THRU:	NO
MOUNTING:	SURFACE	C/B RATING:	SERIES RATED	ISO. GROUND:	NO
BUS AMPS:	225	C/B A.I.C.:	22,000	SERVICE RATED:	NO

PROVIDE GFCI CIRCUIT BREAKER ⊛ : PROVIDE TIE BAR ⊕ : EXIST. TO REMAIN UNCHANGED □

HANDLE "LOCK-ON" DEVICE ⊖ : CIRCUIT VIA LTG CONTROLS ◇ : EXIST. WITH CHANGED LOAD ○

HANDLE "LOCK-OFF" DEVICE ⊘ : EXIST. W/ ALL LOAD REMOVED ◇ : NEW BREAKER WITH NEW LOAD △

R = RECEPTS H = H.V.A.C. E = EQUIP. K = KITCHEN M = MISC. L = CONT. LIGHTING C = CONT. EQUIP.

T	AREA SERVED	C/B	#	Aø	Bø	Cø	#	C/B	T	AREA SERVED
R	TMB	20 / 1	1	360 / 360			2	20	R	ROOFTOP
L	EXT. SIGN	20 / 1	3		1500 / 3360		4	50	H	AC-5T (a)
L	LIGHTING – SPEC SPACE/EM	20 / 1	5			180 / 3360	6			
R	RECEPTS – GENERAL (a)	20 / 1	7	720 / 3360			8	3		
R	RECEPTS – GENERAL (b)	20 / 1	9		720 / 3360		10	50	C	AC-5T (b)
R	RECEPTS – SHOW WINDOW (a)	20 / 1	11			1920 / 3360	12			
R	RECEPTS – FLOOR BOX (a)	20 / 1	13	720 / 3360			14	3		
R	RECEPTS – FLOOR BOX (b)	20 / 1	15		540 / –		16	– / 1	–	BUSSED SPACE
L	LTG – SALES FLOOR	20 / 1	17			1287 / –	18	– / 1	–	BUSSED SPACE
R	RECEPTS – SHOW WINDOW (b)	20 / 1	19	1920 / –			20	– / 1	–	BUSSED SPACE
R	RECEPTS – SHOW WINDOW (c)	20 / 1	21		1920 / –		22	– / 1	–	BUSSED SPACE
R	RECEPTS – SHOW WINDOW (d)	20 / 1	23			1920 / –	24	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	25	– / –			26	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	27		– / –		28	– / 1	–	BUSSED SPACE
–	SPARE	20 / 1	29			– / –	30	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	31	– / –			32	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	33		– / –		34	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	35			– / –	36	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	37	– / –			38	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	39		– / –		40	– / 1	–	BUSSED SPACE
–	BUSSED SPACE	– / 1	41			– / –	42	– / 1	–	BUSSED SPACE
NON-CONTINUOUS LOAD				7440	6540	7200	7440	VA / 120 V = 62.0 AMPS		
CONTINUOUS LOAD				3360	4860	4807	4860	VA / 120 V = 40.5 AMPS		
CONTINUOUS LOAD @ 25%				840	1215	1202	1215	VA / 120 V = 10.1 AMPS		
TOTAL LOAD PER PHASE				11640	12615	13209	13209	VA / 120 V = 110.1 AMPS		

NOTES:
1. LABEL BRANCH CIRCUIT FEEDING ANY EMERGENCY LIGHTING WITH (EM) PER NEC 700.12(F).
2. EXISTING LOAD TAKEN FROM PREVIOUSLY PERMITTED DRAWINGS.
3. CONTRACTOR SHALL VERIFY THAT PANELBOARD IS LABELED AS SERIES RATED WITH THE UPSTREAM OVERCURRENT PROTECTION DEVICE AS SHOWN ON THE PANEL SCHEDULE BASED ON THE AVAILABLE FAULT CURRENT AT THE PANEL PER THE FAULT CALCULATION PROVIDED. REFER TO FAULT CALCULATION THIS SHEET. CONTACT DESIGNER/ENGINEER WITH ANY DISCREPANCIES.

