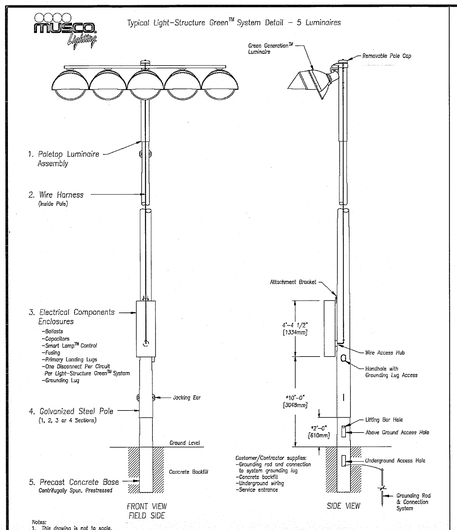
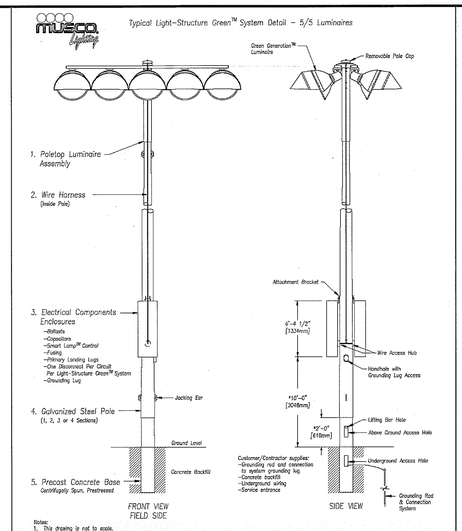
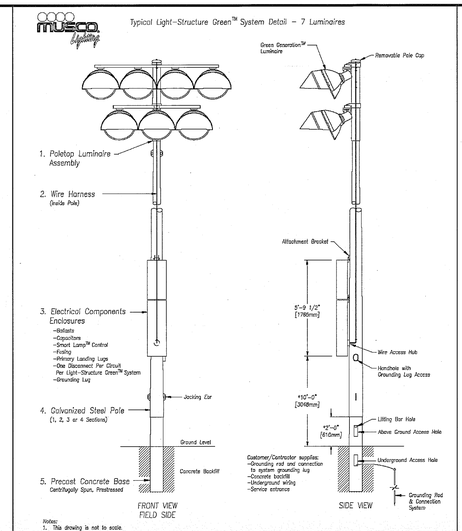


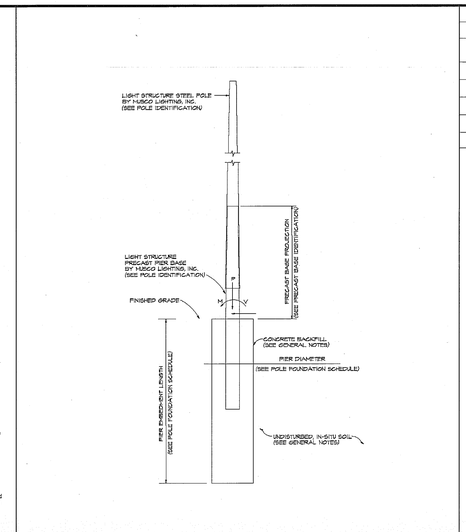
A TYPICAL POLE A1, A3, A4, A8 & C1 - C12 DETAIL NOT TO SCALE



B TYPICAL POLE A2, A5, A6 & A7 DETAIL NOT TO SCALE



C POLE B1 DETAIL NOT TO SCALE



I TYPICAL LIGHT POLE FOUNDATION DETAIL NOT TO SCALE

POLE FOUNDATION SCHEDULE

TYPE	FORCES (MAXIMUM) MOMENT (M) KIP-FT	SHEAR (V) KIPS	VERTICAL (P) KIPS*	PIER DIAMETER INCHES	EMBEDMENT FEET
LS70-A	58.38	1.303	1.686	30"	12'-0"
LS70-C	72.40	1.468	2.430	30"	14'-0"
LS80-A	91.31	1.657	2.371	30"	14'-0"
LS80-B	120.62	2.098	3.836	36"	16'-0"

*VERTICAL FORCE DOES NOT INCLUDE WEIGHT OF PRECAST BASE.

