

**1 ELECTRICAL ONELINE FOR SOUTH TRAILHEAD - 'MS2'**  
 EG3 NOT TO SCALE

**NOTES:**

- ALTERNATE THE PHASING BETWEEN FIXTURES AB, BC, AND CA MAINTAIN THE SAME CIRCUIT. SEE DETAIL 3/EG3 FOR PHASING.
- VOLTAGE DROP WAS DONE TO 300 FEET FOR IRRIGATION CONTROLLER FROM MAIN SWITCHBOARD.
- VOLTAGE DROP WAS DONE TO THE MAXIMUM OF 385 FEET FOR THE WATER PLAY AREA FROM THE MAIN SWITCHBOARD.
- CONNECT TO MAXICOM CONTROLS SEE DETAIL 7/ED2. LOCATE NEXT TO MAIN SWITCHBOARD.

**ELECTRICAL LOAD CALCULATION**

SANDHILL AND OWENS PARK - SOUTH TRAILHEAD  
 TJK # 08015  
 120V/208Y

LOAD	DF	DEMAND
<b>STANDARD RESTROOM BUILDING (FUTURE)</b>		
LIGHTING 1900 SF 3.5 VA/SF	1.25	8,310
POWER 1900 SF 2.0 VA/SF	1.00	3,800
HVAC 1900 SF 7.8 TONS	1.00	16,420
1 HAND DRYER	1.00	1,200
0 IRRIGATION CONTROLLER	1.00	0
<b>RAMADA LIGHTING</b>		
3 LED 138W	1.25	520
<b>PARKING LOT</b>		
4 AREA LIGHTS @ 139W F1	1.25	770
3 AREA LIGHTS @ 139W F3	1.25	570
<b>WATER PLAY AREA</b>		
8 AREA LIGHTS @ 217W F9	1.25	2,170
<b>TOT LOT</b>		
12 217W FIXTURES F7	1.25	3,280
<b>TRAIL LIGHTS</b>		
28 70W FIXTURES F4	1.25	2,800
<b>BRIDGE LIGHTING WALL SCONCE</b>		
4 42WATT FIXTURES F8	1.25	230
<b>IRRIGATION CONTROLLER</b>		
1 IRRIGATION CONTROLLER	1.00	1,200
<b>WATER PLAY AREA</b>		
1 WATER PLAY AREA	1.00	1,800
<b>25% LARGEST MOTOR</b>		
1 BP-1 @ 30HP 40 AMPS	0.50	16,625
<b>25% FUTURE</b>		
	0.25	9,960
<b>TOTAL</b>		<b>69,635</b>
69,635 / (208*1.732) =		193 AMPS
SERVICE SIZE =		400 AMPS

**SOUTH TRAILHEAD CONTACTOR SCHEDULE**

CONTACTOR #	RATING	NO. POLES	LOCATION	CIRCUITS CONTROLLED
C12a	30	1	MAIN SWITCHBOARD 'MS2'	MS2-2
C12b	30	1	MAIN SWITCHBOARD 'MS2'	MS2-2
C13a	30	1	MAIN SWITCHBOARD 'MS2'	MS2-3
C13b	30	1	MAIN SWITCHBOARD 'MS2'	MS2-3
C14a	30	1	MAIN SWITCHBOARD 'MS2'	MS2-4
C14b	30	1	MAIN SWITCHBOARD 'MS2'	MS2-4
C15a	30	1	MAIN SWITCHBOARD 'MS2'	MS2-5
C15b	30	1	MAIN SWITCHBOARD 'MS2'	MS2-5
C16	30	3	MAIN SWITCHBOARD 'MS2'	MS2-6
C17	30	3	MAIN SWITCHBOARD 'MS2'	MS2-7
C18	30	3	MAIN SWITCHBOARD 'MS2'	MS2-8
C19	30	1	MAIN SWITCHBOARD 'MS2'	MS2-9
C20	60	3	MAIN SWITCHBOARD 'MS2'	MS2-10

