

SECTION 16000 - ELECTRICAL

PART 1 - GENERAL
 1.1 SCOPE: PROVIDE ALL ELECTRICAL WORK FOR A COMPLETE AND OPERABLE SYSTEM AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THIS SECTION INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
 A. SITE INVESTIGATIONS PRIOR TO BIDDING TO ESTABLISH EXISTING CONDITIONS.
 B. DISTRIBUTION SYSTEM FOR 120/208 VOLT POWER AND 120 VOLT LIGHTING AND CONVENIENCE OUTLETS.
 C. BRANCH CIRCUIT-WIRING SYSTEM INCLUDING WIRING DEVICES, WIRING, CONDUIT, DISCONNECT SWITCHES, PULL BOXES AND EQUIPMENT CONNECTIONS.
 D. LIGHTING SYSTEM INCLUDING LIGHT FIXTURES, LAMPS, BALLASTS, REQUIRED MOUNTING HARDWARE, DIMMERS, OCCUPANCY SENSORS, PHOTOCCELL CONTROLS AND TIME SWITCHES.
 E. ADJUSTMENT AND TEST OF THE ELECTRICAL WORK.
 F. GUARANTEE.
 1.2 QUALITY ASSURANCE:
 A. ALL PRODUCTS AND EQUIPMENT HEREIN SPECIFIED OR INDICATED ON THE DRAWINGS SHALL BE NEW WITH UL LABEL AND IN COMPLIANCE WITH THE CALIFORNIA ELECTRICAL CODE, STATE AND LOCAL CODES. MATERIALS FOR SIMILAR USE SHALL BE OF THE SAME TYPE AND MANUFACTURE.
 B. ALL WORK AND MATERIALS SHALL BE INSTALLED PER THE GOVERNING AUTHORITIES. NOTHING IN THE PLANS OR SPECIFICATIONS SHALL BE DEEMED AS PERMISSION TO VIOLATE THESE CODES OR AUTHORITIES AND THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY WORK, WHICH IS NOT ACCEPTED. VIOLATIONS SHOWN ON THE PLANS ARE TO BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER BEFORE WORK IS DONE.
 1.3 SITE VISITATIONS: PRIOR TO THE SUBMISSION OF THE BID, THE CONTRACTOR SHALL VISIT THE SITE AND MAKE A THOROUGH EXAMINATION OF THE EXISTING CONDITIONS AND THEREBY INCLUDE ALLOWANCES FOR THIS WORK IN THIS BID.
 1.4 PERMITS AND LICENSES: CONTRACTOR SHALL PAY FOR AND OBTAIN ALL NECESSARY PERMITS, INSPECTIONS, INSURANCE AND LICENSES REQUIRED FOR THE ELECTRICAL WORK. DELIVER CERTIFICATES FOR ALL PERMITS AND INSPECTIONS TO THE ARCHITECT.
 1.5 COORDINATION: CONTRACTOR TO COORDINATE THE ELECTRICAL WORK WITH OTHER TRADES. REVIEW DRAWINGS AND SPECIFICATIONS OF ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS PRIOR TO INSTALLATION OF THE ELECTRICAL SYSTEM. VERIFY SPACE, VENTILATION AND CLEARANCES REQUIRED TO INSTALL ELECTRICAL EQUIPMENT. EXACT LOCATIONS OF LIGHTS AND WIRING DEVICES ARE SHOWN ON ARCHITECTURAL DRAWINGS.
 1.6 SUBMITTALS: WITHIN THIRTY (30) DAYS AFTER AWARD OF CONTRACT, SUBMIT TO THE ARCHITECT SIX (6) SETS OF SHOP DRAWINGS CONSISTING OF PRODUCT DATA SHEETS FOR LIGHT FIXTURES, PANELBOARDS, RECEPTACLES, SWITCHES, PLATES, DISCONNECT SWITCHES, TIME SWITCHES, WIRING DEVICES, AND MATERIAL LIST. SUBMITTALS NOT TO INCLUDE SUBSTITUTIONS OR DEVIATIONS FROM THE MATERIALS OR METHODS SPECIFIED UNLESS PRIOR APPROVAL HAS BEEN GIVEN IN WRITING. MAKE ALL SUBMITTALS AT ONE TIME IN BOOKLET FORM.
 1.7 SUBSTITUTIONS: WHERE MANUFACTURER'S NAME AND CATALOG NUMBER ARE CALLED OUT, THE PHRASE "OR APPROVED EQUAL" CAN BE ASSUMED EXCEPT THE BURDEN OF PROVING EQUALITY IS ON THE BIDDER.
 1.8 DRAWINGS: DURING PROGRESS OF WORK MAINTAIN A RECORD OF CHANGES MADE ON PLANS AND "AS-BUILT" LOCATIONS OF BURIED CONDUITS AND DUCTS. ON COMPLETION, PRESENT A PROFESSIONALLY DONE REPRODUCIBLE DRAWING TO THE ARCHITECT.
 1.9 VERIFICATION OF DIMENSIONS: ALL SCALED AND FIGURED DIMENSIONS ARE APPROXIMATE AND ARE GIVEN FOR ESTIMATING PURPOSES ONLY. WHERE APPARATUS AND EQUIPMENT HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF THE CLASS INDICATED AND BEFORE PROCEEDING WITH THE WORK, THE CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND SIZES AND SHALL ASSUME ALL RESPONSIBILITY FOR THE FITTING OF HIS MATERIALS AND EQUIPMENT TO OTHER PARTS OF THE EQUIPMENT AND TO THE STRUCTURE.
 1.10 LOCATION: PRIOR TO ROUGH-IN, MINOR ADJUSTMENTS TO OUTLET LOCATIONS MAY BE MADE WITHOUT ADDITIONAL COMPENSATION.
 1.11 PROTECTION OF FINISH: FULLY PROTECT ALL FINISHED PARTS DURING THE PROGRESS OF THE WORK AND UNTIL FINAL COMPLETION.
 1.12 GUARANTEE: ALL ELECTRICAL WORK AND EQUIPMENT (EXCEPT LAMPS) SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE ON CONTRACTOR'S LETTERHEAD AND TURNED OVER TO THE OWNER AT THE COMPLETION AND FINAL ACCEPTANCE OF THE JOB.

PART 2 - PRODUCTS
 2.1 SWITCHES: SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK TYPE QMB RATED 600 VOLTS WITH FRAME SIZE, NUMBER OF POLES AND FUSES AS SHOWN.
 2.2 CIRCUIT BREAKERS: CIRCUIT BREAKERS SHALL BE BOLT-ON MOLDED-CASE TYPE WITH THERMAL MAGNETIC TRIPS. PROVIDE WITH RATED VOLTAGE, FRAME SIZE, NUMBER OF POLES AND TRIP SETTING AS SHOWN. NEMA INTERRUPTING CAPACITY SHALL BE SERIES RATED 42,000 AIC AT 120/208 VOLTS UNLESS OTHERWISE NOTED.
 2.3 PANELBOARDS: PANELBOARDS SHALL BE SURFACE MOUNTED, WITH BOLT-ON CIRCUIT BREAKERS TYPE NQOB, WITH HINGED LOCKABLE DOORS; ALL LOCKS KEYS ALIKE AND TYPEWRITTEN DIRECTORIES. ALL MULTIPOLAR BREAKERS SHALL BE SINGLE HANDLE COMMON TRIP. PROVIDE 4" MINIMUM SIDE GUTTER AND 6" MINIMUM TOP AND BOTTOM GUTTERS. IF DOUBLE LUGS ARE SHOWN, TOP OR BOTTOM GUTTER TO BE 12". PANELBOARD FRONT SHALL BE SHEET STEEL, PAINTED MANUFACTURER'S STANDARD IF SURFACE MOUNTED AND PRIME COATED IF FLUSH MOUNTED. BRANCH CIRCUITS SHALL BE CLEARLY MARKED ON THE DEAD FRONT SHIELD. PROVIDE A 1" X 2-1/2" PHENOLIC NAMEPLATE SCREWED TO THE DEAD FRONT SHIELD. ALL TERMINALS SHALL BE SOLDERLESS TYPE CONNECTORS. SOLID NEUTRAL BUS SHALL HAVE CONNECTORS NUMBERED TO AGREE WITH BRANCH CIRCUITS. ALL CIRCUIT BREAKERS TO HAVE LOCK-OFF DEVICE. USE "HACR" CIRCUIT BREAKERS FOR AIR CONDITIONING LOADS. USE "SWD" CIRCUIT BREAKERS FOR LIGHTING CIRCUITS CONTROLLED FROM PANELS. MANUFACTURER SHALL BE G.E., SIEMENS, SQUARE D, OR CUTLER HAMMER.
 2.4 CONDUIT: CONDUIT SHALL BE RIGID STEEL GALVANIZED IMC FOR UNDERGROUND, EXPOSED UP TO +5'-0" OR IN DAMP LOCATIONS. NO RUNNING THREADS WILL BE PERMITTED. GALVANIZED EMT SHALL BE USED IN DRY CONCEALED LOCATIONS AND EXPOSED ABOVE +5'-0". EMT CONNECTORS SHALL BE WATERTIGHT COMPRESSION TYPE. GALVANIZED FLEXIBLE CONDUIT SHALL BE USED ONLY FOR MOTOR AND FIXTURE CONNECTIONS IN LENGTHS NOT TO EXCEED 6'. CONDUITS PENETRATING THE ROOF ARE TO BE FLASHED AND COUNTER FLASHED. PVC SCHEDULE 40 MAY BE USED UNDER FLOOR SLABS OR UNDERGROUND WITH GROUND WIRE. PVC UNDERGROUND TO HAVE 24 INCH COVER. INSTALL FITTINGS, SPECIAL DEVICES AND MATERIAL WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE CONDUIT SYSTEM.
 2.5 CONDUCTORS: CONDUCTORS SHALL BE 600 VOLT INSULATION TYPE THHN/THWN COPPER. CONDUCTORS AWG #10 AND SMALLER SHALL BE SOLID, AWG #8 AND LARGER TO BE STRANDED.
 2.6 SPLICES: SPLICES ON CONDUCTORS #8 OR SMALLER SHALL BE SKOTCHLOK SPRING CONNECTORS AND FOR LARGER SIZE CABLES USE SOLDERLESS CONNECTORS.
 2.7 RECEPTACLES: RECEPTACLES, 120 VOLT DUPLEX GROUNDING TYPE, SHALL BE SPECIFICATION GRADE 15 AMP LEVITON #5261-I AND ISOLATED GROUND RECEPTACLES LEVITON #5262-IGI. WHERE INDICATED WP INSTALL WEATHERPROOF GASKETED COVER, MOUNTED ON FS BOX. PROVIDE GROUND FAULT CIRCUIT INTERRUPTERS WHERE REQUIRED BY CODE. DEDICATED RECEPTACLES SHALL BE 20 AMP, LEVITON #5362-I.
 2.8 CONTACTORS: AS MANUFACTURED BY AUTOMATIC SWITCH COMPANY OR SQUARE D.
 2.9 DISCONNECT SWITCHES: DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED, FUSED EXCEPT WHERE OTHERWISE INDICATED 3 POLE, 600 VOLT, QUICK MAKE, QUICK BREAK WITH LOCKABLE HANDLE OPEN OR CLOSED, IN GENERAL PURPOSE OR WEATHERPROOF ENCLOSURES AS REQUIRED.
 2.10 GROUND FAULT CIRCUIT INTERRUPTER (GFCI): PROVIDE GFCI CIRCUIT BREAKERS OR OUTLETS ACCORDING TO THE NATIONAL ELECTRICAL CODE SECTION 210 (2) AND (3), 210-8, AND SUCH GROUND FAULT CIRCUIT INTERRUPTER PROTECTION MAY BE PROVIDED FOR OTHER CIRCUITS, LOCATIONS AND OCCUPANCIES, AND WHERE USED, WILL PROVIDE ADDITIONAL PROTECTION AGAINST LINE-TO-GROUND SHOCK HAZARDS.

