

## GENERAL NOTES

- ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2013 EDITION OF THE CALIFORNIA ELECTRICAL CODE WHICH IS BASED ON THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE.
- RUN CONDUITS CONCEALED IN WALLS WITH DRY WALL CONSTRUCTIONS, UNLESS NOTED OTHERWISE. CUT EXISTING WALLS AS REQUIRED. PATCH AND PAINT TO MATCH EXISTING SURFACE.
- ALL NEW (ADDITIONAL) METALLIC STRUCTURES AND EQUIPMENT FABRICATED WITH METALLIC MATERIALS AS GENERATORS, MOTOR FRAME, ENCLOSURES, ETC, PANELS, RACEWAY SHALL BE PERMANENTLY & EFFECTIVELY GROUNDED SHOWN ON DRAWING OR NOT. GROUND CABLE SHALL BE CONNECTED TO COLD WATER PIPE PER CEC 250-50, TO BUILDING GROUNDING PER CEC 250-50(B) OR CONNECT TO GROUND ROD PER CEC 250-52(C).
- UPDATE ALL POWER PANEL DIRECTORIES AND ELECTRICAL OUTLET IDENTIFICATION LABELS (KROYTAPE) TO REFLECT NEW CONSTRUCTION.
- CONDUIT FITTINGS FOR USE IN EMT RUNS SHALL BE GALVANIZED STEEL. CONNECTORS AND COUPLINGS SHALL BE WATERTIGHT TYPE.
- ALL FLEX AND SEALTIGHT CONDUIT SHALL HAVE A GROUND CONDUCTOR.
- CONDUITS PENETRATING FIRE RATED AREAS SHALL BE SEALED, INSTALL AND OUTSIDE OF CONDUIT, WITH APPROVED FIRE STOP MATERIAL TO MAINTAIN THE SAME FIRE RATING AS ORIGINAL.
- ALL MATERIALS AND WORKS ARE NEW, UNLESS OTHERWISE NOTED. EXISTING ELECTRICAL SYSTEMS ARE NOT SHOWN EXCEPT WHERE INTERFACING IS REQUIRED.
- MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS OR PORTIONS THEREOF AFFECTED BY NEW WORK.
- PROVIDE A QUALIFIED PERSONNEL TO SERVE AS ON-SITE FIRE WATCH DURING DEMOLITION THAT IS HAZARDOUS IN NATURE. THE SOLE DUTY OF FIRE-WATCH PERSONNEL SHALL BE TO WATCH FOR THE OCCURRENCE OF FIRE.
- ALL CABLE/WIRE, CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY & THEY SHALL BE ROUTED TO SUIT ACTUAL FIELD CONDITIONS, EXCEPT WHERE LOCATIONS ARE EXPLICITLY DIMENSIONED ON THE DWGS.
- CONDUIT RUNS, CABLE TRAYS, AND EQUIPMENT/DEVICE ENCLOSURES SHALL BE BONDED TOGETHER TO FORM A CONTINUOUS ELECT. CONDUCTOR. NON-METALLIC RACEWAYS & ENCLOSURES SHALL INCLUDE, BONDING JUMPERS, BUSHINGS, ETC...
- ALL EXISTING SURFACES DAMAGED BY NEW CONSTRUCTION, SHALL BE PATCHED, OR REPAINTED TO MATCH EXISTING CONDITIONS, PAINTED SURFACE SHALL BE PAINTED FROM BREAK TO BREAK. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PATCH & REPAIR ALL DAMAGE TO EXISTING SURFACES AND FINISHES FURTHERMORE, THE AFFECT AREA(S) OF WORK SHALL BE REPAIRED TO MATCH THE FINISH THAT WAS PREVIOUSLY EXISTING, PRIOR TO THE COMMENCEMENT OF WORK.
- WHERE THERE IS A CONFLICT BETWEEN THE DWGS. & ANY RELEVANT CODES, THE CODES SHALL GOVERN, EXCEPT WHERE THE DWGS. INDICATE A QUALITY LEVEL SUPERIOR TO THAT SPECIFIED BY THE CODES.
- IN EVENT OF CONFLICT OR DISCREPANCY BETWEEN DRAWINGS/PLANS, BETWEEN SPECIFICATIONS, BETWEEN CONTRACT DOCUMENTS, BETWEEN DRAWINGS AND SPECIFICATIONS, BETWEEN DRAWINGS AND SITE CONDITIONS, THE CONTRACTOR SHALL PROVIDE THE MORE STRINGENT OF THE DRAWINGS, SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THE CONSTRUCTIONS AND BIDDING PURPOSES.
- ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY OR AS APPROVED BY THE OWNER.

## APPLICABLE CODES & STANDARDS

- 2013 CALIFORNIA ELECTRICAL CODE
- 2013 CALIFORNIA FIRE CODE
- 2013 CALIFORNIA BUILDING CODE
- 2013 CALIFORNIA ENERGY CODE
- 2013 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS

## ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
BLDG	BUILDING
CHN	CHAIN HUNG
CU	COPPER
DWG	DRAWING
(E)	EXISTING
FBO	FURNISHED BY OTHERS
G, GND	GROUND
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
L	LENGTH
MLO	MAIN LUG ONLY
MCB	MAIN CIRCUIT BREAKER
SUR	SURFACE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VD	VOLTAGE DROP
WP	WEATHER PROOF
XFMR	TRANSFORMER
#	NUMBER

## SYMBOL LIST

	PANELBOARD, 208/120V, 3Ø, 4W, UNLESS NOTED
	MOLDED CASE CIRCUIT BREAKER 150A TRIP, 3-POLE
	BRANCH CIRCUIT CONDUIT AND CONDUCTOR, HASH MARKS INDICATE THE QUANTITY OF CONDUCTORS REQUIRED. #10 AWG CONDUCTORS ARE INDICATED. WHERE A NUMBER, #, IS NOT INDICATED THE CONDUCTORS ARE #12 AWG. MINIMUM. SHORT LINES (HASH MARKS) DENOTES PHASE CONDUCTOR. LINE (HASH MARKS) DENOTES NEUTRAL CONDUCTOR. LINE (HASH MARKS) WITH DOT DENOTES #12 AWG INSULATED GROUNDING WIRE. CONDUIT SIZE SHALL BE PER NEC, EXCEPT MINIMUM SIZE SHALL BE 3/4", U.O.N.
	BRANCH CIRCUIT CONDUIT AND CONDUCTOR NO HASH MARKS INDICATES 2#12 AWG AND 1#12 INSULATED GROUNDING WIRE. CONDUIT SIZE SHALL BE 3/4", U.O.N.
	GROUND CONNECTION TO STRUCTURAL BUILDING STEEL
	DISCONNECT SWITCH 30A, 3-POLE
	FUSED DISCONNECT SWITCH
	CONDUIT AND WIRE RUN CONCEALED IN CEILING WALL SPACE UNLESS NOTED.
	JUNCTION BOX OR PULL BOX, SIZE PER CODE

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S1.0	ROLLER HOCKEY RINK CONDUIT SUPPORT AT ROOF

## TYPICAL PLAN LEGEND

	LIGHT, THIN LINES INDICATE EXISTING.
	HEAVY, THICK LINES INDICATE NEW
	HEAVY, SHORT DASHED LINES INDICATE DEMOLITION OR REMOVAL
	UG-UG UNDERGROUND CONDUIT/CABLE
	CONDUIT SUPPORT SYSTEM. SEE DWG S1.0 FOR DETAILS

THIS SYMBOLOGY TO BE USED BY ELECTRICAL AND LAYOUT FOR ALL FLOOR PLANS, EQUIPMENT, DEVICES, UTILITIES, ETC..., SHOWN ON DRAWINGS.

## TITLE 24

- LIGHTING ALLOWANCE CALCULATIONS ARE NOT REQUIRED PER SECTION 140.7 EXCEPTION 4 (OUTDOOR LIGHTING FOR SPORTS, ATHLETIC AND RECREATIONAL SPACES).
- CONTROL REQUIREMENTS OF SECTION 130.2(c)3 ARE NOT REQUIRED PER SECTION 130.2 EXCEPTION 4 TO SECTION 130.2(c)3.
- ALL FIXTURES ARE EQUIPPED WITH PHOTOSENSORS ARE CONTROLLED BY EXISTING AUTOMATIC CONTROLS COMPLIANT WITH SECTION 130.2(c)1 AND 130.2(c)2.