GENERAL NOTES

GENERAL
ALL CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO THE CALIFORNIA BUILDING CODE, 2007 EDITION.

WIND- ASCE 7-05, 85 MPH (EXPOSURE C)

REFERENCE POLE LOCATION DRAWING FOR ACTUAL POLE PLACEMENT AND SITE LOCATION.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION PROCEDURES AND SAFETY CONDITIONS AT THE JOB SITE.

SOIL DESIGN PARAMETERS

REFERENCE SOIL REPORT PREPARED BY CONVERSE CONSULTANTS, INC. DATED OCTOBER 30, 2008; PN-07-81-368-01.

ALLOWABLE VERTICAL BEARING SOIL PRESSURE: 300 PSF SKIN FRICTION

ALLOWABLE LATERAL PASSIVE SOIL BEARING PRESSURE: 250 PSF/FT.

A REPRESENTATIVE OF CONVERSE CONSULTANTS, INC. SHOULD BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY EXIST. POLE FOUNDATIONS MAY NEED TO BE REANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST.

IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY.

ALL PIERS AND CONCRETE BACKFILL MUST BEAR ON AND AGAINST FIRM, UNDISTURBED SOIL OR AS APPROVED BY A GEOTECHNICAL ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL. CASING MAY BE REQUIRED IF CAVING OCCURS. IN SUCH A CASE, APPROVAL BY A GEOTECHNICAL ENGINEER IS REQUIRED.

ALL EXCAVATIONS MUST BE FREE OF WATER OR CONCRETE SHALL BE PLACED WITH A TREMIE PIPE IN ACCORDANCE WITH ACI STANDARD 336. CONCRETE PLACED BY THE TREMIE METHOD SHALL HAVE A MINIMUM ULTIMATE STRENGTH OF 1,000 PSI GREATER THAN REQUIRED UNDER "CONCRETE BACKFILL" BELOW.

CONCRETE BACKFILL

CONCRETE BACKFILL SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS OF 3,000 PSI. (SPECIAL INSPECTION IS NOT REQUIRED. (3,000 PSI IS SPECIFIED FOR EARLY POLE ERECTION, NOT FOR STRUCTURAL DESIGN PURPOSES.)

CONCRETE BACKFILL SHALL ATTAIN A MINIMUM STRENGTH OF 2,000 PSI PRIOR TO STEEL POLE ERECTION.

USE TYPE II/V PORTLAND CEMENT OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

MIX IN CONFORMANCE WITH ASTM C-94.

AGGREGATES PER ASTM C-33. (1" MAX AGG. SIZE)

PLACE CONCRETE IMMEDIATELY AFTER COMPLETION OF EXCAVATION AND INSPECTION BY THE GEOTECHNICAL ENGINEER. NO EXCAVATIONS SHALL BE LEFT UNPROTECTED OR OPEN OVERNIGHT.

CONCRETE SHALL BE PLACED IN ONE CONTINUOUS OPERATION (NO CONSTRUCTION JOINTS) WITH SPECIAL EQUIPMENT WITH A MAXIMUM FREEFALL OF 5 FT AND TO PREVENT CONCRETE FROM STRIKING THE SIDES OF THE EXCAVATION. VIBRATE TOP 5 FT.

MISCELLANEOUS

FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION.

POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS, PLATFORMS, SPECIFICATIONS, AND INSTALLATION PER MUSCO LIGHTING, INC.

FIXTURE: EPA = 2.6 MAX SQ FT, WEIGHT = 40.0 LBS (PER MUSCO LIGHTING, INC.)