PART 3 - EXECUTION
 3.1 GENERAL: THE ELECTRICAL DRAWINGS, WHICH CONSTITUTE AN INTEGRAL PART OF THIS CONTRACT, SERVE AS THE WORKING DRAWINGS AND INDICATE THE GENERAL LAYOUT OF THE ELECTRICAL SYSTEMS. FIELD VERIFICATIONS OF LOCATIONS ON PLANS IS DIRECTED BY FIELD CONDITIONS. CHECK THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL PLANS TO AVERT POSSIBLE INSTALLATION CONFLICTS AND INCLUDE ALL RESULTING COST IN THE BID.
 A. DISCREPANCIES BETWEEN DIFFERENT PLANS, BETWEEN PLANS AND ACTUAL FIELD CONDITIONS, OR BETWEEN PLANS AND SPECIFICATIONS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER FOR CLARIFICATION OR DECISION. APPURTENANCES AND WIRING NOT SPECIFICALLY INDICATED OR REFERRED TO, BUT WHICH ARE COMMON TO COMPLETE AND OPERABLE ELECTRICAL SYSTEMS, SHALL BE INCLUDED IN THE BID.
 B. EACH EMPTY CONDUIT SHALL INCLUDE A PULL CORD. ALL PULL CORDS SHALL HAVE A MINIMUM DIAMETER OF 1/4" AND A MINIMUM AVERAGE TENSILE STRENGTH OF 1100 POUNDS. IT SHALL BE YELLOW IN COLOR. A CONTRASTING TRACER COLOR MAY BE INCLUDED TO IDENTIFY THE MANUFACTURER. FLAT BRAID IS NOT ACCEPTABLE.
 3.2 INSTALLATION:
 A. INSTALLATION OF MATERIALS AND EQUIPMENT SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS, INDUSTRY STANDARDS, AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
 B. PROVIDE ALL MOUNTING FACILITIES FOR SECURING OR HANGING FIXTURES, EQUIPMENT AND OUTLETS TO THE SATISFACTION OF THE ENGINEER. DETAILS SHOWN ON THE PLANS ARE FOR THE PURPOSE OF ESTABLISHING THE EXTENT AND GENERAL METHODS REQUIRED. PROVIDE ALL SLEEVES, INSERTS, EXPANSION JOINTS, VIBRATION FITTING, ETC.
 C. PROVIDE STORAGE FACILITIES AND PROTECT ALL WORK, MATERIALS AND EQUIPMENT FROM DAMAGE DURING PROCESS OF WORK. MATERIALS AND EQUIPMENT SHALL NOT BE STORED EXPOSED TO WEATHER. REPLACE ALL DAMAGED OR DEFECTIVE WORK, MATERIALS AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE OWNER.
 D. PROVIDE TRENCHING, CONCRETE ENCASEMENT OF DUCT AND CONDUIT, BACK-FILLING AND COMPACTION FOR THE UNDERGROUND ELECTRICAL SYSTEM, ALL IN ACCORDANCE WITH APPLICABLE SECTION OF THIS SPECIFICATION.
 3.3 CONDUIT AND WIRING: ALL CONDUIT AND WIRING SHALL BE INSTALLED CONCEALED IN WALLS, ABOVE CEILINGS AND BELOW FLOOR SLABS OR EXPOSED IN ACCORDANCE WITH APPLICABLE REGULATIONS AND THE ELECTRICAL DRAWINGS. ALL PENETRATIONS OF FIRE-RATED WALLS OR CEILINGS, TO BE COORDINATED WITH OWNER. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT ROUTING AND LOCATION OF THE EQUIPMENT, TO BE DETERMINED IN THE FIELD.
 3.4 EXTERIOR EQUIPMENT: ALL EQUIPMENT AND WIRING OUTSIDE TO BE WEATHERPROOF AND TAMPERPROOF.
 3.5 MOISTURE PROTECTION: WHERE REQUIRED BY REGULATIONS, ALL PANELBOARDS, MAIN SWITCHBOARDS AND ELECTRICAL DEVICES IN THE SPRAY RADIUS OF SPRINKLERS SHALL BE INSTALLED WITH WEATHERPROOF ENCLOSURES IN COMPLIANCE WITH THESE REGULATIONS.
 3.6 GROUNDING: ALL METALLIC CONDUITS, SUPPORTS AND ENCLOSURES SHALL BE GROUNDED IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE. GROUNDING BUSHINGS SHALL BE USED WHEREVER CONDUITS ARE REQUIRED TO BE GROUNDED.
 3.7 TESTING: ALL NEW CIRCUITS SHALL BE TESTED FOR SHORT AND OPEN CIRCUIT TO GROUND WITH A MEGGAR. RESISTANCE TO GROUND SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. FURNISH ALL NECESSARY LABOR, INSTRUMENTS AND EQUIPMENT REQUIRED FOR MAKING TESTS TO DEMONSTRATE THAT THE OPERATION OF THE SYSTEM IS IN ACCORDANCE WITH THE INTENT OF THE CONTRACT DOCUMENTS. ALSO PERFORM A COMPLETE "IN SERVICE" OPERATION OF THE ENTIRE ELECTRICAL SYSTEM TO THE FULL SATISFACTION OF THE OWNER.