**CONTROL SCHEDULE**

CONTROL	DESCRIPTION	CONTACTORS CONTROLLED	AREA
PC2/TC2-1 (ZONE 1)	PARKING LOT, TRAIL LIGHTING (LOW)	C12a*, C13a*, C14a*, C15a*	MAIN SWITCHBOARD 'MS2'
PC2/TC2-2 (ZONE 2)	PARKING LOT, TRAIL LIGHTING (HIGH)	C12b*, C13b*, C14b*, C15b*	MAIN SWITCHBOARD 'MS2'
PC2/TC2-1 (ZONE 3)	TOT LOT, WATER PLAY, RAMADA	C16, C17, C18, C19, C20	MAIN SWITCHBOARD 'MS2'

ALL CONTACTORS ARE TO BE INSTALLED PER THE CITY OF LAS VEGAS STANDARD  
 \*FIXTURES F1 THROUGH F4 AND F8 WILL BE CONTROLLED BY CONTACTORS C12a, C13a, C14a, C15a ON LOW  
 AND CONTACTORS C12b, C13b, C14b, C15b WILL CONTROL THE CONTACTORS ON HIGH

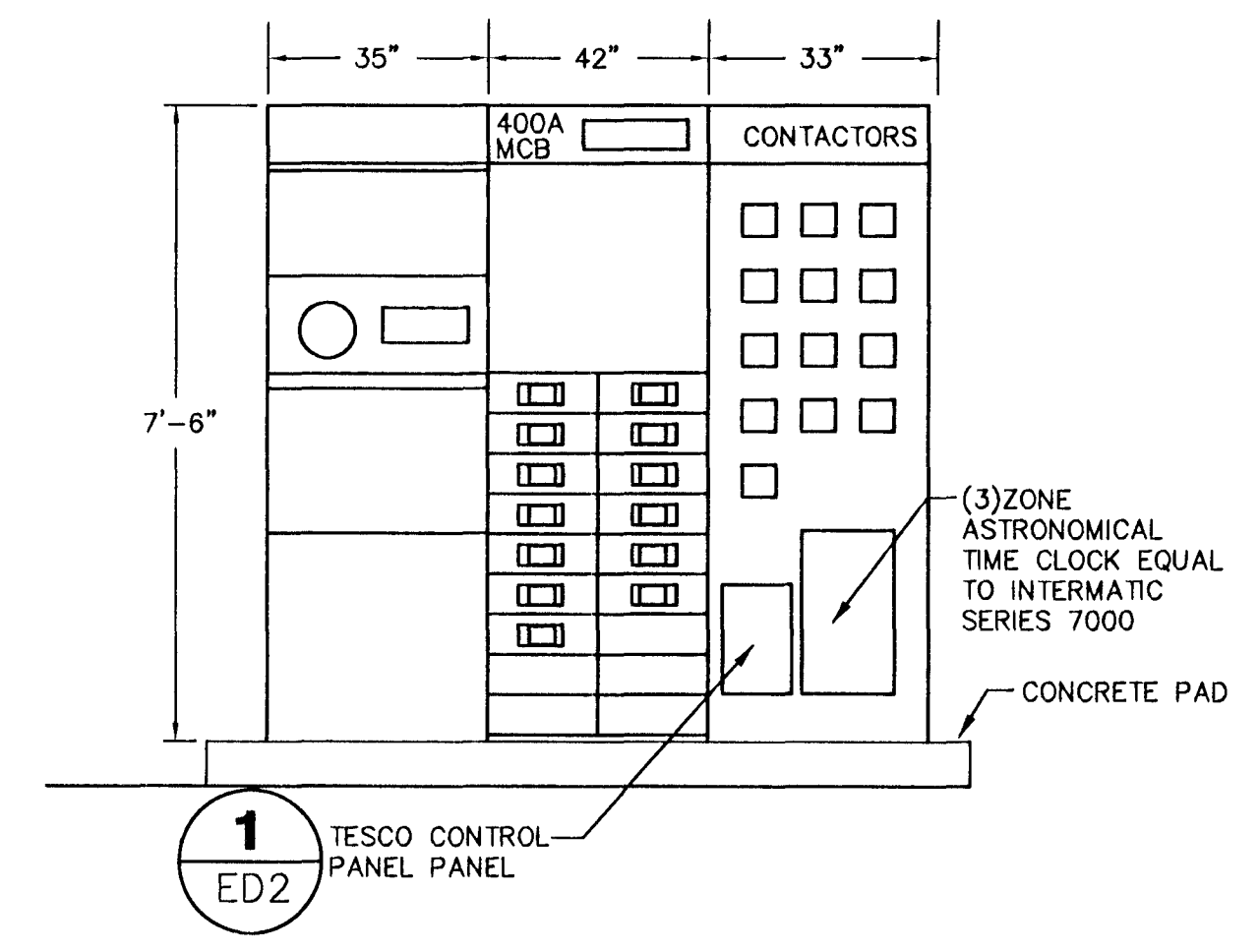
**SHORT CIRCUIT CALCULATIONS - SOUTH TRAILHEAD 'MS2'**

PROJECT: SANDHILL AND OWENS PARK AND TRAILHEAD  
 LOCATION: SANDHILL AND OWENS - CITY OF LAS VEGAS  
 PROJECT NO: 08015  
 DATE: 10/07/09

FAULT LOCATION	TRANS. KVA	PRI. VOLT. L-L	SEC. VOLT. L-L	XFMR. %Z	XFMR. PRI. Isc**	XFMR. SEC. Isc	'MOTOR CONTRIB. Isc	TOTAL CONTRIB. Isc
								Isc
UTILITY TRANSFORMER - MIN	112.5	208	208	-----	-----	36752		36752
UTILITY TRANSFORMER - MAX	112.5	208	208	-----	-----	36752		36752

FAULT LOCATION	CKT LEN. FT.	CONDUCTORS		CONDUIT MAG=1 NON=2	CKT VOLT. L-L	CIRCUIT "C"	BEGINNING Isc	FAULT Isc
		A/Cu	NO / PH.					