## SCOPE OF WORK

- PROVIDE NEW LIGHTING FIXTURES AND RECEPTACLES TO REPLACE EXISTING.
- ALL PANELBOARDS ARE EXISTING. REPLACE FEEDERS FOR PANELBOARDS AS SHOWN. ALL NEW LIGHTING FIXTURES AND RECEPTACLES WILL CIRCUITS IN EXISTING PANELBOARDS
- CAREFULLY COORDINATE ALL WORK AND SHUTDOWNS WITH CITY OF TORRANCE REPRESENTATIVE TO MINIMIZE DOWNTIME FOR USERS OF THE HOCKEY RINK, BATTING CAGE, SOCCER PRACTICE AND OTHER PROGRAMS WITHIN THE SCOPE OF WORK.
- ALL EXISTING CIRCUITS SHALL REMAIN IN OPERATION UNTIL NEW LOADS AND WIRING HAVE BEEN INSTALLED AND READY FOR CHANGE-OVER IN ORDER TO MINIMIZE DOWNTIME.
- AFTER NEW LOADS (LIGHTING FIXTURES, RECEPTACLES, ETC.) ARE OPERATIONAL, ALL ELECTRICAL AND COMMUNICATION WIRING, CONDUIT, DEVICES, FIXTURES, OUTLETS, RECEPTACLES, BOXES, ETC. MOUNTED ON OR SUPPORTED BY THE WOODEN TRUSSES IN THE SCOPE OF WORK AREA SHALL BE REMOVED. AT COMPLETION OF PROJECT, TRUSSES SHALL BE COMPLETELY CLEAR OF ALL INSTALLATIONS.

## SPECIAL NOTES TO CONTRACTOR

- EXISTING CEILING FANS IN RINK AREA HAVE NOT BEEN SHOWN. THE FANS SHALL REMAIN IN OPERATION. FIELD VERIFY RUNS OF CONDUIT AND WIRING FOR FANS TO PANELBOARD LOCATION. PORTIONS OF CONDUIT AND WIRING SUPPORTED FROM TRUSSES SHALL BE RE-ROUTED TO MAINTAIN CONTINUITY.
- FIELD VERIFY THE ROUTING OF CONTROL/COMMUNICATION WIRING FOR SCOREBOARD AND SPEAKER FROM LOCATION OF THE UNITS TO THE LOCATON OF REFEREE / PLAYER BOX. THE INTENT OF DESIGN IS TO PROVIDE NEW CONDUIT TO THE LOCATON OF NEAREST JUNCTION BOX AND RE-USED THE EXISTING UNDERGROUND CONDUIT TO ROUTE NEW WIRING. CONTRACTOR SHALL PROVIDE ALL NEW WIRING, TERMINATE THE CONNECTIONS AND TEST THE EQUIPMENT TO ENSURE THEY ARE IN WORKING CONNECTIONS. COORDINATE WITH MANUFACTURER AS REQUIRED. CONFIRM REQUIREMENT WITH CITY OF TORRANCE.
- SITE LIGHTING FIXTURE (TYPE A) SHALL BE MOUNTED ON EXISTING COLUMNS USING POLES WITH FACTORY FABRICATED DOUBLE MOUNTING PLATE, SECURED USING EXPANSION BOLTS. PROVIDE COMPLETE WITH ALL MOUNTING HARDWARE AND PROVISIONS FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWING DETAILS SHOWING FIXTURE MOUNTING FOR APPROVAL. SEE DETAIL 1 ON DWG E3.0.



PROJECT TITLE

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STAMPS/SEALS



REVISIONS

1 BID REVISIONS 2015-12-04

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TITLE SHEET

PROJECT NO.: 15580-1 PROJECT ARCH:

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SHEET: OF: 9

**GENERAL NOTES**

- THE CONTRACTOR SHALL VISIT THE SITE INCLUDING ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS (AND BY SUBMITTING A BID, ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK).
- THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR.
- ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF CITY OF TORRANCE REPRESENTATIVE DURING BID TIME FOR CLARIFICATION.
- ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
- ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER, WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN MUST BE COORDINATED WITH THE OWNER AND ENGINEER 14 DAYS PRIOR TO THE OUTAGE. SHUTDOWN SHALL BE ALLOWED ONLY AFTER HOURS UNLESS OTHERWISE APPROVED BY THE OWNER.
- ANY OVERTIME PAY SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- WORK IN EXISTING SWITCHBOARDS OR PANELBOARDS SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVING ACCESS PANELS OR DOORS.
- AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK.
- THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF CITY OF TORRANCE PROJECT ENGINEER.
- FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.
- ALL FINAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE CONTRACTOR.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INVESTIGATE AND VERIFY THE EXISTING CONDITIONS AT THE JOB SITE. EXISTING SITE CONDITIONS SHALL PREVAIL OVER DRAWINGS.
- ANY CONFLICT OR DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS AND ANY UNUSUAL OR SPECIAL CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPERVISION FOR ALL JOB SITE OPERATIONS.
- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY FACILITIES REQUIRED FOR A SAFE CONSTRUCTION OPERATION. CARE SHALL BE TAKEN TO PROTECT EXISTING CONSTRUCTION, EQUIPMENT AND PERSONNEL IN THE AREA OF CONSTRUCTION.
- ALL NEW CONSTRUCTION SHALL MATCH EXISTING ADJACENT SURFACES UNLESS NOTED OTHERWISE.
- ALL EXISTING CONSTRUCTION MARRED BY NEW CONSTRUCTION SHALL BE REFINISHED TO MATCH EXISTING AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL THOROUGHLY PHOTOGRAPH SITE AND FACILITIES PRIOR TO ANY WORK TO DOCUMENT ALL EXISTING CONDITIONS.
- CONTRACTOR SHALL PATCH AND REPAIR ALL OPENINGS IN WALLS RESULTING FROM REMOVAL OF PIPES, FIXTURES, EQUIPMENT OF RELATED WORK TO MATCH EXISTING ADJACENT SURFACES.
- PROVIDE TEMPORARY WEATHER PROTECTION DURING INTERVAL BETWEEN DEMOLITION AND REMOVAL OF EXISTING CONSTRUCTION ON EXTERIOR SURFACES, AND INSTALLATION OF NEW CONSTRUCTION TO INSURE THAT NO WATER LEAKAGE OR DAMAGE OCCURS TO STRUCTURE OR INTERIOR AREAS OF EXISTING BUILDING.
- ENVIRONMENTAL CONTROLS: COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, SUPERVISION, TOOLS, EQUIPMENT, WAREHOUSING TRANSPORTATION, TEMPORARY FACILITIES AND OTHER NECESSARY ITEMS AS REQUIRED TO COMPLETE THE WORK DETAILED.
- THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE PREMISES CLEAN AND FREE FROM AN ACCUMULATION OF WASTE MATERIAL AND RUBBISH. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL REMOVE ALL DEBRIS AND LEAVE THE WORK AREA IN A BROOM CLEAN CONDITION.
- SUPPLY TRASH BINS. DAILY CONSTRUCTION ACTIVITIES AND MATERIAL STORAGE SHALL BE CONDUCTED SO AS TO PROVIDE FOR SAFETY OF PERSONNEL WORKING IN THE AREA.
- ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL, OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY WHERE UL DOES NOT HAVE A LISTING. CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY. IN ADDITION, THE MATERIALS, EQUIPMENT, AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING:  
  
ANSI, AMERICAN, NATIONAL STANDARDS INSTITUTE, INC.  
CAL/OSHA, CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION  
IEEE, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS  
NFPA 70, NATIONAL ELECTRICAL CODE  
NFPA 13, INSTALLATION OF SPRINKLER SYSTEMS

- UNIFORM FEDERAL ACCESSIBILITY STANDARDS  
AIA GUIDELINES FOR CONSTRUCTION AND EQUIPMENT OF HOSPITAL AND MEDICAL FACILITIES  
UNIFORM BUILDING CODES  
UL, UNDERWRITERS' LABORATORIES  
STATE AND LOCAL CODES AND GUIDELINES (AS APPLICABLE)
- WHERE THE CODES HAVE DIFFERENT LEVELS OF REQUIREMENTS, THE MOST STRINGENT RULE SHALL APPLY.
- ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS AND ADJACENT PIPING. ARRANGE CONDUIT TO PRESENT A NEAT APPEARANCE. RE-PATCH ALL PENETRATIONS WITH APPROVED MATERIAL.
  - PROVIDE OPENINGS AND SUPPORTS AS REQUIRED FOR ELECTRICAL EQUIPMENT.
  - CONDUIT PENETRATIONS OF ANY KIND IN ANY FIRE RATED WALL PARTITIONS AND SLAB ASSEMBLIES SHALL BE PATCHED, FIRE-STOPPED AND SEALED WITH AN APPROVED MATERIAL SECURELY INSTALLED MATCHING THE FIRE RATING OF PENETRATED WALL, CEILING OR FLOOR SLAB.
  - STEEL ELECTRICAL OUTLET BOXES WHICH DO NOT EXCEED 16 SQUARE INCHES IN AREA, NEED NOT BE PROTECTED IN ONE HOUR OR TWO HOUR FIRE RATED WALLS, PARTITIONS, CEILINGS, OR AREA SEPARATION UNLESS THEY:
    - OCCUR ON OPPOSITE SIDES OF THE WALL WITHIN 24 INCH HORIZONTAL DISTANCE OF ONE ANOTHER. IN THIS CASE, ONLY ONE OUTLET BOX NEED TO BE PROTECTED BY AN APPROVED FIRE-STOP MATERIAL OR DETAIL TO CORRECT THIS CONDITION.
    - OCCUR IN COMBINATION WITH OUTLET BOXES OF ANY SIZE SUCH THAT THE AGGREGATE AREA OF UNPROTECTED OUTLET BOXES EXCEEDS 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL AREA. IN THIS CASE, ONLY A SUFFICIENT NUMBER OF OUTLET BOXES NEED BE PROTECTED BY AN APPROVED MATERIAL OR DETAIL TO DECREASE THE AGGREGATE AREA OF UNPROTECTED UTILITY BOXES TO LESS THAN 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL.
  - STEEL ELECTRICAL OUTLET BOXES WHICH EXCEED 16 SQUARE INCHES IN AREA, AND ALL OTHER STEEL UTILITY OUTLET BOXES REGARDLESS OF SIZE, SHALL BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL AS LISTED OR EQUAL.  
  