END OF SECTION

ELECTRICAL SYMBOLS

	WIRING/CONDUIT CONCEALED IN OR ABOVE CEILING		TOGGLE SWITCH—EACH SUBSCRIPT (LIKE "a", "b", "c") INDICATES INDIVIDUAL SWITCH, +42" UNO
	WIRING/CONDUIT CONCEALED IN OR UNDER FLR.		2- 2 POLE P- PILOT LIGHT
	HOMERUN TO PANELBOARD		3- 3 WAY D- DIMMER
	CIRCUITS AS NOTED		4- 4 WAY MC- MOMENTARY CONTACT
	CONDUIT TURNED UP		K- KEYED M- MOTOR RATED
	CONDUIT TURNED DOWN		MOTOR OUTLET
	2-#12, 1/2" CONDUIT		PANELBOARD
	3-#12, 1/2" CONDUIT		TERMINAL CABINET
	4-#12, 1/2" CONDUIT		MAIN DISTRIBUTION PANEL
	5-#10, 3/4" CONDUIT		DISCONNECT SWITCH
	6-#10, 3/4" CONDUIT		COMBINATION DISCONNECT SWITCH AND MOTOR STARTER, SIZE AS NOTED
	7-#10, 3/4" CONDUIT		PUSHBUTTON, +48"
	8-#10, 3/4" CONDUIT		FINAL CONNECTION BY CONTRACTOR
	9-#10, 1" CONDUIT		THERMOSTAT
	CEILING		FIXTURE TYPE TOTAL NUMBER OF WATTS
	WALL		
	FLOOR		

ABBREVIATIONS	
AFCI	ARC FAULT CIRCUIT INTERRUPTER
A, AMP	AMPERE(S)
AF	AMP-FUSE
AFF	ABOVE FINISH FLOOR
AS	AMP-SWITCH
C.B.	CIRCUIT BREAKER
CIRC.	CIRCUIT
C.O.	CONDUIT ONLY
EM	EMERGENCY BATTERY PACK
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HP	HORSEPOWER
J	JUNCTION
KVA	KILOVOLT-AMP
KW	KILOWATT
L.C.L.	LONG CONTINUOUS LOAD
L.O.	LUGS ONLY
LV	LOW VOLTAGE
N.I.C.	NOT IN CONTRACT
NL	NIGHT LIGHT
N.T.S.	NOT TO SCALE
OFCI	OWNER-FURNISHED, CONTRACTOR INSTALLED
PC	PHOTOCCELL CONTROL
P.O.C.	POINT OF CONNECTION
PROVIDE	FURNISH, INSTALL AND CONNECT UNLESS NOTED OTHERWISE
UNO	UNLESS NOTED OTHERWISE
V	VOLT(S)
VA	VOLT-AMP(S)
W	WATT(S)
WP	WEATHERPROOF

BOA Architecture
Government Services

CITY OF TORRANCE WILSON PARK
GAZEBO STRUCTURE

2300 JEFFERSON STREET, TORRANCE, CA 90501

No.	Date	Revision	By	Ck

Designer: TL	
CAD Draft: TL	
Architect: LN	
Engineer: TL	
Client: TORRANCE	
Date Issue: 03-14-2016	
Job Number: BOA #15-2689	

Client: CITY OF TORRANCE

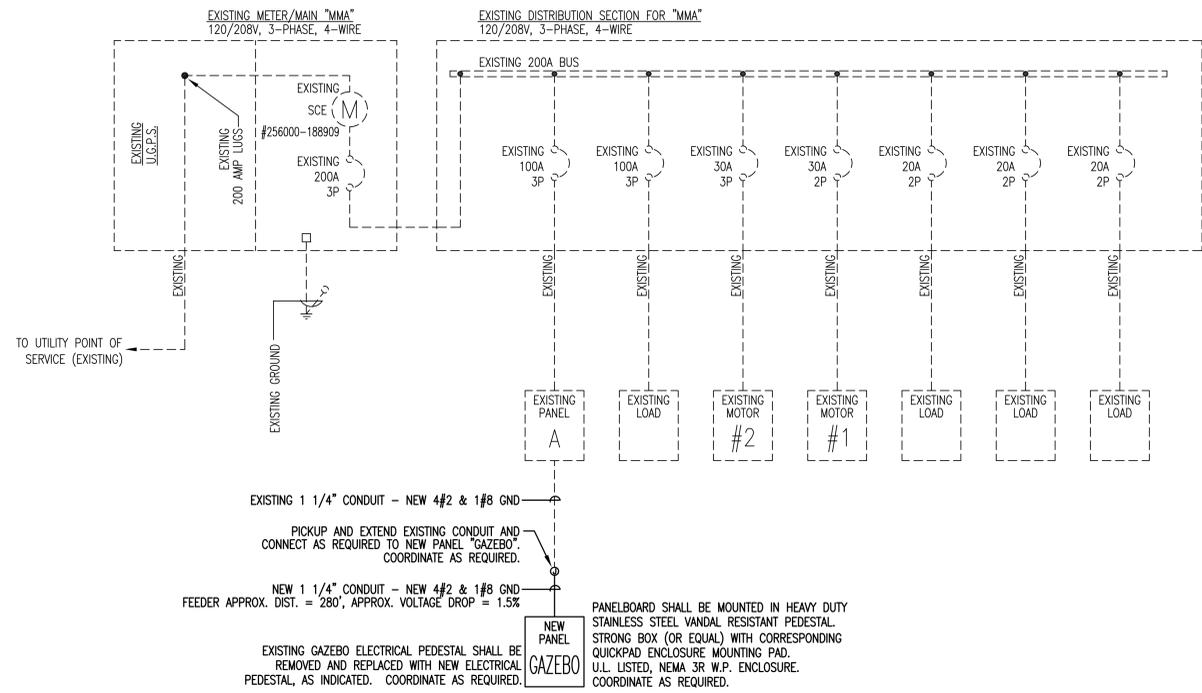
Consultant:
THOMAS K. LEW ASSOCIATES
10000 WILSON PARK
CANNON, CA 90746
Tel: (562) 302-1800
Fax: (562) 302-1800



- SYMBOL LIST, AND
- SPECIFICATIONS

E1

1511 Cota Ave. Long Beach, CA 90813 Tel. 562-912-7900



PANEL: "A" (EXISTING) PANEL VOLTAGE: 120/208V, 3-PH, 4-WIRE CIRCUIT CODE: N : NON-CONTINUOUS
 LOCATION: ELECTRICAL ROOM BUS: 250A L : LONG-CONTINUOUS
 MOUNTING: SURFACE MAIN: LUGS ONLY R : DEMANDABLE RECEPTACLES
 AIC RATING: MATCH EXISTING K : KITCHEN

CKT NO	VALOAD			LOAD DESCRIPTION	W/O	TYPE CNT			C.B.	BUS	TYPE CNT			W/O	LOAD DESCRIPTION	VALOAD			CKT NO							
	A	B	C			M	R	L			TR	P	ABC			TR	P	L		R	M	A	B	C		
1				SPACE	N					X					N EXIST CLOCK	500			2							
3	500			EXIST FOUNTAIN	N			15	1	X					N EXIST LOAD		500		4							
5		500		EXIST FOUNTAIN	N			15	1	X					N EXIST LOAD			500	6							
7	500			EXIST TREE HOUSE LTS	N			20	1	X					N EXIST LOAD	500			8							
9		500		EXIST LOAD	N			20	1	X					N EXIST LOAD			500	10							
11			500	EXIST LOAD	N			20	1	X					N EXIST PUMP ROOM			500	12							
13	1000			EXIST MOTOR #3	N			30	2	X					N			500	14							
15		1000		----	N			--	--	X					N EXIST PUMP ROOM			500	16							
17				SPACE	N					X					N				18							
19				SPACE	N					X					N GAZEBO FEEDER	3832			20							
21				SPACE	N					X					N			3832	22							
23				SPACE	N					X					N				24							
25				SPACE	N					X					N SPACE				26							
27		500		EXIST LOAD	N			15	1	X					N SPACE				28							
29				SPACE	N					X					N SPACE				30							
PHASE TOTALS																				PHASE TOTALS				5332	5152	4820
Total Phase A:																				CONNECTED VA (CODE N):				20304		
Total Phase B:																				CONNECTED VA (CODE L):						
Total Phase C:																				CONNECTED VA (CODE R):						
																				CONNECTED VA (CODE K):						
																				TOTAL CONNECTED KVA				20.3		
																				LCL KVA (25% OF CODE L):						
																				DEMAND KVA (CODE R):						
																				DEMAND KVA (CODE K):						
																				TOTAL ADJUSTED KVA (W/CL AND DEMAND):				20.3		
																				TOTAL PANEL AMPS:				56.4		
																				ADJUSTED AMPS W/CL AND DEMAND:				56.4		

PROVIDE LISTED HANDLE TIES AS REQUIRED FOR MULTIWIRE BRANCH CIRCUITS, PER N.E.C. 210.4

MATCH EXISTING CIRCUIT BREAKER TYPE.

FED FROM "MMA" DISTRIBUTION SECTION WITH 100A CIRCUIT BREAKER, 4#2 THWN CU.