MAIN SWITCHBOARD 'MS2'	50	CU	250 kcmil	2	208	37186	36752	26038

\* MULTIPLY THE TOTAL MOTOR LOAD CURRENT BY 4  
 \*\* FOR INFINITE BUS USE 100,000,000  
 \*\*\* SECONDARY SHORT CIRCUIT INFORMATION TAKEN FROM NEVADA POWERS PUBLISHED FAULT CURRENTS, LATEST REVISION AS OF THE DATE ABOVE  
 ALL CALCULATIONS BASED ON BUSSMAN POINT-TO-POINT METHOD



**2 MAIN SWITCHBOARD 'MS2' ELEVATION**  
 EG3 NOT TO SCALE

**GENERAL NOTES FOR ONELINE AND ENCLOSURER:**

- SWITCHBOARD SHOWN WITHOUT NEMA 3R DOORS FOR CLARITY.
- SEE ONELINE DIAGRAM FOR CONDUIT AND FEEDER REQUIREMENTS.
- ALL FEEDERS ARE INSTALLED IN CONDUIT AND ANY DEVIATION IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE CONDUIT FILL, HEAT, AND DERATE ALL MEET THE NEC REQUIREMENTS.
- PAINT ENCLOSURE PER THE CITY OF LAS VEGAS STANDARDS. VERIFY COLOR PRIOR TO ORDERING.

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE DESIGN PROFESSIONAL HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

**DEPARTMENT OF PUBLIC WORKS**

SANDHILL OWENS PARK & TRAILHEAD  
 LAS VEGAS, NEVADA

**ELECTRICAL ONELINE PLAN**

OWNER: CITY OF LAS VEGAS  
 DEPARTMENT OF PUBLIC WORKS  
 CAPITAL PROJECT MANAGEMENT SECTION

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DATE: 12/7/2009  
 SCALE: NTS  
 REV NO: 08.1034111  
 CLV DWG NO:  
 SHV NO:  
 EG3

128242