FIRESTOPPING MATERIAL: MPP-1 MOLDABLE PUTTY PADS  
3M CONTRACTOR PRODUCTS  
MINNEAPOLIS, MN  
3M TEST REPORT NO. 1167  
DATED AUGUST 21, 1987  
FSP FIRESTOP PUTTY PADS  
HEVI-DUTY NELSON PRODUCTS  
TULSA, OK  
FLAMESAFE FSP 1077 FIRESTOP PADS  
INTERNATIONAL PROTECTIVE COATINGS  
OAKHURST, NJ
  - STEEL UTILITY BOXES WHICH EXCEED 16 SQUARE INCHES IN AREA SHALL BE PROTECTED BY 5/8" TYPE X DRYWALL ENCLOSURE AROUND BOX.
  - UTILITY AND ELECTRICAL OUTLETS OR BOXES SHALL BE SECURELY FASTENED TO THE STUD OF FRAMING OF THE WALL, PARTITION OR CEILING ASSEMBLY. THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT SO THAT THE CLEARANCE BETWEEN THE BOX AND THE GYPSUM BOARD DOES NOT EXCEED 1/8 INCH. IN SMOKE WALLS OR PARTITIONS, THE 1/8 INCH CLEARANCE SHALL BE FILLED WITH AN APPROVED FIRE-RATED SEALANT.
  - STRAIGHT FEEDER, BRANCH CIRCUIT, AND CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.
  - CONTRACTOR SHALL PROVIDE SHOP DRAWING OF WORK SCHEDULE PHASING PLAN FOR APPROVAL. SCHEDULE SHOULD MINIMIZE DOWNTIME AT NIGHT FOR OUTDOOR FIXTURES AND INDICATE TEMPORARY POWER/LIGHTING PROVISIONS.
  - CONTRACTOR TO PROVIDE SHOP DRAWINGS OF ALL EQUIPMENTS AND DEVICES FOR APPROVAL.
  - CONTRACTOR TO PROVIDE SHUTDOWN SCHEDULE AND TEMPORARY POWER PLAN FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
  - MAXIMUM NUMBER OF CONDUCTORS IN OUTLET OR JUNCTION BOXES SHALL CONFORM WITH THE NATIONAL ELECTRICAL CODE, TABLE 314.16(A) - IN NO CASE, SHALL CONTAIN MORE THAN THE FOLLOWING NUMBER OF #12 AWG CONDUCTORS FOR THE SIZE OF BOX INDICATED BELOW. THE MINIMUM SIZE OUTLET OR JUNCTION BOX PERMITTED IN A WALL ARE AS FOLLOWS:  
  
4" SQ. BY 1-1/2" D = 9 CONDUCTORS  
4"SQ. BY 2-1/8" D = 13 CONDUCTORS  
4-11/16" SQ. BY 1 1/2" D = 11 CONDUCTORS  
4-11/16" SQ. BY 2-1/8" D = 18 CONDUCTORS
  - ALL OUTLET BOXES CONTAINING MORE THAN ONE DEVICE SHALL BE GANGED. TWO DEVICES DOUBLE GANGED, MINIMUM.

- MOUNTING HEIGHTS OF ALL DEVICES AND EQUIPMENT ARE FROM FINISHED FLOOR TO CENTER OF DEVICES AND EQUIPMENT UNLESS OTHERWISE NOTED. BOXES INSTALLED IN LOCATIONS NOT APPROVED BY THE ARCHITECT SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
- DRAWINGS ARE DIAGRAMMATIC ONLY. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER SECTIONS. DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL, OR MECHANICAL ITEMS OR FEATURES.
- THE EQUIPMENT GROUNDING CONDUCTOR SHOWN ON CONDUIT RUNS SHALL RUN CONTINUOUS FROM PANEL TO LAST OUTLET. THIS WIRE SHALL BE PIGTAILED IN EACH OUTLET FOR CONNECTION TO BOX AND DEVICE SO THAT IF DEVICE IS REMOVED, GROUND WILL NOT BE INTERRUPTED. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSULATED GREEN CONDUCTORS - ALTERNATE METHODS OF IDENTIFICATION SHALL NOT BE USED. CONTRACTOR SHALL NOTIFY ELECTRICAL ENGINEER TO EXAMINE CONDUCTOR INSTALLATION PRIOR TO INSTALLATION OF DEVICES.
- WHERE LIGHTING FIXTURES REQUIRE THE USE OF ACRYLIC PLASTIC LENSES, THEY SHALL BE 100 PERCENT VIRGIN ACRYLIC THERMOPLASTIC NOT LESS THAN 0.125 INCHES THICK WITH AN UNPENETRATED DEPTH OF NOT LESS THAN 0.045 INCHES EQUAL TO KSH-K12 UNLESS NOTED OTHERWISE.
- ALL CONDUITS, JUNCTION BOXES, SUPPORTS AND HANGERS SHALL BE CONCEALED IN ALL FINISHED AREAS/SPACES AND MAY BE EXPOSED ON UNFINISHED AREAS/SPACES. EXPOSED UTILITY BOXES WHICH WILL BE INSTALLED MUST BE OF A BELL BOX TYPE ONLY - CLEAN SURFACE ON THE SIDES WITHOUT ANY KNOCKOUTS.
- ALL ELECTRICAL WORK WILL BE EXECUTED WITH THE PROXIMATE CIRCUITS DE-ENERGIZED BY COORDINATING WITH THE OWNER ALL PLANNED ELECTRICAL SYSTEM SHUTDOWNS. IN VERY RARE CASES, WHEN A PLANNED SHUTDOWN CANNOT BE ACCOMPLISHED, ENERGIZED WORK MAY BE AUTHORIZED WITH AN SPECIFIC ENERGIZED WORK SAFETY PLAN, APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AND WRITTEN APPROVAL (SIGNED PERMIT) FROM THE OWNER IN ACCORDANCE WITH NFPA 70E.
- ALL SINGLE PHASE BRANCH CIRCUIT SHALL BE PROVIDED WITH DEDICATED NEUTRAL. CONDUCTOR INSULATION SHALL BE THHN/THWN-2 PROVISION FOR ADJUSTMENT FACTORS.
- CONTRACTOR SHALL PROVIDE SHOP DRAWING OF WORK SCHEDULE PHASING PLAN FOR APPROVAL. SCHEDULE SHOULD MINIMIZE DOWNTIME AT NIGHT FOR OUTDOOR FIXTURES AND INDICATE TEMPORARY POWER/LIGHTING PROVISIONS.
- CONTRACTOR TO PROVIDE SHOP DRAWINGS OF ALL EQUIPMENTS AND DEVICES FOR APPROVAL.
- CONTRACTOR TO PROVIDE SHUTDOWN SCHEDULE AND TEMPORARY POWER PLAN FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.

**LIGHTING REFERENCE NOTES**

- CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTING AND REMOVING ALL DEVICES, CONDUIT, AND WIRE NOT BEING REUSED WITHIN THE SCOPE OF WORK AREAS.
- ELECTRICAL CONTRACTOR TO FIELD VERIFY EXISTING LIGHTING CONTROL SWITCHES, MOTION SENSORS, TIME SWITCHES, ETC. IN ALL AREAS AND PROVIDE ALL NECESSARY PROVISIONS AND LABOR IN ORDER TO DISCONNECT EXISTING CONTROLS AND RE-CONNECT TO NEW FIXTURES.
- ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING FIXTURE CONDITION. TRACE CIRCUIT NUMBERS IN FIELD AND PROVIDE UPDATED PANEL SCHEDULES.
- CONTRACTOR SHALL VERIFY ALL FIXTURE LOCATIONS AND REQUIREMENTS WITH CITY OF TORRANCE REPRESENTATIVE PRIOR TO PURCHASING AND INSTALLATION.
- CONTRACTOR SHALL ADJUST FIXTURE HEAD ANGLE AND ROTATION FOR UNIFORM LIGHTING.