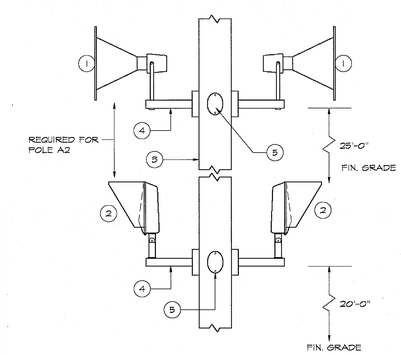
STRUCTURAL ENGINEER : R. L. FOLEY, S.E. #2407 (TEL: 949-581-5212)

POLE IDENTIFICATION

LOCATION MARK	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIXTURES PER CROSS ARM)	FIXTURE EPA (MAX)
A1,A3,A4,A8 C1 THRU C12	LS70-A	5B	5	15.0
A2	LS80-B	5B	10(5/5)BB	22.0
A5,A6,A7	LS70-C	4B	10(5/5)BB	22.0
B1	LS80-A	4B	7(4+3)	17.5
B2	LS80-B	5B	15(4+3/4+4)BB	34.5
B3	LS80-A	4B	8(4+4)	20.8
B4,B8	LS80-A	4B	6	15.0
B5,B6,B7	LS80-B	5B	12(6/6)BB	26.4

POLES A1 & A3 HAVE A MOUNTING BRACKET FOR ONE SECURITY FIXTURE AT 20'-0" AGL AND ONE SPEAKER AT 25'-0" AGL.
POLE A2 HAS MOUNTING BRACKETS FOR TWO SECURITY FIXTURES AT 20'-0" AGL AND TWO SPEAKERS AT 25'-0" AGL.

PRECAST BASE TYPE	WEIGHT (LBS)	OVERALL LENGTH (FEET)	HEIGHT ABOVE GRADE (FEET)	EMBEDMENT IN PIER (FEET)	OUTSIDE DIAMETER (INCHES)
3B	2,670	20'-0"	8'-0"	12'-0"	15.38"
4B	3,710	22'-0"	8'-0"	14'-0"	15.75"
5B	5,180	23'-11"	7'-11"	16'-0"	18.25"

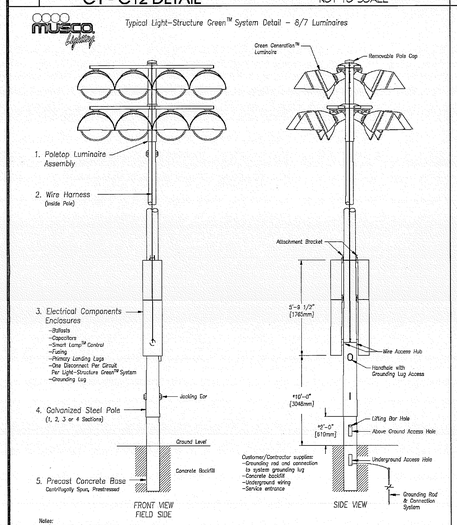


REFERENCE NOTES:

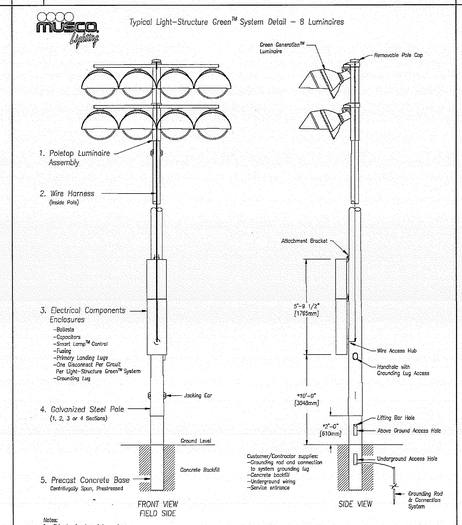
1. LOUD SPEAKER
2. FLOODLIGHT
3. MUSCO LIGHT POLE
4. MOUNTING BRACKET
5. HANDHOLE