PANEL: "GAZEBO" (NEW) PANEL VOLTAGE: 120/208V, 3-PH, 4-WIRE CIRCUIT CODE: N : NON-CONTINUOUS
 LOCATION: GAZEBO AREA BUS: 100A L : LONG-CONTINUOUS
 MOUNTING: SURFACE MAIN: 90A/3P MAIN CIRCUIT BREAKER R : DEMANDABLE RECEPTACLES
 AIC RATING: 10,000 A.I.C. RATING K : KITCHEN

CKT NO	VALOAD			LOAD DESCRIPTION	W/O	TYPE CNT			C.B.	BUS	TYPE CNT			W/O	LOAD DESCRIPTION	VALOAD			CKT NO							
	A	B	C			M	R	L			TR	P	ABC			TR	P	L		R	M	A	B	C		
1	360			GAZEBO DEDICATED RECEPT	N			2	20	1	X				N GAZEBO DEDICATED RECEPT	360			2							
3		360		GAZEBO DEDICATED RECEPT	N			2	20	1	X				N GAZEBO DEDICATED RECEPT		360		4							
5			360	GAZEBO DEDICATED RECEPT	N			2	20	1	X				N GAZEBO DEDICATED RECEPT			360	6							
7	360			GAZEBO DEDICATED RECEPT	N			2	20	1	X				N GAZEBO DEDICATED RECEPT	360			8							
9		360		GAZEBO PLATFORM RECEPT	N			2	20	1	X				N DMX UNITS		360		10							
11			360	GAZEBO PLATFORM RECEPT	N			2	20	1	X				N DMX UNITS			360	12							
13	360			GAZEBO PLATFORM RECEPT	N			2	20	1	X				L POLE MTD THEATRICAL LTG	372			14							
15		720		GAZEBO PLATFORM RECEPT	N			4	20	1	X				L POLE MTD THEATRICAL LTG		372		16							
17			720	GAZEBO PLATFORM RECEPT	N			4	20	1	X				L POLE MTD THEATRICAL LTG			660	18							
19	1000			CONCESSION STAND RECEPT	N			2	20	1	X				L SECURITY LIGHTS	660			20							
21		1000		CONCESSION STAND RECEPT	N			2	20	1	X				L SECURITY LIGHTS		120		22							
23			1000	CONCESSION STAND RECEPT	N			2	20	1	X				N SPARE				24							
25				SPACE	N					X					N SPACE				26							
27				SPACE	N					X					N SPACE				28							
29				SPACE	N					X					N SPACE				30							
31				SPACE	N					X					N SPACE				32							
33				SPACE	N					X					N SPACE				34							
35				SPACE	N					X					N SPACE				36							
37				SPACE	N					X					N SPACE				38							
39				SPACE	N					X					N SPACE				40							
41				SPACE	N					X					N SPACE				42							
PHASE TOTALS																				PHASE TOTALS				1752	1212	1380
Total Phase A:																				CONNECTED VA (CODE N):				9120		
Total Phase B:																				CONNECTED VA (CODE L):				2184		
Total Phase C:																				CONNECTED VA (CODE R):						
																				CONNECTED VA (CODE K):						
																				TOTAL CONNECTED KVA				11.3		
																				LCL KVA (25% OF CODE L):				0.5		
																				DEMAND KVA (CODE R):						
																				DEMAND KVA (CODE K):						
																				TOTAL ADJUSTED KVA (W/CL AND DEMAND):				11.9		
																				TOTAL PANEL AMPS:				31.4		
																				ADJUSTED AMPS W/CL AND DEMAND:				32.9		

PROVIDE LISTED HANDLE TIES AS REQUIRED FOR MULTIWIRE BRANCH CIRCUITS, PER N.E.C. 210.4

NEMA 3R WEATHERPROOF STAINLESS STEEL ENCLOSURE

BOA Architecture
Government Services

CITY OF TORRANCE WILSON PARK
GAZEBO STRUCTURE

2300 JEFFERSON STREET, TORRANCE, CA 90501

1511 Cota Ave. Long Beach, CA 90813 Tel. 562-912-7900

No.	Date	Revision	By	Ok

Designer: TL
CAD Draft: TL
Architect: LN
Engineer: TL
Client: TORRANCE
Date Issue: 03-14-2016
Job Number: BOA #15-2699

Client: CITY OF TORRANCE

Consultant: THOMAS K. LEW ASSOCIATES
10000 WILSON PARK DRIVE
CANTON, CA 95716
Tel: 925-255-0000

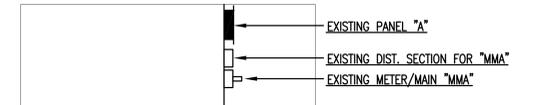
REGISTERED PROFESSIONAL ENGINEER
THOMAS K. LEW
No. 015593
Exp. 12-31-2017
MTC SIGNED: 03-14-2016
ELECTRICAL
STATE OF CALIFORNIA

• SINGLE LINE DIAGRAM,
• PANEL SCHEDULES

E2

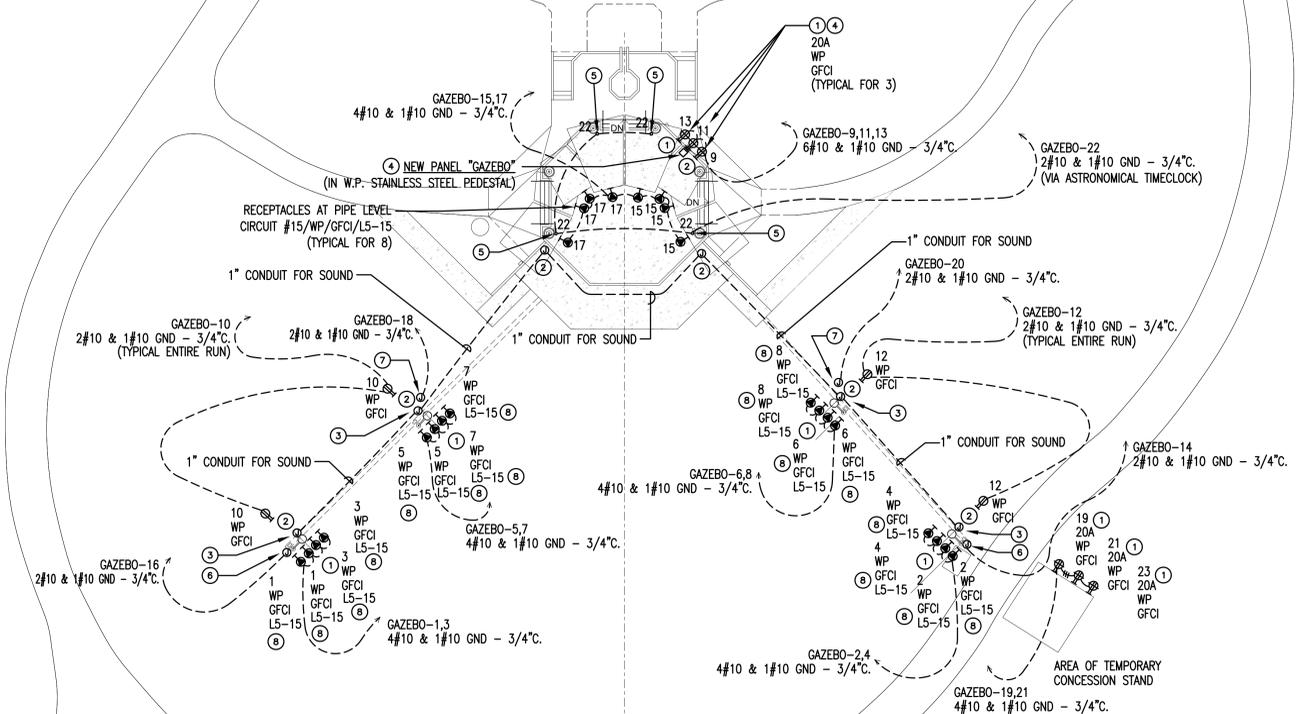
FIXTURE SCHEDULE

TYPE	LAMPS	VOLTS	DESCRIPTION	MANUFACTURER
A 124	L.E.D.	120	THEATRICAL LIGHT, MOUNTED AT 12'-0" OUTDOOR WATERPROOF RATED FIXTURE. COORDINATE FIXTURE, ACCESSORIES AND THEATRICAL CONTROLS WITH LIGHTING DESIGNER. NOTE: THEATRICAL FIXTURES IN THEME PARKS FOR THEMES AND SPECIAL EFFECTS ARE EXEMPT FROM TITLE 24 REQUIREMENTS.	ETC ELECTRONIC THEATRE CONTROLS DESIRE SERIES D60XTI
B 110	L.E.D.	120	THEATRICAL LIGHT, MOUNTED AT 12'-0" OUTDOOR WATERPROOF RATED FIXTURE. COORDINATE FIXTURE, ACCESSORIES AND THEATRICAL CONTROLS WITH LIGHTING DESIGNER. NOTE: THEATRICAL FIXTURES IN THEME PARKS FOR THEMES AND SPECIAL EFFECTS ARE EXEMPT FROM TITLE 24 REQUIREMENTS.	ETC ELECTRONIC THEATRE CONTROLS DESIRE SERIES D40XTI
C 30	30 WATTS L.E.D. 3810 LUMENS	120-277	MEDIUM CURVED SEMI-CUTOFF WALLPACK UNIVERSAL VOLTAGE L.E.D. DRIVER. COORDINATE FINISH WITH OWNER. COORDINATE FIXTURE WITH LIGHTING DESIGNER AND OWNER.	DECO LIGHTING D401-LED-UNV



ENLARGED BLDG 'C' PLAN SCALE: 1/4" = 1'-0"