**DEMOLITION NOTES**

- IN GENERAL, THE DEMOLITION PLAN SHOWS NOT ALL EXISTING EQUIPMENT TO BE REMOVED; HOWEVER, ELECTRICAL EQUIPMENT, WHETHER SHOWN ON THIS DRAWING OR NOT, (THAT IS LOCATED IN REMOVED WALLS, FLOORS OR CEILINGS) SHALL BE REMOVED UNLESS OTHERWISE NOTED.
- IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO DISCONNECT AND REMOVE ALL EXISTING LIGHTING FIXTURES, ELECTRICAL EQUIPMENT, ETC., AFFECTED BY THE REMODELED AREA. THIS WILL INCLUDE REROUTING, OR THE EXTENSION OF, EXISTING CONDUIT AND FEEDERS WHERE NECESSARY TO MAINTAIN THE CONTINUITY OF EXISTING EQUIPMENT REMAINING.
- IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS, EQUIPMENT, ETC., REMAINING IN OPERATION WHICH ARE BEING FED BY AN ABANDONED OUTLET. MAINTAINING CONTINUITY SHALL CONSIST OF REROUTING CONDUIT, WIRING, ETC., AS REQUIRED.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS IN AN "AS-FOUND" CONDITION. EQUIPMENT THAT IS TO BE TURNED OVER SHALL BE BOXED AND TAGGED TO IDENTIFY THE SPECIFIC EQUIPMENT.
- MAINTAIN CIRCUITS CONTINUANT OF ALL DEVICES TO REMAIN.

**SCHEDULING NOTES**

- IDENTIFYING SHUTDOWNS (OF POWER) WHICH MAY OCCUR AFTER REGULAR WORKING HOURS/WEEKENDS, OR AS IDENTIFIED BY CITY OF TORRANCE REPRESENTATIVE.
- IDENTIFY MAXIMUM NUMBER OF CIRCUITS/PANELS ALLOWED TO BE SCHEDULED FOR AN OUTAGE AT ANY ONE TIME.
- SPECIFY SHUTDOWNS SCHEDULE TO BE PREPARED AND SUBMITTED TO CITY OF TORRANCE REPRESENTATIVE FOR APPROVAL TO INCLUDE CIRCUITS, LOADS EFFECTED, DATE, TIME, AND DURATION.

**SCOPE OF WORK**

- REMOVE ALL EXISTING LIGHTING FIXTURE AND RECEPTACLES AS SHOWN ON PLAN. REMOVE ALL ASSOCIATED CONDUIT AND WIRING.
- REMOVE ALL EXISTING ELECTRICAL DEVICES, FIXTURES, OUTLETS, WIRING, CONDUITS AND ALL OTHER PROVISIONS WHICH ARE SUPPORTED ON WOODEN TRUSSES IN THE AREA OF WORK.
- PROVIDE NEW LED LIGHT FIXTURES AND RECEPTACLES AS SHOWN. CONNECT TO CIRCUITS IN EXISTING PANELBOARDS AS SHOWN.
- REROUTE FEEDERS FOR EXISTING PANELBOARDS AND BRANCH CIRCUITS FOR NEW LIGHTING FIXTURES AND RECEPTACLES TO AVOID BEING SUPPORTED ON WOODEN TRUSSES.
- ALL EXISTING LIGHTING CONTROLS SHALL REMAIN IN PLACE AND BE ADJUSTED AS REQUIRED ONCE INSTALLATION AND RECONNECTION OF NEW LIGHT FIXTURES HAS BEEN COMPLETED.

6. SITE LIGHTING FIXTURE (TYPE A) SHALL BE MOUNTED ON EXISTING COLUMNS USING POLES WITH FACTORY FABRICATED DOUBLE MOUNTING PLATE, SECURED USING EXPANSION BOLTS. PROVIDE COMPLETE WITH ALL MOUNTING HARDWARE AND PROVISIONS FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWING DETAILS SHOWING FIXTURE MOUNTING FOR APPROVAL. SEE DETAIL 1 ON DWG E3.0.

**PROJECT NOTES**

- VERIFY LOCATIONS OF HOMERUNS AND ADJUST CIRCUIT NUMBERS ACCORDING TO EXISTING CONDITIONS IF REQUIRED.
- IDENTIFY ANY OBVIOUS EXISTING CODE VIOLATIONS THAT OCCURS AS AN EXISTING CONDITION AND PROVIDE SEPARATE PRICING TO CORRECT THE CONDITION SO THAT IN THE END, THE ENTIRE ELECTRICAL INSTALLATION COMPLIES WITH THE LATEST NATIONAL ELECTRICAL CODE AND ALL OTHER LOCAL CODES.
- IF THERE IS ANY DEVIATION FROM THE CIRCUITRY SHOWN, PROVIDE AS-BUILT DRAWINGS INDICATING SUCH.
- AT THE COMPLETION OF THE BUILD OUT, AND PRIOR TO THE FINAL REVIEW BY THE ENGINEER, PROVIDE PANEL DIRECTORIES IN PANELBOARD FRONTS REFLECTING ALL CHANGES MADE DURING THE COURSE OF CONSTRUCTION.

**INTERPRETATION**

PROVIDE AS DEFINED IN THE ENTIRETY OF THIS CONTRACT DOCUMENT: THE CONTRACTOR SHALL FURNISH, INSTALL, ADJUST, TEST AND INTEGRATE INTO A COMPLETE SYSTEM THE ITEM INDICATED INCLUDING ALL HARDWARE, WIRING AND MISCELLANEOUS ITEMS AS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.

WHERE THE WORD: "ENGINEER" OR "ARCHITECT" WAS STATED ON THE DRAWINGS OR SPECIFICATIONS, IT IS THEREFORE, REFERRED TO AS THE "CITY OF TORRANCE REPRESENTATIVE ENGINEER."

**SHOP DRAWINGS**

SHOP DRAWING DETAILS OF FIXTURE MOUNTING SHALL BE SUBMITTED BY FOR APPROVAL. CONTRACTOR INSTALL THE FIXTURES ON POLES MOUNTED TO CONCRETE COLUMN SUCH THAT THE FIXTURES ARE 5' ABOVE THE TOP OF COLUMNS. CONTRACTOR SHALL MAKE ALL ADJUSTMENTS TO POLE TYPE AND SIZING AS REQUIRED BY FIELD CONDITIONS. CONTRACTOR SHALL INCLUDE ALL MOUNTING BRACKETS, BOLTS, SUPPORTS, HARDWARE, PROVISIONS, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.



PROJECT TITLE

**CHARLES H. WILSON PARK ELECTRICAL IMPROVEMENTS**

2200 CRENSHAW BLVD.  
TORRANCE, CA. 90501

PREPARED FOR

**CITY OF TORRANCE  
GENERAL SERVICES DEPARTMENT**

3350 CIVIC CENTER DRIVE  
TORRANCE, CA. 90503

CONSULTANT

**J.C. CHANG & ASSOCIATES, INC.**  
ENGINEERS ARCHITECTS PLANNERS  
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FAX (310) 212 - 5272

STAMPS/SEALS

REVISIONS

1	BID REVISIONS	2015-12-04
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SHEET TITLE

**GENERAL NOTES**

PROJECT NO.: 15580-1 PROJECT ARCH:

DRAWN: SA CHECKED: SA

SHEET NUMBER

**E0.2**

DATE: 2015-12-04 SHEET: X OF: 9

SOURCE/TITLE: 04 Dec 2015 09:43AM  
SCALE: ON 15580-1 155801 E02.dwg

## EXISTING LIGHTING FIXTURE SCHEDULE (FOR REFERENCE ONLY)

TYPE	SYMBOL	DESCRIPTION	LAMP TYPE	VOLT	MOUNTING	FIXTURE WATTAGE	REMARKS
F1		EXISTING METAL HALIDE AREA LIGHTING FIXTURE	METAL HALIDE	120V	POLE MOUNTED	400	
F2		EXISTING METAL HALIDE AREA LIGHTING FIXTURE	METAL HALIDE	120V	POLE MOUNTED	1000	
F3		EXISTING WALL-PACK	METAL HALIDE	120V	WALL/SURFACE	100	
F4		EXISTING HIGH BAY LIGHTING FIXTURE					LOCATIONS SHOWN FOR REFERENCE ONLY. FIXTURES TO REMAIN.