GENERAL NOTES - ONE-LINE

1. THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS TO FULLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BID. NO ADDITIONAL CONSIDERATIONS WILL BE ALLOWED AFTER THE BID.
2. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL INDICATED EQUIPMENT TO CODE COMPLIANT CLEARANCES. PROVIDE SUBMITTALS AS INDICATED IN SPECIFICATIONS TO PROPERLY COORDINATE PHYSICAL LOCATIONS OF NEW AND/OR EXISTING EQUIPMENT.
3. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND COMPLETE CONTRACTUAL OBLIGATIONS.
4. ALL DASHED LINES ARE INDICATING EXISTING EQUIPMENT.
5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT DIRECTORY OR CIRCUIT IDENTIFICATION FOR PANELBOARDS AND SOURCE OF SUPPLY FOR SWITCHBOARDS AND PANELBOARDS SUPPLIED BY A FEEDER IN OTHER THAN ONE- TWO-FAMILY DWELLINGS IN ACCORDANCE WITH NEC 408.4(A)&(B).
6. WHERE A RACEWAY ENTERS A BUILDING OR STRUCTURE FROM AN UNDERGROUND DISTRIBUTION SYSTEM, ELECTRICAL CONTRACTOR SHALL PROVIDE RACEWAY SEALS PER NEC 225.27.
7. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FOR AND COORDINATE ALL TESTING AND INSPECTIONS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, AND SHALL PROVIDE WRITTEN REPORTS TO THE ENGINEER OF ALL TEST RESULTS AND INSPECTION REPORTS FOR THIS DISCIPLINE.
8. WHERE SPECIAL INSPECTION/OBERVATION IS REQUIRED, QUALIFIED 3RD PARTY INDIVIDUALS ACCEPTABLE TO THE AUTHORITY HAVING JURSIDICTION SHALL WORK DIRECTLY FOR THE OWNER TO PERFORM ALL REQUIRED TESTING & INSPECTION.
9. UPON SUBSTANTIAL COMPLETION, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL ALLOW, AT THE ENGINEERS DISCRETION, FOR THE INSPECTION OF NEW WORK PRIOR TO ENERGIZING.
10. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ARC-FLASH HAZARD WARNING FIELD LABELING TO ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC 110.16.
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MAXIMUM AVAILABLE FAULT CURRENT FIELD LABELING TO SERVICE EQUIPMENT INSTALLED IN OTHER THAN DWELLING UNITS IN ACCORDANCE WITH NEC 110.24.
12. GFP MUST BE ON-SITE TESTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ELECTRICAL CONTRACTOR SHALL PROVIDE COPY OF MANUFACTURER'S INSTRUCTIONS AND TEST RESULTS TO AUTHORITY HAVING JURISDICTION.
13. ALL EQUIPMENT RATED @ 1000 AMPS OR MORE SHALL BE TESTED IN CONFORMANCE WITH UL STANDARD 869 OR 891 FOR INSULATION BREAKDOWN PRIOR TO ITS BEING ENERGIZED. THIS TEST SHALL BE PERFORMED BY A TESTING FACILITY APPROVED BY THE BUILDING OFFICIAL. (SEE SECTION 4.6 OF ELECTRICAL SYSTEM SPECIFICATIONS).
14. ALL UNDERGROUND CONDUITS ENTERING BUILDING/STRUCTURE FROM OUTSIDE SHALL BE SEALED PER NEC 225.27 & 300.5(G).

KEYED NOTES

1. EXISTING UTILITY PRIMARY CONDUIT AND CONDUCTORS TO REMAIN.
2. EXISTING UTILITY PAD MOUNTED TRANSFORMER TO REMAIN.
3. EXISTING SECONDARY CONDUIT AND CONDUCTORS TO REMAIN.
4. EXISTING GROUNDING AND BONDING TO REMAIN.
5. EXISTING 200AMP METER TO REMAIN. TYPICAL OF (5).
6. EXISTING 200AMP 3POLE BREAKER TO REMAIN. TYPICAL OF (6).
7. EXISTING CONDUIT AND CONDUCTORS TO REMAIN.
8. TO AREAS NOT IN SCOPE.
9. EXISTING (1) 2 1/2" EMPTY CONDUIT TO REMAIN.
10. EXISTING (4) #3/0'S CU., (1) #6 CU. E.G. – 2" C TO REMAIN.