- KEYED NOTES:**
- PROVIDE W.P. GFCI RECEPTACLES IN STAINLESS STEEL 30" HEIGHT PEDESTAL, WITH INTEGRAL PEDESTAL BASE. COORDINATE PEDESTAL HEIGHT AND COLOR WITH OWNER. PEDOC POWER SOLUTIONS STAINLESS STEEL HINGED TOP MODEL WITH INTEGRAL BASE PEDESTAL, OR EQUAL STAINLESS STEEL PEDESTAL. U.L. LISTED, NEMA 3R RATED. COORDINATE AS REQUIRED.
 - PROVIDE STAINLESS STEEL PEDESTAL (MATCHING RECEPTACLE PEDESTAL) FOR THEATRICAL SHOW DMX VERO WIRELESS TRANSMITTER. COORDINATE REQUIREMENTS WITH SOUND VENDOR. U.L. LISTED, NEMA 3R RATED. COORDINATE AS REQUIRED.
 - COORDINATE WITH STAINLESS STEEL PEDESTAL MANUFACTURER, AND IF POSSIBLE PROVIDE SINGLE CUSTOM MADE PEDESTAL, CONSISTING OF W.P. GFCI RECEPTACLES, AND THEATRICAL SHOW DMX VERO WIRELESS TRANSMITTER. PEDESTAL SHALL HAVE BARRIER TO DIVIDE HIGH VOLTAGE AND LOW VOLTAGE, BE U.L. LISTED, AND NEMA 3R RATED.
 - COORDINATE WITH STAINLESS STEEL PEDESTAL MANUFACTURER, AND IF POSSIBLE PROVIDE SINGLE CUSTOM MADE PEDESTAL, CONSISTING OF PANELBOARD "GAZEBO" AND (3) DOUBLE DUPLEX RECEPTACLES. PEDESTAL SHALL BE U.L. LISTED, AND NEMA 3R RATED. COORDINATE AS REQUIRED.
 - COLUMN MOUNTED SECURITY LIGHT FIXTURE TYPE "C" CONTROLLED BY PHOTOSENSOR, WITH MANUAL OVER-RIDE (NO DIMMING, NO HIGH/LOW, NO MOTION SENSOR ETC). NOTE: PER EXCEPTION 3 TO SECTION 130.2(c)3 OF THE BUILDING ENERGY EFFICIENCY STANDARDS NON-POLE MOUNTED LUMINAIRE WITH A MAXIMUM RATED WATTAGE OF 30 WATTS SHALL NOT BE REQUIRED TO MEET THE REQUIREMENTS OF SECTION 130.2(c)3.
 - LIGHT POLE WITH (3) TYPE "A" THEATRICAL FIXTURES MOUNTED AT 12'-0" MOUNTING HEIGHT. COORDINATE CONTROL OF FIXTURE WITH DMX CONTROLLER. THE LIGHT POLE HAS BEEN DESIGNED AS "TREE", WITH THE LIGHT FIXTURES ATTACHED TO THE BRANCHES. SEE DETAIL ON ARCHITECTURAL DRAWINGS. NOTE: PER EXCEPTION 4 TO SECTION 130.2(c)3 OF THE BUILDING ENERGY EFFICIENCY STANDARDS OUTDOOR LIGHTING IN THEME PARKS FOR THEMES AND SPECIAL EFFECTS SHALL NOT BE REQUIRED TO MEET THE REQUIREMENTS OF SECTION 130.2(c)3.
 - LIGHT POLE WITH (6) TYPE "B" THEATRICAL FIXTURES MOUNTED AT 12'-0" MOUNTING HEIGHT. COORDINATE CONTROL OF FIXTURE WITH DMX CONTROLLER. THE LIGHT POLE HAS BEEN DESIGNED AS "TREE", WITH THE LIGHT FIXTURES ATTACHED TO THE BRANCHES. SEE DETAIL ON ARCHITECTURAL DRAWINGS. NOTE: PER EXCEPTION 4 TO SECTION 130.2(c)3 OF THE BUILDING ENERGY EFFICIENCY STANDARDS OUTDOOR LIGHTING IN THEME PARKS FOR THEMES AND SPECIAL EFFECTS SHALL NOT BE REQUIRED TO MEET THE REQUIREMENTS OF SECTION 130.2(c)3.
 - COORDINATE RECEPTACLE TYPE WITH PARK SERVICES.



ELECTRICAL PLAN

SCALE: 1/16" = 1'-0"

No.	Date	Revision	By	Ck

Designer: TL	City of Torrance
CAD Draft: TL	City of Torrance
Architect: LN	City of Torrance
Engineer: TL	City of Torrance
Client: TORRANCE	City of Torrance
Date Issue: 03-14-2016	City of Torrance
Job Number: BOA #15-2689	City of Torrance

Client: CITY OF TORRANCE
 Consultant: THOMAS K. LEW ASSOCIATES
 THOMAS K. LEW
 ENGINEER
 CALIFORNIA, CA 90746
 TEL: (562) 305-1800
 FAX: (562) 305-1801



ELECTRICAL PLAN

E3

STATE OF CALIFORNIA
Electrical Power Distribution
 CEC-NRCC-ELC-01-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-ELC-01-E
 Electrical Power Distribution
 Commissioning - Construction Documents
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

Project Address: 2300 JEFFERSON STREET TORRANCE, CA 90501 Climate Zone: ZONE #6 Conditioned Floor Area: Unconditioned Floor Area:

General Information
 Building Type: Nonresidential High-Rise Residential Hotel/Motel
 Schools Relocatable Public Schools Conditioned Spaces Unconditioned Spaces
 Phase of Construction: New Construction Addition Alteration

A. Electrical Service Metering NOT APPLICABLE: EXISTING TO REMAIN

Each newly installed electrical service (in both existing and newly constructed buildings) is required to be metered, as set out in Table 130.5-A, which is reproduced below.

Fill out a separate line for each electrical service that is connected to the building.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (check all that are present)						Field Inspector
		A	B	C	D	E	F	
Designation/location in building/description	kVA							

STATE OF CALIFORNIA
COMMISSIONING - CONSTRUCTION DOCUMENTS
 CEC-NRCC-CXR-02-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-CXR-02-E
 Commissioning - Construction Documents
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

Best Practice					
A complete step by step sequence of operation is included defining the lighting levels (max and min), zones, interaction with occupants, interaction with occupancy and time-clock controls, and interaction with lighting on-off or dimming switches.				N/A	
Interface with BAS or other lighting control systems is defined and is fully compatible for all features of the sequence required. Interface shown on lighting and controls drawings.				N/A	
Daylight dimming controls are properly integrated with emergency fixtures, using separate ballasts for dimming and emergency backup.				N/A	
Daylight zones that penetrate more than one row of fixtures from the windows have the fixtures closer to the windows receiving a lower light command to create a more even lighting and save energy.				N/A	
The ballast specified is able to turn down as low as the specified daylight dimming system.				N/A	
To save energy, dimming specifications require that the illumination during night time shall be adjusted to be 20% or more lower than the daytime target, since the apparent illumination at night will appear higher.				N/A	

OUTDOOR LIGHTING CONTROLS AND EQUIPMENT

130.2(a)					
Outdoor incandescent lighting rated over 100 watts is controlled by a motion sensor.				N/A	
130.2(c)1 All outdoor lighting is controlled by photocontrol or outdoor astronomical time-switch control.	YES			N/A	YES
130.2(c)3 Outdoor lighting where bottom of luminaire is mounted 24 feet or less above the ground is controlled by motion sensors or other controls that are capable of reducing the lighting power of each luminaire by 40 to 80% in response to the area being vacated.				N/A	
130.2(c)4 Automatic lighting controls shown on plans for building facade, ornamental hardscape or outdoor dining lighting includes part-night lighting control, motion sensor control, or time-based control.	YES			N/A	YES

NOTES

SERVICE HOT WATER HEATING

110.3(c)2					
SHW systems with circulating pumps or with electrical heat trace have automatic controls that turn off the system during unoccupied periods.				N/A	

STATE OF CALIFORNIA
COMMISSIONING - CONSTRUCTION DOCUMENTS
 CEC-NRCC-CXR-02-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-CXR-02-E
 Commissioning - Construction Documents
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

General Information

Climate Zone: ZONE #6 Building Type: NON-RESIDENTIAL Conditioned Area (sf):
 Reviewer's Name: THOMAS LEW ASSOCIATES Reviewer's Agency:
 Note: Design Review for each system/subsystem must be submitted

Enforcement Agency: Permit Number:
 Enforcement Agency Use: Checked by Enforcement Agency Use: Date

Code Section	Measure	Design Reviewer					Designer Response
		Yes, Complies	Does Not Comply	Consider Better Practice	Complies Will Include in Next Draft	Not Included - State Reason	
ENVELOPE							
JOINTS AND OTHER OPENINGS							
110.7	Plans indicate that joints, penetrations and other openings in the building envelope shall be sealed to limit infiltration and exfiltration.				N/A		
120.7	Roof/ceiling, wall and floor and soffit insulation must meet requirements identified in this section.				N/A		
INSULATION AND ROOFING PRODUCTS							
140.3(a)1.A	Roofing products for low-sloped roofs meet minimum solar reflectance of 0.63 and minimum thermal emittance of 0.75 OR minimum Solar Reflectance Index of 75. Steep-sloped roofs meet requirements of 0.20 and 0.75 OR 16, respectively.				N/A		
140.3(a)1.A-B	Exterior roofs, ceilings, and exterior walls, floors and soffits must have an overall assembly U-factor no greater than the applicable value in TABLE 140.3-B, C or D.				N/A		
NOTES							
LIGHTING							
LIGHTING CONTROLS							
130.1(a)	Accessible, independent switching or a control device is included for all areas enclosed by ceiling height partitions.				N/A		
130.1(a)4	General lighting is controlled separately from all other lighting systems.				N/A		

STATE OF CALIFORNIA
DESIGN REVIEW KICKOFF
 CEC-NRCC-CXR-01-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-CXR-01-E
 Design Review Kickoff
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