## NEW LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	TYPE	DESCRIPTION	MANUFACTURER & CATALOG No.	LLF	VOLTAGE	FIXTURE WATTAGE	MOUNTING	REMARKS
A		OUTDOOR	LED AREA LIGHTING FIXTURE POLE MOUNTED ON CONCRETE COLUMN  SAME, PROVIDE TWIN HEAD BRACKET	BEACON AL-U-72NB-220-5K-4X4-UNV-PCR-TL-SF3-FL-BBT	0.90	208V	220W	POLE MOUNTED ON CONCRETE COLUMN	SEE DETAIL 1 ON DWG E3.0 SEE SCOPE OF WORK AND SHOP DRAWING NOTES ON DWG E0.2
B		OUTDOOR	WALL MOUNTED LED LIGHT FIXTURE	LITHONIA WST-1-10A700/40K-SR4-MVOLT-PE-VG-DOBXD	0.90	120V	55W	WALL MOUNTED	

PANEL: C		EXISTING - NORMAL POWER	
LOCATION: ELECTRICAL ROOM		VOLTAGE/PHASE: 240Y/120V, 10.3W	
FLOOR: SURFACE		BUS AMPS: 225A	
MOUNTING: SURFACE		MAIN BREAKER: 200A	
FED FROM: MDB (MAIN)		MINIMUM BUS BRACING: EXISTING	
LOADS	SEE NOTE	OUTLETS	VOLT-AMPS
TIME CLOCK CTS		1 200	1 200
TIME CLOCK CTS		1 200	1 200
* REC NORTH WALL WEST		9	180
* REC NORTH WALL EAST		11	180
VENDING MACHINE		13	500
VENDING MACHINE		15	720
FANS		17	360
SPARE		19	20
SPARE		21	22
		23	24
		25	26
		27	28
		29	30
TOTAL OA = 4380 VOLT-AMPS		36.3 AMPS	
TOTAL OB = 2660 VOLT-AMPS		22.2 AMPS	
TOTAL PANEL = 7020 120V, 3Ø = 59 AMPS		LCL x 0.25 = 0 AMPS	
		LML x 0.25 = 0 AMPS	
		TOTAL PANEL = 7020 120V, 3Ø = 59 AMPS	

PANEL: D		EXISTING - NORMAL POWER	
LOCATION: ELECTRICAL ROOM		VOLTAGE/PHASE: 240Y/120V, 10.3W	
FLOOR: SURFACE		BUS AMPS: 225A	
MOUNTING: SURFACE		MAIN BREAKER: 200A	
FED FROM: MDB (MAIN)		MINIMUM BUS BRACING: EXISTING	
LOADS	SEE NOTE	OUTLETS	VOLT-AMPS
LIGHTS 16-20 (FIRST 3 LTGS WEST SIDE TUNNEL)		1 360	1 360
LIGHTS 1-4 (FIRST 4 LIGHTS PARKING LOT SIDE)		1 480	1 480
LIGHTS 13-15 (LAST 3 LIGHTS WEST TUNNEL)		9 360	9 360
		11 360	11 360
		13 14	14
		15 16	16
		17 18	18
		19 20	20
TOTAL OA = 3560 VOLT-AMPS		29.7 AMPS	
TOTAL OB = 3560 VOLT-AMPS		29.7 AMPS	
TOTAL PANEL = 7720 120V, 1Ø = 64 AMPS		LCL x 0.25 = 1.7 AMPS	
		LML x 0.25 = 0 AMPS	
		TOTAL PANEL = 7720 120V, 1Ø = 64 AMPS	

PANEL: B		EXISTING - NORMAL POWER	
LOCATION: ELECTRICAL ROOM		VOLTAGE/PHASE: 208Y/120V, 3Ø, 4W	
FLOOR: SURFACE		BUS AMPS: 100	
MOUNTING: SURFACE		MAIN BREAKER: MLO	
FED FROM: MDB (MAIN)		MINIMUM BUS BRACING: EXISTING	
LOADS	SEE NOTE	OUTLETS	VOLT-AMPS
WALKWAY LIGHTS		2 200	2 200
SERVER		2 500	2 500
BUILDING POWER		3 540	3 540
WALKWAY LIGHTS		2 200	2 200
PLUG		3 540	3 540
WATER HEATER		3 540	3 540
EXT LOAD		1 540	1 540
EXT LOAD		2 360	2 360
EXT LOAD		3 540	3 540
EXT LOAD		1 360	1 360
EXT LOAD		1 720	1 720
TOTAL OA = 3850 VOLT-AMPS		32.92 AMPS	
TOTAL OB = 4120 VOLT-AMPS		34.33 AMPS	
TOTAL OC = 4060 VOLT-AMPS		33.83 AMPS	
TOTAL PANEL = 12,680 VA @ 208V, 3Ø = 35 AMPS		LCL x 0.25 = 1.5 AMPS	
		LML x 0.25 = 0 AMPS	
		TOTAL PANEL = 12,680 VA @ 208V, 3Ø = 35 AMPS	

PANEL: K		EXISTING - NORMAL POWER	
LOCATION: OUTDOOR		VOLTAGE/PHASE: 208Y/120V, 3Ø, 4W	
FLOOR: SURFACE		BUS AMPS: 225	
MOUNTING: SURFACE		MAIN BREAKER: 200A	
FED FROM: MDB (MAIN)		MINIMUM BUS BRACING: EXISTING	
LOADS	SEE NOTE	OUTLETS	VOLT-AMPS
BATTERY CAGE SUBPANEL		1 1,200	1 1,200
PROSHOP SUB PANEL		1 1,100	1 1,100
BATTERY CAGE LIGHTS		8 400	8 400
BATTERY CAGE LIGHTS		6 400	6 400
BATTERY CAGE WITH PNL LCP POWER		5 400	5 400
WEST LIGHTS		4 440	4 440
NORTH LIGHTS		5 660	5 660
SOUTH EAST LIGHTS		8 1,240	8 1,240
RECEPTACLE		1 180	1 180
RECEPTACLE		1 180	1 180
		37 38	38
		39 40	40
		41 42	42
TOTAL OA = 10,000 VOLT-AMPS		83.33 AMPS	
TOTAL OB = 10,000 VOLT-AMPS		83.33 AMPS	
TOTAL OC = 10,000 VOLT-AMPS		83.33 AMPS	
TOTAL PANEL = 30,000 VA @ 208V, 3Ø = 83 AMPS		LCL x 0.25 = 0 AMPS	
		LML x 0.25 = 0 AMPS	
		TOTAL PANEL = 30,000 VA @ 208V, 3Ø = 83 AMPS	

PANEL: A		EXISTING - NORMAL POWER	
LOCATION: STORAGE ROOM		VOLTAGE/PHASE: 208Y/120V, 3Ø, 4W	
FLOOR: SURFACE		BUS AMPS: 225	
MOUNTING: SURFACE		MAIN BREAKER: MLO	
FED FROM: MDB (MAIN)		MINIMUM BUS BRACING: EXISTING	
LOADS	SEE NOTE	OUTLETS	VOLT-AMPS
LOW LEVEL HOCKEY		1 106	1 106
FLOODS (HOCKEY)		6 600	6 600
PADDLE BALL # 1		6 600	6 600
PADDLE BALL # 2		6 600	6 600
PADDLE BALL # 3		6 600	6 600
PADDLE BALL # 4		6 600	6 600
PADDLE BALL # 5		6 600	6 600
HOCKEY LIGHTS		6 600	6 600
HOCKEY LIGHTS		6 600	6 600
HOCKEY LIGHTS		6 600	6 600
RINK FANS		1 120	1 120
TOTAL OA = 7,466 VOLT-AMPS		62 AMPS	
TOTAL OB = 7,306 VOLT-AMPS		61 AMPS	
TOTAL OC = 6,500 VOLT-AMPS		54 AMPS	
TOTAL PANEL = 25,252 VA @ 208V, 3Ø = 72 AMPS		LCL x 0.25 = 4.653 VOLT-AMPS	
		LML x 0.25 = 0 AMPS	
		TOTAL PANEL = 25,252 VA @ 208V, 3Ø = 72 AMPS	



PROJECT TITLE

## CHARLES H. WILSON PARK ELECTRICAL IMPROVEMENTS

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TORRANCE, CA. 90501

PREPARED FOR

**CITY OF TORRANCE**  
GENERAL SERVICES DEPARTMENT

3350 CIVIC CENTER DRIVE  
TORRANCE, CA. 90503

CONSULTANT

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STAMPS/SEALS

REVISIONS

NO.	DESCRIPTION	DATE
1	BID REVISIONS	2015-12-04

SHEET TITLE

## LIGHTING FIXTURE SCHEDULE & PANEL SCHEDULES

PROJECT NO: 15580-1 PROJECT ARCH:

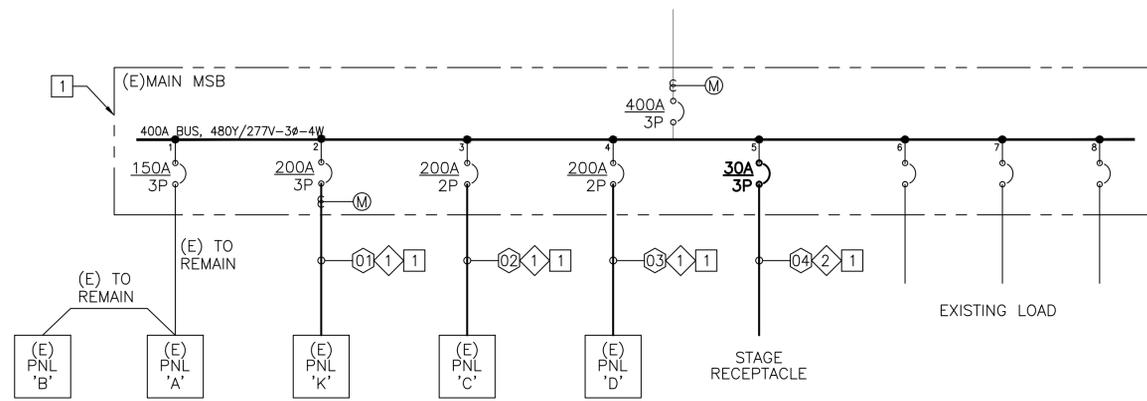
DRAWN: SA CHECKED: SA

SHEET NUMBER

# E0.3

DATE: 2015-12-04 SHEET: OF: 9

DATE/TIME: 04 Dec 2015 09:43AM  
FILE: Q:\15580-1\155801E03.dwg



**ELECTRICAL SINGLE LINE DIAGRAM**  
SCALE: N.T.S.

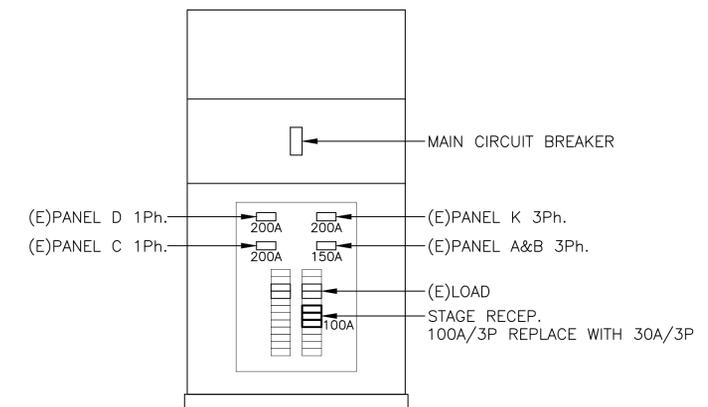
**DEMOLITION KEYNOTES:**

- ① EXISTING FEEDER TO BE DISCONNECTED AND REMOVED.
- ② DISCONNECT & REMOVE EXISTING CIRCUIT WIRING AND CONDUIT SERVING EXISTING STAGE ELECTRICAL PANEL.

**NEW WORK KEYNOTES:**

- ① PROVIDE NEW CONDUIT AND CONDUCTOR AS PER SINGLE LINE DIAGRAM AND CABLE SCHEDULE.

CABLE SCHEDULE			
FEEDER	CONDUIT & CONDUCTOR SIZE	FROM	TO
01	2" C-3#3/0+1#6G	(E) MAIN SWITCH BOARD	PANEL K
02	2" C-3#3/0+1#6G	(E) MAIN SWITCH BOARD	PANEL C
03	2" C-3#3/0+1#6G	(E) MAIN SWITCH BOARD	PANEL D
04	3/4" C-3#10+1#10G	(E) MAIN SWITCH BOARD	STAGE RECEPTACLE



**MAIN SWITCH BOARD**



PROJECT TITLE

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STAMPS/SEALS



REVISIONS

△	BID REVISIONS	2015-12-04
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SHEET TITLE:

**ELECTRICAL SINGLE LINE DIAGRAM**

PROJECT NO: 15580-1 PROJECT ARCH:

DRAWN: SA CHECKED: SA

SHEET NUMBER

**E0.4**

DATE: 2015-12-04

SHEET: OF: 9

**GENERAL NOTES:**

1. ALL EXISTING CIRCUITS AND LOADS SHALL STAY IN SERVICE UNTIL NEW WIRING AND LOADS HAVE BEEN INSTALLED AND CHANGE OVER OCCURS.
2. ONCE CHANGE OVER OCCURS, ALL EXISTING FIXTURES, DEVICES, BOXES, OUTLETS, WIRING, CONDUIT, ETC. LOCATED ON TRUSSES IN HOCKEY RINK AND SOCCER FIELD AREAS SHALL BE COMPLETELY REMOVED. TRUSSES SHALL BE COMPLETELY CLEAR OF ANY REMAINING ELECTRICAL AND COMMUNICATION CONDUITS, FIXTURES, DEVICES, WIRING, OUTLETS, ETC AT COMPLETION.

**DEMOLITION KEYNOTES:**

- 1 DISCONNECT AND REMOVE EXISTING POLE MOUNTED LIGHTING FIXTURE ON THE TRUSSES, INCLUDING FIXTURE, WIRING AND ALL MOUNTING PROVISIONS. DEMOLISH WIRING BACK TO PANELBOARD.
- 2 DISCONNECT AND REMOVE EXISTING WALL MOUNTED LIGHTING FIXTURE ON THE TRUSSES, INCLUDING FIXTURE, WIRING AND ALL MOUNTING PROVISIONS. DEMOLISH WIRING BACK TO PANELBOARD. NOTE THAT ALL EXISTING WALLMOUNTED FIXTURES ARE CONNECTED TO 20A CIRCUIT BREAKER IN SPACE 20 OF EXISTING MAIN SWITCHBOARD "MSB".
- 3 EXISTING AREA LIGHTING FOR THE HOCKEY RINK INSTALLED UNDER THE CANOPY SHALL REMAIN.
- 4 EXISTING PANELBOARDS SHALL REMAIN. DEMOLISH EXISTING FEEDERS FROM MAIN SWITCHBOARD "MSB" TO EACH PANELBOARD WHEN NEW FEEDERS HAVE BEEN ROUTED AND CHANGE OVER HAS BEEN COMPLETED.
- 5 DISCONNECT EXISTING SCOREBOARD POWER AND COMMUNICATION WIRING. RECONNECT AS DESCRIBED IN NEW WORK DRAWINGS. RELOCATE SCOREBOARD AS SHOWN IN NEW WORK DRAWINGS.
- 6 DEMOLISH EXISTING RECEPTACLE.
- 7 DEMOLISH EXISTING SPECIALTY CONNECTOR ON CORD.
- 8 EXISTING MAIN SWITCHBOARD "MSB" LOCATED IN SHED SHALL REMAIN.
- 9 DEMOLISH EXISTING COMMUNICATION BOX AND ASSOCIATED CONDUIT.
- 10 REMOVE EXISTING PLUMBING PIPE FROM STORAGE TO STORE BUILDING. REPLACE WITH NEW SUPPORTED ON NEW SUPPORT SYSTEM AS SHOWN IN NEW WORK.
- 11 DISCONNECT EXISTING SPEAKER WIRING. RECONNECT AS DESCRIBED IN NEW WORK DRAWINGS. RELOCATE SPEAKERS AS SHOWN IN NEW WORK DRAWINGS.



PROJECT TITLE

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GENERAL SERVICES DEPARTMENT**

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STAMPS/SEALS



REVISIONS

△	BID REVISIONS	2015-12-04
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SHEET TITLE:

**ELECTRICAL DEMOLITION PLAN**

PROJECT NO.: 15580-1 PROJECT ARCH:

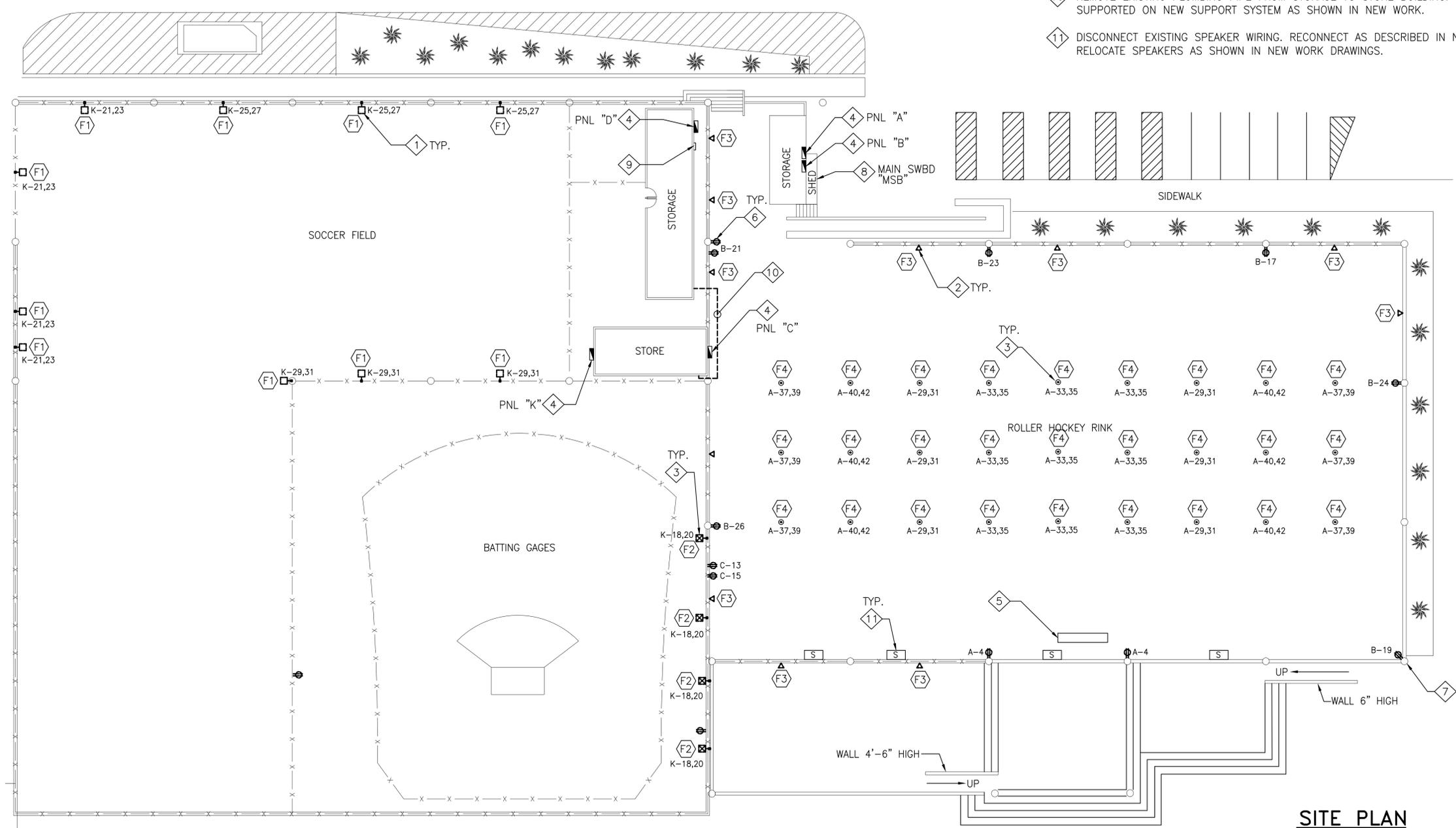
DRAWN: SA CHECKED: SA

SHEET NUMBER

**E1.0**

DATE: 2015-12-04

SHEET: X OF: 9



**SITE PLAN**  
SCALE: 0 2 10 20 FEET 30  
1/16" = 1'-0"

SOURCE/TIME: 04 Dec 2015 09:43AM  
FILE: Q:\15580-1\155801E10.dwg

**GENERAL NOTES:**

1. ALL NEW LIGHTING FIXTURES, POLES, RECEPTACLES, BOXES, OUTLETS, CONDUIT, WIRING, ETC. SHALL BE INSTALLED PRIOR TO DEMOLITION OF EXISTING IN ORDER TO MINIMIZE DOWNTIME.
2. TERMINATE ALL BRANCH CIRCUITS IN PULLBOX SIZED AS REQUIRED, NEAR THE LOCATION OF RESPECTIVE PANELBOARDS. FINAL CONNECTION TO PANELBOARDS SHALL OCCUR DURING SCHEDULED CHANGE OVER IN ORDER TO MINIMIZE DOWNTIME.
3. EXISTING CEILING FANS IN RINK AREA HAVE NOT BEEN SHOWN. THE FANS SHALL REMAIN IN OPERATION. FIELD VERIFY RUNS OF CONDUIT AND WIRING FOR FANS TO PANELBOARD LOCATION. PORTIONS OF CONDUIT AND WIRING SUPPORTED FROM TRUSSES SHALL BE RE-ROUTED TO MAINTAIN CONTINUITY.

**TRENCHING NOTES:**

1. CONTRACTOR SHALL EXERCISE EXTREME CARE AND DILIGENCE WHEN EXCAVATING AND WORKING AROUND EXISTING UNDERGROUND UTILITIES. PERFORM ANY NECESSARY HAND DIGGING, MANUAL TRENCHING, AND SHORING WITHOUT EXTRA COST.
2. CONTRACTOR SHALL PROVIDE IN HIS BID A NECESSARY AMOUNT TO PROVIDE A FULL SURVEY TO INDICATE ALL EXISTING UNDERGROUND UTILITIES. IN CASE OF ANY DAMAGES TO ANY EXISTING UTILITIES, THE CONTRACTOR HAS TO REPAIR ALL DAMAGES AT HIS OWN EXPENSES WITHOUT ANY EXTRA CHARGES TO THE OWNER.
3. REPAIR ALL A.C. OR CONCRETE, SURFACES, CURBS, LAWN AND PLANTING AREAS TO MATCH EXISTING.
4. CONTRACTOR SHALL LOCATE SITE PATHS OF TRAVEL FOR BOTH PEDESTRIAN AND VEHICULAR TRAFFIC OVER THE SITE UTILITY TRENCHES. CONTRACTOR TO USE STEEL PLATES OF SUFFICIENT WIDTH AND THICKNESS TO COVER THE TRENCH AND ALLOW THE TRAFFIC. FURTHERMORE, THE CONTRACTOR SHALL PROVIDE CHAIN LINK FENCING ON EACH SIDE OF THE EGRESS PATH. FINALLY, THE CONTRACTOR SHALL COORDINATE WITH OWNER AT ALL TIMES TO MAINTAIN ACCESS AROUND THE SITE.
5. PROVIDE PULL ROPE IN CONDUITS.
6. SAWCUT CONCRETE UNDER THE SOCCER FIELD TURF AS REQUIRED FOR ROUTING CONDUIT.

**NEW WORK KEYNOTES:**

- 1 PROVIDE FIXTURE PER FIXTURE SCHEDULE ON DWG E0.3. MOUNT FIXTURE USING POLE ON THE COLUMN SUCH THAT THE FIXTURE IS 5' ABOVE THE CONCRETE COLUMN. SEE DETAIL 1 ON DWG E3.0. SUBMIT SHOP DRAWING OF MOUNTING DETAIL FOR APPROVAL.
- 2 PROVIDE WALLMOUNTED FIXTURE PER FIXTURE SCHEDULE ON DWG E0.3. MOUNT FIXTURES ON AT 10' A.F.F. ON COLUMNS PROVIDE ALL MOUNTING HARDWARE AND PROVISIONS.
- 3 REPLACE EXISTING 100A, 3-POLE CIRCUIT BREAKER IN MAIN SWITCHBOARD "MSB" WITH 30A, 3-POLE, GFCI TYPE CIRCUIT BREAKER, KAIC TO MATCH EXISTING. FOR STAGE OUTLET PER KEYNOTE
- 4 PROVIDE 20A, 120VAC, 1-POLE, GFCI DUPLEX RECEPTACLE IN WEATHERPROOF BOX. MOUNT RECEPTACLE AT 8' A.F.F. ON COLUMNS. PROVIDE ALL MOUNTING HARDWARE AND PROVISIONS.
- 5 PROVIDE SUPPORT FOR NEW CONDUIT SYSTEM. REFER TO WIRING SCHEDULE FOR SIZE OF CONDUITS. SEE DWG S1.0 FOR STRUCTURAL DETAILS.
- 6 PROVIDE 3/4"C-2#12 + 1#12G FROM CONDUIT SUPPORT SYSTEM TO EACH RECEPTACLE / WALLMOUNTED LIGHT FIXTURE.
- 7 PROVIDE 30A, 125V/250V, 3-POLE, 4-WIRE (NEMA L14-30) RECEPTACLE IN WEATHERPROOF ENCLOSURE (NEMA 3R) FOR STAGE. PROVIDE 3/4"C-3#8 + 1#8G FROM CONDUIT SUPPORT SYSTEM TO THE LOCATION OF ENCLOSURE.
- 8 ROUTE CONDUITS ALONG FENCE. PROVIDE SUPPORT AS REQUIRED. ROUTE CONDUITS ON THE BOTTOM OF FENCE WHERE POSSIBLE. TRANSITION FROM FENCE TO UNDERGROUND CONDUIT WHERE POLE MOUNTED FIXTURES OCCUR. REFER TO WIRING SCHEDULE FOR CONDUIT SIZING.
- 9 INTERCEPT EXISTING JUNCTION BOX/CONDUIT SYSTEM SERVING EXISTING RINK LIGHTING FIXTURES NEAR THE LOCATION OF COLUMNS. PROVIDE NEW WIRING FROM EXISTING JUNCTION BOXES TO THE LOCATION OF RESPECTIVE PANELBOARDS.
- 10 INTERCEPT EXISTING JUNCTION BOX/CONDUIT SYSTEM SERVING EXISTING RINK CEILING FANS NEAR THE LOCATION OF COLUMNS. PROVIDE NEW WIRING FROM EXISTING JUNCTION BOXES TO THE LOCATION OF RESPECTIVE PANELBOARDS.