FAULT CALCULATIONS

The following calculations are based on the "Point-to-Point" method

Three Phase: $f = \frac{\sqrt{3} \times L \times Isc_1}{C \times Vp}$ $M = 1/(1+f)$ $Isc_2 = Isc_1 \times M$

Single Phase: $f = \frac{2 \times L \times Isc_1}{C \times Vp}$ $M = 1/(1+f)$ $Isc_2 = Isc_1 \times M$

Three Phase Xfmr: $f = \frac{\sqrt{3} \times Isc_1 \times Vp \times \%Z}{100{,}000 \times kVA}$ $Isc_2 = \frac{Vp \times M \times Isc_1}{Vs}$

Single Phase Xfmr: $f = \frac{Isc_1 \times Vp \times \%Z}{100{,}000 \times kVA}$ $Isc_2 = \frac{Vp \times M \times Isc_1}{Vs}$

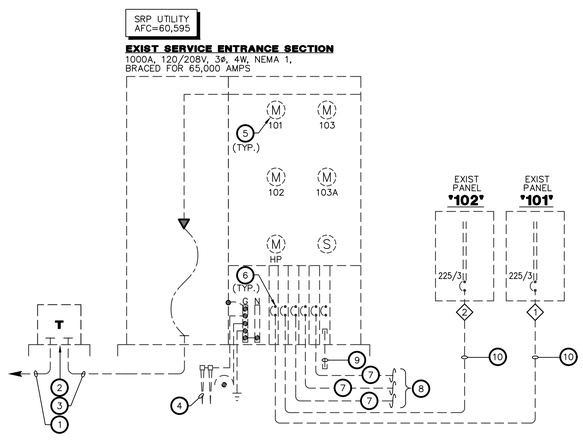
NOTE:
CONDUCTOR LENGTHS SHOWN ARE SHORTEST-PATH FOR USE IN CALCULATIONS ONLY AND ARE NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION. ACTUAL LENGTHS MUST BE MEASURED & VERIFIED BY THE CONTRACTOR, AND **REPORTED TO ENGINEER** IF DESIGN CHANGES ARE REQUIRED.

fg	SOURCE	Isc_1	C.	(SETS) OF WIRE SIZE	TYP.	'C' VALUE	Vp/(Vs)	ø	'L' feet	Xfmr kVA	Xfmr %Z	Isc_2
1	SES	60595	NM	(1) OF #3/0's	Cu.	13923	208	3	26	N/A	N/A	31198
2	SES	60595	NM	(1) OF #3/0's	Cu.	13923	208	3	38	N/A	N/A	25490

SES LOAD SUMMARY

✳ EXISTING LOAD	=	128,139 VA
ADDED LOAD ON PANEL "101"	=	11,647 VA
ADDED LOAD ON PANEL "102"	=	9,339 VA
TOTAL LOAD ON S.E.S.	=	149,125 VA
TOTAL LOAD ON S.E.S. @ 208V 3ø	=	414.2 A

✳ EXISTING LOAD TAKEN FROM PREVIOUSLY PERMITTED DRAWINGS.



ELECTRICAL ONE-LINE DIAGRAM

N.T.S

DESIGN CODES
IECC: 2024 NEC: 2023

ELECTRICAL CONTRACTOR SHALL NOTIFY DESIGNER/ENGINEER PRIOR TO ANY DEVIATION FROM THIS SET OF ELECTRICAL DESIGN PLANS. ANY CHANGES TO THE DESIGN, IF APPROVED BY ENGINEER, WILL REQUIRE REVISIONS TO PLANS AND POSSIBLE ADDITIONAL SERVICE FEE.

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Registered Professional Engineer (Electrical) CERTIFICATE NO. 52649 ARMANDO GARCIA Date Signed 7-2-25 ARIZONA, U.S.A.

ELECTRICAL ONE-LINE DIAGRAM

NOTICE OF ALTERNATE BILLING OR PAYMENT CYCLE: THIS CONTRACT MAY ALLOW THE OWNER TO REQUIRE THE SUBMISSION OF BILLINGS OR ESTIMATES IN BILLING CYCLES OTHER THAN THIRTY DAYS. THIS CONTRACT MAY ALLOW OWNER TO MAKE PAYMENT ON SOME ALTERNATIVE SCHEDULE AFTER CERTIFICATION AND APPROVAL OF BILLING AND ESTIMATE. THE ALTERNATE BILLING OR PAYMENT BILLING CYCLE APPLICABLE TO THE PROJECT IS AVAILABLE FROM OWNER OR DESIGNATED AGENT.
NAME
ADDRESS
PHONE:
CONTACT: Name
PHONE:

BROOKLYN BEDDING
PAD 5B - SUITES 101 AND 102 AT PASEO LINDO SHOPPING CENTER
NEC OF ARIZONA AVE AND OCOTILLO RD.
CHANDLER, AZ

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design by: KL
drawn by: KL
checked by: AG

E4.0

project #: 26102.00