A. General Information

Climate Zone: ZONE #6 Building Type: NON-RESIDENTIAL Conditioned Area (sf):
 Reviewer's Name: THOMAS LEW ASSOCIATES Reviewer's Agency:
 Enforcement Agency: Permit Number:
 Enforcement Agency Use: Checked by Enforcement Agency Use: Date

DATE OF DESIGN REVIEW KICKOFF
 03-14-2016

DESIGN REVIEW CHECKLISTS PROVIDED TO DESIGN TEAM
 YES X NO

DESIGN REVIEWER QUALIFICATIONS:

<10,000 ft²: design engineer
 >10,000 ft² and <50,000 ft²: in-house engineer not associated with project or third-party design engineer
 >50,000 ft² or complex mechanical system: third-party design engineer

LIST OF MEETING ATTENDEES:

Owner: CITY OF TORRANCE WILSON PARK Design Reviewer: THOMAS LEW ASSOCIATES
 Project Manager: THOMAS LEW ASSOCIATES Design Engineer(s): THOMAS LEW ASSOCIATES

DOCUMENTS RECEIVED BY DESIGN REVIEWER FOR DESIGN REVIEW KICKOFF:

Owner's Project Requirements Basis of Design or Narrative
 Drawing Set (issue & date): ARCHITECTURAL DRAWINGS
 Specifications: Other:

PROJECT SCOPE:
 IMPROVEMENT OF EXISTING PARK AREA

DESIGN ELEMENTS AND ASSUMPTIONS:
 NEW THEATRICAL LIGHTING, AND NEW SECURITY LIGHTING

HVAC SYSTEM SELECTION:

RECOMMENDED ENERGY EFFICIENCY MEASURES:

OTHER COMMENTS:

COORDINATION:
 TARGET CONSTRUCTION DOCUMENT REVIEW DATE: 03-14-2016
 TARGET PERMIT SUBMITTAL DATE: 03-14-2016

STATE OF CALIFORNIA
Electrical Power Distribution
 CEC-NRCC-ELC-01-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-ELC-01-E
 Electrical Power Distribution
 Commissioning - Construction Documents
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

EXISTING SWITCHBOARD	72 KVA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXISTING TO REMAIN		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(METERING FUNCTION BY S.C.E.)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 130.5-A - MINIMUM REQUIREMENTS FOR METERING OF ELECTRICAL LOAD

Meter Rating (kVA)	50 kVA or less	More than 50kVA and less than or equal to 250 kVA	More than 250 kVA and less than or equal to 1000kVA	Services rated more than 1000kVA
Instantaneous (at the time) kW demand	Required	Required	Required	Required
Historical peak demand (kW)	Not required	Not required	Required	Required
Resettable kWh	Required	Required	Required	Required
kWh per rate period	Not required	Not required	Not required	Required

STATE OF CALIFORNIA
COMMISSIONING - CONSTRUCTION DOCUMENTS
 CEC-NRCC-CXR-02-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-CXR-02-E
 Commissioning - Construction Documents
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: THOMAS LEW ASSOCIATES
 Company: THOMAS LEW ASSOCIATES Signature Date: 03-14-2016
 Address: 19521 REINHART AVE. CEI/HERS Certification Identification (if applicable):
 City/State/Zip: CARSON, CA 90746 Phone: (949) 302-1820

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
- I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: THOMAS LEW ASSOCIATES Responsible Designer Signature: [Signature]
 Company: THOMAS LEW ASSOCIATES Date Signed: 03-14-2016
 Address: 19521 REINHART AVE. License: E15593
 City/State/Zip: CARSON, CA 90746 Phone: (949) 302-1820

STATE OF CALIFORNIA
COMMISSIONING - CONSTRUCTION DOCUMENTS
 CEC-NRCC-CXR-02-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-CXR-02-E
 Commissioning - Construction Documents
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

130.1(b)	General lighting of enclosed spaces 100 sf or larger with a lighting load that exceeds 0.5 W/sf, have multi-level lighting controls from at least one of the following methods: manual dimming, lumen maintenance, tuning, automatic daylighting controls, demand responsive lighting controls. Control steps are in accordance with Table 130.1-A.				N/A	
130.1(c)	Shut off controls are controlled with occupant sensing controls, automatic time-switch control, signal from another building system or other control and are shown for all indoor lighting systems.				N/A	
130.1(c)5	Offices 250 square feet or smaller; multipurpose rooms of less than 1000 square feet, and classrooms and conference rooms of any size, shall be equipped with occupant sensor(s) to shut off the lighting.				N/A	
130.1(c)6	Lighting in corridors and stairwells shall be controlled by occupant sensing controls that separately reduce lighting power in each space by at least 50% when the area is unoccupied.				N/A	
130.1(e)	For buildings greater than 10,000 sf, demand response controls should be included to reduce total building lighting power by a minimum of 15%.				N/A	

DAYLIGHT AREA

140.3(c)					
Daylight areas required for conditioned or unconditioned spaces greater than 5,000 ft ² of roof area and with ceiling height greater than 15 feet are shown on building plans and meet requirements of this section.				N/A	

DAYLIGHT CONTROLS

130.1(d)2					
All skylit daylight zones, primary sidelit daylight zones and secondary sidelit daylight zone are shown on plans. Controls of skylit and sidelit zones are independent and provide multi-level lighting in accordance with Table 130.1-A. Plans should indicate that general lighting power is reduced by a minimum of 65% when daylight illuminance is 150% of design illuminance.				N/A	
Best Practice The locations of all photo sensors are shown on the plans. Height and position criteria are also shown. Photo sensors are not installed in direct sunlight nor in direct light of lighting fixtures.				N/A	
Best Practice Specification defines the amount of light to be gathered by the photo sensor in relation to its location for the lighted surface and this matches the application. For example: if 5 FC on the horizontal floor is the maintained lighting level and the sensor is mounted 15 feet off the ground, the sensor must be capable of detecting 5 FC from floor at that distance.				N/A	
Best Practice Daylight dimming zones have consistent window/glazing types and orientation (e.g., a single zone should not include east and south facing glass or have a section of tall window-wall and another wall section of smaller windows).				N/A	
Best Practice Specifications state that sensor and dimming settings are set up and calibrated after furniture and final finishes and all lighting equipment are installed and operational.				N/A	

STATE OF CALIFORNIA
DESIGN REVIEW KICKOFF
 CEC-NRCC-CXR-01-E (Revised 06/14) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE
 NRCC-CXR-01-E
 Design Review Kickoff
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: THOMAS LEW ASSOCIATES
 Company: THOMAS LEW ASSOCIATES Signature Date: 03-14-2016
 Address: 19521 REINHART AVE. CEI/HERS Certification Identification (if applicable):
 City/State/Zip: CARSON, CA 90746 Phone: (949) 302-1820

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
- I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: THOMAS LEW ASSOCIATES Responsible Designer Signature: [Signature]
 Company: THOMAS LEW ASSOCIATES Date Signed: 03-14-2016
 Address: 19521 REINHART AVE. License: E15593
 City/State/Zip: CARSON, CA 90746 Phone: (949) 302-1820

BOA Architecture Government Services

CITY OF TORRANCE WILSON PARK
 GAZEBO STRUCTURE

2300 JEFFERSON STREET, TORRANCE, CA 90501
 1511 Cota Ave. Long Beach, CA 90813 Tel. 562-912-7900

Revision	By	Date

No.	Date	Revision

Client: CITY OF TORRANCE
 Designer: TL
 CAD Draft: TL
 Architect: LN
 Engineer: TL
 Client: TORRANCE
 Date Issue: 03-14-2016
 Job Number: BOA #15-2699



TITLE: 24 FORMS

E4

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
 CEC-NRCC-LTO-02-E (Revised 06/14)
 CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE
 Outdoor Lighting Controls
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016
 NRCC-LTO-02-E (Page 1 of 3)

The NRCC-LTO-02-E shall be used to document all mandatory outdoor lighting controls that are applicable to the project.