POLE A1: 1 FLOODLIGHT AND 1 SPEAKER
POLE A2: 2 FLOODLIGHTS AND 2 SPEAKERS
POLE A3: 1 FLOODLIGHT AND 1 SPEAKER

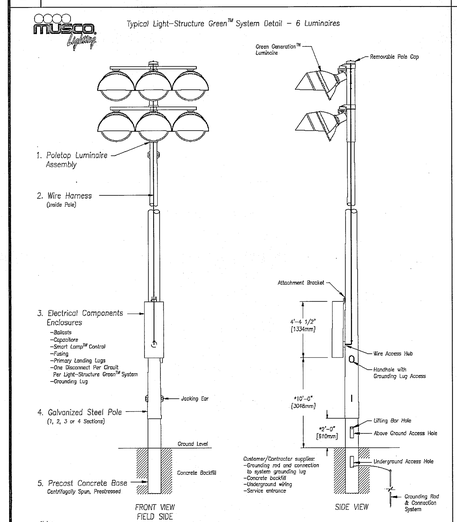
J FLOODLIGHT / SPEAKER MOUNTING DETAIL NOT TO SCALE



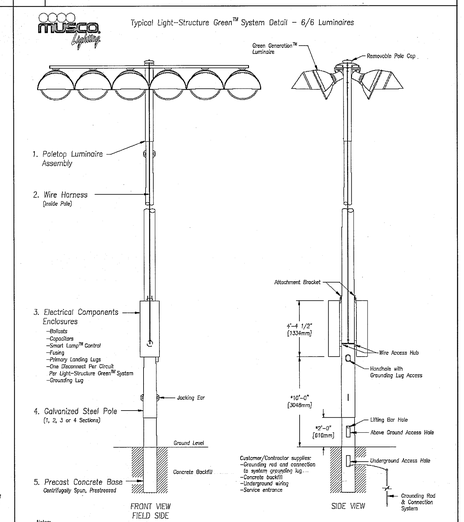
D POLE B2 DETAIL NOT TO SCALE



E POLE B3 DETAIL NOT TO SCALE



F TYPICAL POLE B4 & B8 DETAIL NOT TO SCALE



G TYPICAL POLE B5, B6 & B7 DETAIL NOT TO SCALE

SPORTS FIELD LIGHT, POLE & FEEDER SCHEDULE

	POLES POLE NO.	MTG. HT.	LUMINAIRES LTG. FIXTURE CATALOG NO.	LAMP TYPE AVG. LUMENS	FIXTURE PER POLE	ELEC LOAD KVA	FEEDER DESCRIPTION PANEL CKT NO.	WIRE SIZE (THAN, CU.)	LENGTH (FT)	% V.D.
SEE NOTE 5 BELOW	A1	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP1-1,3,5	#6	200	1.99%
SEE NOTE 5 BELOW	A2	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5 5	9.0 9.0	HSP1-13,15,17 HSP1-2,4,6	#6 #6	280 280	2.15% 2.15%
SEE NOTE 5 BELOW	A3	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP1-14,16,18	#6	380	2.36%
	A4	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP2-1,3,5	#6	480	1.04%
	A5	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5 5	9.0 9.0	HSP2-13,15,17 HSP2-2,4,6	#6 #6	560 560	1.26% 1.26%
	A6	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5 5	9.0 9.0	HSP2-14,16,18 HSP3-1,3,5	#6 #6	500 500	1.15% 1.10%
	A7	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5 5	9.0 9.0	HSP3-13,15,17 HSP3-2,4,6	#6 #6	440 440	0.98% 0.98%
	A8	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP3-14,16,18	#6	400	0.89%
	B1	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	7	12.6	HSP1-7,9,11	#6	80	1.82%
	B2	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	7 8	12.6 14.4	HSP1-19,21,23 HSP1-8,10,12	#4 #2	420 420	2.42% 2.42%
	B3	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	8	14.4	HSP1-20,22,24	#1	520	2.14%
	B4	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	6	10.8	HSP2-7,9,11	#6	600	1.96%
	B5	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	6 6	10.8 10.8	HSP2-19,21,23 HSP2-8,10,12	#6 #6	680 680	2.21% 2.21%
	B6	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	6 6	10.8 10.8	HSP2-20,22,24 HSP3-7,9,11	#6 #6	620 620	2.02% 1.99%
	B7	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	6 6	10.8 10.8	HSP3-19,21,23 HSP3-8,10,12	#6 #6	520 520	1.06% 1.06%
	B8	80 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	6	10.8	HSP3-20,22,24	#6	280	0.94%
	C1	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP1-25,27,29	#6	200	1.99%
	C2	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP1-31,33,35	#4	460	2.19%
	C3	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP1-26,28,30	#4	560	2.33%
	C4	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP1-32,34,36	#2	840	2.32%
	C5	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP2-25,27,29	#6	720	1.59%
	C6	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP2-31,33,35	#6	980	2.13%
	C7	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP2-26,28,30	#6	1020	2.21%
	C8	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP2-32,34,36	#6	760	1.67%
	C9	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP3-25,27,29	#6	700	1.51%
	C10	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP3-31,33,35	#6	440	0.98%
	C11	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP3-26,28,30	#8	240	0.84%
	C12	70 FT	MUSCO #LSG MZ	1500W MZ 134,000 LUMENS	5	9.0	HSP3-32,34,36	#8	120	0.45%