Mandatory Outdoor Lighting Control Declaration Statements

Check all that apply:

- Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with §110.9.
- Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with §130.4(b).
- All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with §130.1
- Part-Night Outdoor Lighting Controls, as defined in Section 100.1, shall meet the requirements in Section 110.9(b)5
- All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c), shall be controlled by a motion sensor.
- All outdoor luminaires rated for use with lamps greater than 150 lamp watts, determined in accordance with Section 130.0(c), shall comply with Backlight, Uplight, and Glare (collectively referred to as "BUG") in accordance with Section 130.2(b)
- All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control in accordance with Section 130.2(c)1
- All installed outdoor lighting shall be circuted and independently controlled from other electrical loads by an automatic scheduling control in accordance with Section 130.2(c)2
- All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls in accordance with Section 130.2(c)3
- For Outdoor Sales Frontage, Outdoor Sales Lots, and Outdoor Sales Canopies lighting, an automatic lighting control in accordance with Section 130.2(c)4
- For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control in accordance with Section 130.2(c)5
- Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with §130.4(a). Outdoor lighting controls shall comply with the applicable requirements of Section 130.2(c) and Reference Nonresidential Appendix NA7.8

STATE OF CALIFORNIA
OUTDOOR LIGHTING
 CEC-NRCC-LTO-01-E (Revised 06/14)
 CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE
 Outdoor Lighting
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016
 NRCC-LTO-01-E (Page 3 of 4)

A. OUTDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

A	B	C	D				E	F	G	H	I	
			How wattage was determined	CEC Code from Table	§100.9	§100.10					Pass	Fail
C	COLUMN MOUNTED WALL PACK	30	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	120	SECURITY LIGHT	N/A	<input type="checkbox"/>	<input type="checkbox"/>
INSTALLED WATTS PAGE TOTAL:									120	Enter sum total of all pages (Sum Total INSTALLED Outdoor lighting wattage) into NRCC-LTO-01-E, Page 2	120	

STATE OF CALIFORNIA
OUTDOOR LIGHTING
 CEC-NRCC-LTO-01-E (Revised 06/14)
 CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE
 Outdoor Lighting
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016
 NRCC-LTO-01-E (Page 1 of 4)

Project Address: 2300 JEFFERSON STREET TORRANCE, CA 90501 Total Illuminated Hardscape Area

General Information
 Phase of Construction: New Construction Addition Alteration
 Outdoor Lighting Zone (OLZ) OLZ-1 OLZ-2 OLZ-3 OLZ-4
 I have confirmed with the AHJ which OLZ applies to this site. For default lighting zone designations, see Title 24 Part 6, §10-114

1.
 2.
 3.
 4.
 5.

LIGHTING COMPLIANCE DOCUMENTS (check box for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

<input checked="" type="checkbox"/>	NRCC-LTO-01-E	Certificate of Compliance
<input checked="" type="checkbox"/>	NRCC-LTO-02-E	Outdoor Lighting Controls Certificate of Compliance
<input checked="" type="checkbox"/>	NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance

Summary of Allowed Outdoor Lighting Power

	Watts
1. Sum Total ALLOWED Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1	120
Complies ONLY if Installed ≤ Allowed	
2. Sum Total INSTALLED Outdoor lighting Wattage from NRCC-LTO-01-E, page 3	120

Declaration of Required Installation Certificates - Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
 CEC-NRCC-LTO-02-E (Revised 06/14)
 CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE
 Outdoor Lighting Controls
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016
 NRCC-LTO-02-E (Page 2 of 3)

MANDATORY OUTDOOR LIGHTING CONTROL SCHEDULE and FIELD INSPECTION CHECKLIST

A	B	C	Standards Complying With ¹ (✓ all that apply, or enter 'E' if Exempted)							N	O	Field Inspector
			D	E	F	G	H	I				
EXTERIOR AREA	ASTRO TIME CLOCK	X	X	X	X	X	X	X			<input type="checkbox"/>	<input type="checkbox"/>

STATE OF CALIFORNIA
OUTDOOR LIGHTING
 CEC-NRCC-LTO-01-E (Revised 06/14)
 CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE
 Outdoor Lighting
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016
 NRCC-LTO-01-E (Page 4 of 4)

DOCUMENTATION-AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: THOMAS LEW ASSOCIATES
 Signature: *Thomas Lew*
 Signature Date: 03-14-2016
 Address: 19521 REINHART AVE.
 City/State/Zip: CARSON, CA 90746
 Phone: (949) 302-1820

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
 1. The information provided on this Certificate of Compliance is true and correct.
 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conforms to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: THOMAS LEW ASSOCIATES
 Signature: *Thomas Lew*
 Signature Date: 03-14-2016
 Address: 19521 REINHART AVE.
 City/State/Zip: CARSON, CA 90746
 License: E15593
 Phone: (949) 302-1820

STATE OF CALIFORNIA
OUTDOOR LIGHTING
 CEC-NRCC-LTO-01-E (Revised 06/14)
 CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE
 Outdoor Lighting
 Project Name: CITY OF TORRANCE WILSON PARK Date Prepared: 03-14-2016
 NRCC-LTO-01-E (Page 2 of 4)

NRCI-LTO-01-E - Must be submitted for all buildings Field Inspector
 NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance. Field Inspector

Declaration of Required Certificates of Acceptance - Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

NRCA-LTO-02-A - Must be submitted for outdoor lighting controls. Field Inspector

Schedule of luminaires exempt from the outdoor lighting power requirements in §140.7

Name or Symbol	Description of exempt luminaire in accordance with the exemptions
TYPE "A"	OUTDOOR LIGHTING FOR THEME PARK
TYPE "B"	OUTDOOR LIGHTING FOR THEME PARK

Schedule of luminaires exempt from the cutoff requirements in §130.2(b)

Name or Symbol	Description of exempt luminaire in accordance with the exemptions
TYPE "A"	OUTDOOR LIGHTING FOR THEME PARK
TYPE "B"	OUTDOOR LIGHTING FOR THEME PARK
TYPE "C"	WALL PACK - FIXTURE RATED LESS THAN 150 WATTS

Schedule of luminaires exempt from the outdoor lighting control requirements in §130.2(c)

Name or Symbol	Description of exempt luminaire in accordance with the exemptions
TYPE "A"	OUTDOOR LIGHTING FOR THEME PARK
TYPE "B"	OUTDOOR LIGHTING FOR THEME PARK
TYPE "C"	NON-POLE MOUNTED FIXTURE WITH MAXIMUM RATED WATTAGE OF 30 WATTS

BOA Architecture Government Services

CITY OF TORRANCE WILSON PARK
 GAZEBO STRUCTURE
 2300 JEFFERSON STREET, TORRANCE, CA 90501

No.	Date	Revision	By	Ck

Designer: TL	TL
Architect: LN	LN
Engineer: TL	TL
Client: TORRANCE	TORRANCE
Date Issue: 03-14-2016	03-14-2016
Job Number: BOA #15-2699	BOA #15-2699

Client: CITY OF TORRANCE
 Consultant: THOMAS LEW ASSOCIATES
 CARSON, CA 90746
 Tel: (949) 302-1820
 Fax: (949) 302-1820



• TITLE 24 FORMS

E6

SECTION 260100
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

- Basic electrical methods.
- Grounding.
- Hangers and supports.
- Electrical identification.
- Electrical system testing and inspection.

B. Related Documents: The Contract Documents, as defined in Section 01110 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

1.2 BASIC ELECTRICAL METHODS

A. Drawings are schematic and diagrammatic. Use judgment and care to install electrical Work to function properly and fit within building construction and finishes. Electrical conductors, conduit, components, not shown or specified, which are required for any device or system to produce a complete and operative system are required to be furnished and installed.

B. Exact locations of outlets are determined from dimension on Drawings, manufacturer's shop drawings, or as may be determined at Project Site. Do not scale Drawings for exact location of any item. Verify item mounting heights as required by project conditions prior to rough-in.

C. Route conduits and wiring associated with new equipment and systems above ceilings, in existing chases, and concealed within building structure.

D. Surface mounted raceways or conduit permitted only at locations indicated on Drawings.

E. Circuit grouping, conduit or cable runs and home runs are indicated with number of conductors shown in each raceway to clarify operation and function of various systems. Provide proper number of conductors and conduits or cables to provide operative system as indicated on Contract Documents. Do not regroup any feeder circuits, branch

CITY OF TORRANCE 260100 - 1
WILSON PARK GAZEBO

SECTION 260100
BASIC ELECTRICAL MATERIALS AND METHODS

circuits, home runs, and zone alarms at any point, from that shown on Contract Documents.

F. Branch and home run circuits are indicated as 2, 3, or 4 wire circuits unless otherwise noted. Do not connect two ungrounded conductors to same circuit breaker/fused switch in any panel. Circuit runs consist of a maximum of five conductors: 3 phase conductors, 1 neutral conductor, and 1 equipment ground conductor, unless otherwise noted. Do not splice branch circuit conductors in any panels, safety switches, or non-automatic circuit breakers in separate enclosures.

G. New equipment, switches, devices, shown mounted on and/or adjacent to equipment, which if installed, would impair proper operation of existing or new equipment, shall be removed and relocated by Contractor as required so equipment will function properly. Notify City Engineer immediately if any such condition exists.

H. Seal and make permanently watertight penetrations by electrical raceways or equipment through ceilings, walls or floors.

- Seal penetrations in non-fire rated ceilings, walls or floors material specified in Section 07900 - Sealants.
- Seal penetrations in fire rated walls with material specified in Section 07840 - Fire-stopping.

I. Tighten electrical connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A, and NFPA 70.

J. Install equipment and materials to provide required maintenance and code working clearance for servicing and maintenance. Coordinate final location of concealed equipment and devices requiring access with final location of required access panels and doors. Allow required space for removal of parts that require replacement or servicing.

K. Remove existing equipment, lighting fixtures, switches, and receptacles as required to facilitate new installation and as specified in Section 02223 - Selective Demolition. Remove existing wiring and conduit serving items to be removed. Conduit in inaccessible areas shall be cut off below finished surfaces and existing surface patched to match existing. Provide blank plates on existing flush mounted outlet boxes that will be abandoned. Remove all abandoned conductors from raceways.

CITY OF TORRANCE 260100 - 2
WILSON PARK GAZEBO

SECTION 260100
BASIC ELECTRICAL MATERIALS AND METHODS

PART 2 - PRODUCTS

2.1 GROUNDING

A. Wire:

- Material: Stranded copper.
- Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

2.2 HANGERS AND SUPPORTS

A. Product Requirements: Furnish and install approved materials, sizes, and types of anchors, fasteners, and supports to carry loads of equipment and conduit, including weight of wire in conduit plus 300 pounds.

B. Materials and Finishes: Corrosion resistive.

C. Anchors and Fasteners:

- Steel Structural Elements: Beam clamps and welded fasteners.
- Concrete Surfaces: Self-drilling anchors and expansion anchors.
- Hollow Masonry, Plaster, and Gypsum Board Partitions: Toggle bolts and hollow wall fasteners.
- Solid Masonry Walls: Expansion anchors.
- Sheet Metal: Sheet metal screws.
- Wood: Wood screws.

2.3 ELECTRICAL IDENTIFICATION

A. Wire and Cable Markers:

- Description: Cloth tape or tubing type wire markers.
- Locations: Each conductor at panel board gutters, pull boxes, outlet and junction boxes, and each load connection.
- Legend:

CITY OF TORRANCE 260100 - 3
WILSON PARK GAZEBO

SECTION 260100
BASIC ELECTRICAL MATERIALS AND METHODS

a. Power and Lighting Circuits: Branch circuit or feeder number indicated on Drawings.

b. Control Circuits: Control wire number indicated on schematic and interconnection diagrams on Drawings.

c. Communications Cable: Per section 16705.

B. Conduit Markers:

- Location: Furnish markers for each conduit longer than 10 feet.
- Spacing: 20 feet.

PART 3 - EXECUTION

3.1 INSTALLATION - GROUNDING

A. Provide grounding in conformance with NFPA 70.

B. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

C. Testing and Inspection:

- Inspect and test in accordance with NETA ATS, except Section 4.
- Perform inspections and tests listed in NETA ATS, Section 7.13.

3.2 INSTALLATION - HANGERS AND SUPPORTS

A. Install products in accordance with manufacturer's published instructions.

B. Furnish and install anchors, fasteners, and supports in accordance with NECA SI.

C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.

D. Do not use spring steel clips and clamps.

E. Do not use powder-actuated anchors.

F. Obtain permission from City Engineer before drilling or cutting structural members.

CITY OF TORRANCE 260100 - 4
WILSON PARK GAZEBO

SECTION 260100
BASIC ELECTRICAL MATERIALS AND METHODS

G. Fabricate supports from structural steel angle or structural steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

H. In wet and damp locations use structural steel channel supports to stand cabinets and panelboards one inch off wall.

3.3 FIELD QUALITY CONTROL - ELECTRICAL TESTING AND INSPECTION

A. Section 01450 - Quality Control: Field testing and inspection.

B. Section 18108 Commissioning: Requirements related to Division 16 Commissioning

C. Regulatory Requirements:

- Safety Practices: Include, but not limited to, the following requirements:
 - Occupational Safety and Health Act of 1970 - OSHA.
 - Accident Prevention Manual for Industrial Operations, Seventh Edition, National Safety Council, Chapter 4.
 - Applicable State and Local Safety Operating Procedures.
 - NETA Safety/Accident Prevention Program.
 - NFPA 70E - Electrical Safety Requirements for Employee Workplace.
 - American National Standards for Personnel Protection, ANSI Z244.1.
- Perform tests with apparatus de-energized except where otherwise specifically required herein.
- Power Circuits: Conductors shorted to ground by a hot line grounded device approved for the purpose.

D. Tests and inspections include, but are not limited to the following:

- Proper operation of lights and equipment.
- Continuity of raceway system.
- Insulation leakage and impedances.

CITY OF TORRANCE 260100 - 5
WILSON PARK GAZEBO

SECTION 260100
BASIC ELECTRICAL MATERIALS AND METHODS

4. Sub-system tests indicated in other Sections.

E. Load balance all electrical phases, at device, panels, and switchboards.

F. Perform electrical system testing and inspection as specified in each Division 16 Section and as specified in this Section.

END OF SECTION

CITY OF TORRANCE 260100 - 6
WILSON PARK GAZEBO

SECTION 260519
CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes:

- Building wire and cable.
- Branch-circuit cable.
- Wiring connectors and connections.

B. Related Documents: The Contract Documents, as defined in Section 01110 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

PART 2 - PRODUCTS

2.1 BUILDING WIRE AND CABLE

A. Description: Single conductor insulated wire.

B. Conductor: Copper.

C. Insulation Voltage Rating: 600 Volts.

D. Insulation: NFPA 70, Type THHN/THWN.

E. Multi-conductor cable: Metal clad cable, Type MC with ground wire.

2.2 WIRING CONNECTORS

A. Compression Connectors; Conductor sizes #12 through #6 AWG:

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturers published instructions and NECA SI.

CITY OF TORRANCE 260519 - 1
WILSON PARK GAZEBO

SECTION 260519
CONDUCTORS AND CABLES

B. Use solid conductor for feeders and branch circuits 10 AWG and smaller.

C. Use stranded conductors for control circuits and final connections to all vibration equipment.

D. Use conductor not smaller than 12 AWG for power and lighting circuits.

E. Use conductor not smaller than 14 AWG for control circuits.

F. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.

G. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.

H. Pull all conductors into raceway at same time.

I. Use approved wire pulling lubricant for all building wire.

J. Protect exposed cable from damage.

K. Neatly train and lace wiring inside boxes, equipment, and panelboards in accordance with NECA Standards.

L. Clean conductor surfaces before installing lugs and connectors.

M. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

N. For splices and taps, use only compression connectors for copper conductors, 6 AWG and larger or aluminum conductors 1/0 and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.

O. Use solderless pressure compression connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.

P. Use conductors rated 90 degrees C, inside a ballast compartment or within 6 inches of any ballast.

Q. Conductor Sizes #8 and Larger: Class B stranding.

3.2 WIRING COLOR CODE

A. Comply with the following color code for each voltage system.

B. 208Y/120 Volt System:

- Phase A - Black
- Phase A Switch Leg - Black with "S" tag
- Phase B - Red
- Phase B Switch Leg - Red with "S" tag
- Phase C - Blue
- Phase C - Switch Leg - Blue with "S" tag
- Travelers - Yellow
- Neutral - White
- Equipment Ground - Green.

C. Provide identification tags on each conductor entering panel, switch, junction box and pull box to identify conductor.

3.3 FIELD QUALITY CONTROL

A. Section 01450 - Quality Control: Field testing and inspection.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

CITY OF TORRANCE 260519 - 2
WILSON PARK GAZEBO

SECTION 260519
CONDUCTORS AND CABLES

END OF SECTION

CITY OF TORRANCE 260519 - 3
WILSON PARK GAZEBO

SECTION 265600
EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

- Exterior luminaires and accessories.
- Poles.

B. Related Documents: The Contract Documents, as defined in Section 01110 - Summary of Work, apply to the work of this section. Additional requirements and information necessary to complete the work of this section may be found in other documents.

1.2 SUBMITTALS

A. Conform to Section 01330 - Submittal Procedures: Procedures for submittals.

- Product Data:
 - Fixture dimensions, ratings, and performance data.

PART 2 - PRODUCTS

2.1 LUMINAIRE MANUFACTURERS

A. Per Lighting Plan Fixture Schedule, or equal.

2.2 POLES

A. Manufacturers: Match existing.

B. Material and Finish: Match existing.

C. Section Shape and Dimensions: Match existing.

D. Height: Match existing.

E. Base: Match existing.

F. Accessories: Match existing.

G. Approximate Loading Capacity Ratings: Match existing.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide 3000 PSI minimum concrete for lighting pole bases at locations indicated, in accordance with Section 03300.

B. Install poles plumb. Provide double nuts to adjust plumb. Grout around each base.

C. Install lamps in each luminaire.

D. Bond luminaires, metal accessories and metal poles to branch circuit equipment grounding conductor. Provide supplementary 5/8 inch x 10 foot copper clad rod grounding electrode at each pole.

3.2 ADJUSTING

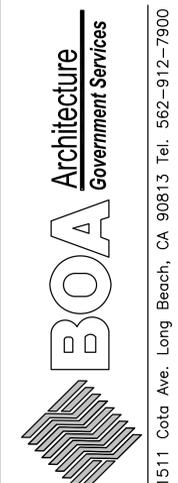
A. Aim and adjust luminaires to provide illumination levels and distribution as directed.

CITY OF TORRANCE 265600 - 1
WILSON PARK GAZEBO

SECTION 265600
EXTERIOR LIGHTING

END OF SECTION

CITY OF TORRANCE 265600 - 2
WILSON PARK GAZEBO



CITY OF TORRANCE WILSON PARK GAZEBO STRUCTURE

2300 JEFFERSON STREET, TORRANCE, CA 90501

No.	Date	Revision	By	Ck

Designer: TL	Checker: TL
CAD Draft: TL	Architect: LN
Engineer: TL	Client: TORRANCE
Date Issue: 03-14-2016	Job Number: BOA #15-2689

Client: CITY OF TORRANCE

Consultant: THOMAS K. LEW ASSOCIATES
1000 S. GARDEN ST., SUITE 100
CANAAN, CA 95716
Tel: 925-268-9000



• SPECIFICATIONS

E8

1511 CoTa Ave. Long Beach, CA 90813 Tel. 562-912-7900