NOTES :

1. FEEDER LENGTHS SHOWN ARE FOR VOLTAGE DROP CALCULATION ONLY AND SHALL NOT BE USED FOR BID TAKE-OFF.
2. LUMINAIRES SHALL BE MUSCO'S "LSG MZ" WITH 1500W SUPER METAL HALIDE LAMP (134,000 AVERAGE LUMENS), COMPLETE WITH BALLAST ASSEMBLY, AP ENCLOSURE AND WIRE HARNESS MOUNTED ON MUSCO STEEL POLE.
3. SERVICE TO EACH POLE IS 480V, 3Ø, 3W. CONNECT THE LUMINAIRES EQUALLY BETWEEN THE THREE PHASES.
4. PROVIDE 5/8" DIA. X 10' COPPERCLAD STEEL GROUND ROD. GROUND WIRE FROM GROUND ROD TO BALLAST ENCLOSURE SHALL BE #2 THAN CU. FOR POLES LESS THAN 75 FT. AND # 2/0 THAN CU. FOR POLES 75 FT. AND ABOVE.
5. PROVIDE MOUNTING BRACKETS AND HANDHOLES FOR FLOODLIGHTS AND SPEAKERS. SEE DETAIL "J" ON THIS SHEET.

H SPORTS FIELD LIGHT, POLE & FEEDER SCHEDULE

MIG
MOORE IACOFANO GOLTSMAN, INC.
801 N. HARBOR BLVD.
FULLERTON, CA 92831
TEL 714/871-3638
FAX 714/871-1188
www.migcom.com

CONSULTANT:

LRA ENGINEERS
Electrical Consulting Engineers
1471 Pomona Road, Unit E
Corona, California 92880
Tel: (951) 737-4569 Fax: (951) 737-5619

PROJECT TEAM:
LANDSCAPE ARCHITECT
MIG INC.

ARCHITECT
PITASSI ARCHITECTS INC.

CIVIL ENGINEERS/SURVEYOR
WALDEN & ASSOCIATES

STRUCTURAL ENGINEERS
CORREIA CONSULTING & DESIGN

ELECTRICAL ENGINEERS
LRA ENGINEERS

IRRIGATION DESIGNER
WILLIAMS IRRIGATION DESIGN

GEOTECHNICAL ENGINEERS
CONVERSE CONSULTANTS

TURF GRASS CONSULTANT
GUISE AND ASSOCIATES

PERRIS VALLEY Big League Dreams

2155 Trumble Road
Perris, California, 92570

SHEET TITLE

SPORTS FIELDS POLE DETAILS

100% CONSTRUCTION DOCUMENT

DATE	REVISIONS

STAMP

REGISTERED PROFESSIONAL ENGINEER
RONALD C. REGALADO
No. E18914
Exp. 6-30-11
ELECTRICAL
STATE OF CALIFORNIA

CHECKED BY	DATE
LRA	
DATE 01-07-10	FILE NAME
DRAWN BY CR	SHEET E-5.0
JOB NO. 05208.00	
SCALE NONE	312 OF 313 SHEETS