- 11 INTERCEPT EXISTING JUNCTION BOX/CONDUIT SYSTEM SERVING EXISTING RINK TEAM AND REFEREE BOXES NEAR THE LOCATION OF COLUMNS. PROVIDE NEW WIRING FROM EXISTING JUNCTION BOXES TO THE LOCATION OF RESPECTIVE PANELBOARDS.
- 12 TERMINATE FEEDERS FOR PANELBOARDS "C", "D" & "K" IN PULLBOX NEAR THE LOCATION OF THE MAIN SWITCHBOARD "MSB", FIELD VERIFY EXACT LOCATION. CHANGE OVER TO NEW FEEDERS SHALL OCCUR AFTER INSTALLATION OF LIGHTING AND RECEPTACLES HAVE BEEN COMPLETED TO MINIMIZE DOWNTIME.
- 13 ROUTE CONDUITS UNDERGROUND. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40. MINIMUM SIZE OF UNDERGROUND CONDUIT SHALL BE 1". SEE DETAIL 3 / E3.0.
- 14 PROVIDE 2' X 3' CONCRETE UNDERGROUND PULLBOX. SEE DETAIL 2 / E3.0.
- 15 PROVIDE 20A, 120VAC, 1-POLE, DUPLEX RECEPTACLE IN WEATHERPROOF BOX. MOUNT RECEPTACLE AT 4' A.F.F. ON FENCE. PROVIDE ALL MOUNTING HARDWARE AND PROVISIONS. ALL OTHER OUTLETS SHALL BE GFCI UNLESS OTHERWISE NOTED.
- 16 INTERCEPT EXISTING PLUMBING PIPING CONNECTOR ON STORAGE BUILDING AND PROVIDE NEW PIPE TO THE LOCATION OF HOSE PIP ON STORE BUILDING. SIZE OF PIPE SHALL REMAIN THE SAME. MOUNT BASED ON FIELD CONDITIONS ON HOCKEY RINK SUPPORT STRUCTURE OR NEW CONDUIT SUPPORT CHANNEL. PROVIDE ALL CONNECTIONS, RINGS, BOXES, ETC. AS REQUIRED.
- 17 REINSTALL EXISTING SPEAKER ON COLUMNS. COORDINATE MOUNTING HEIGHT WITH CITY OF TORRANCE.
- 18 RUN CONTROL WIRING FOR SCOREBOARD AND SPEAKERS TO THE LOCATION OF THE BOXES TRANSITIONING UNDERGROUND TO THE REFEREE BOX IN THE HOCKEY RINK. PROVIDE NEW CONTROL WIRING TO MATCH EXISTING IN CONFORMANCE WITH MANUFACTURER RECOMMENDATIONS. RECONNECT SPEAKER AND SCOREBOARD TO EXISTING CONTROLS. COORDINATE REQUIREMENT WITH CITY OF TORRANCE.
- 19 INTERCEPT EXISTING BOX WITH WIRING SERVING (4) FOUR EXISTING FIXTURES. SPLICE WIRING AS REQUIRED TO CONNECT TO EXISTING WIRING.
- 20 PROVIDE 3' X 3' X 8" WEATHERPROOF ENCLASURE WITH LOCKABLE HINGED COVER. TERMINATE 3" COMMUNICATION WIRING WITH PULLBOX. COMMUNICATION CONDUIT SHALL STUB INTO STORAGE BUILDING. COORDINATE EXACT LOCATION WITH CITY OF TORRANCE.



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**J.C. CHANG & ASSOCIATES, INC.**

ENGINEERS ARCHITECTS PLANNERS  
385 VAN NESS AVENUE, SUITE 208  
TORRANCE, CA. 90501 (310) 212 - 7644  
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STAMPS/SEALS



REVISIONS

△ BID REVISIONS 2015-12-04

SHEET TITLE:

**ELECTRICAL NEW WORK PLAN**

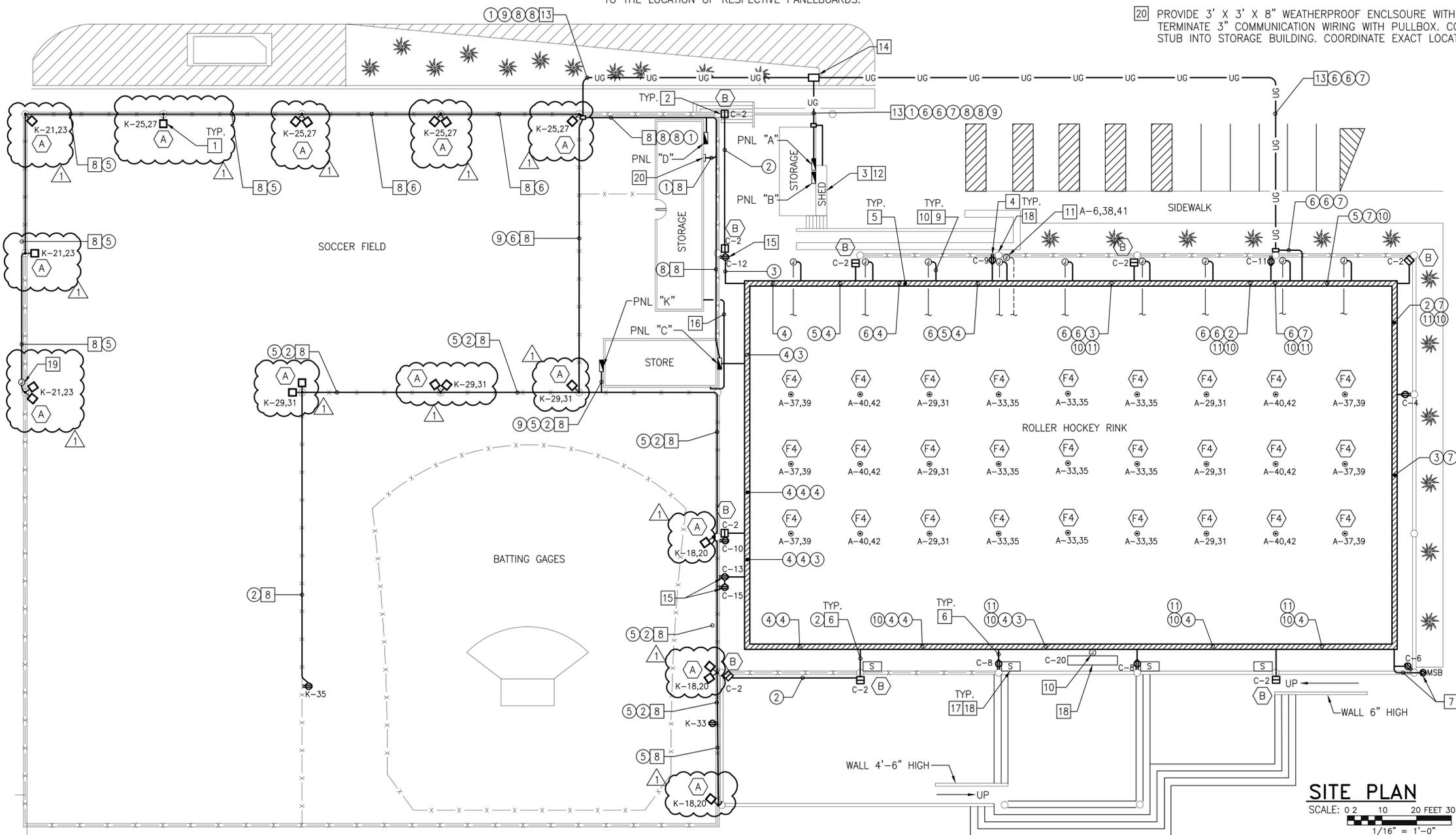
PROJECT NO.: 15580-1 PROJECT ARCH:

DRAWN: SA CHECKED: SA

SHEET NUMBER

**E2.0**

DATE: 2015-12-04 SHEET: X OF: 9

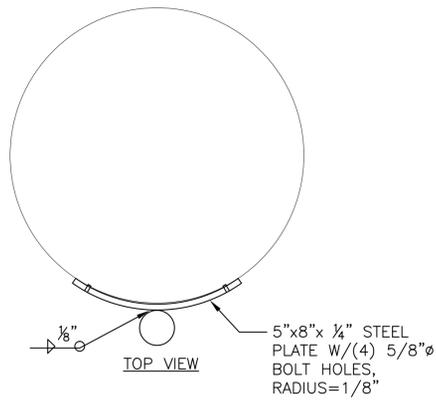


**WIRING SCHEDULE:**

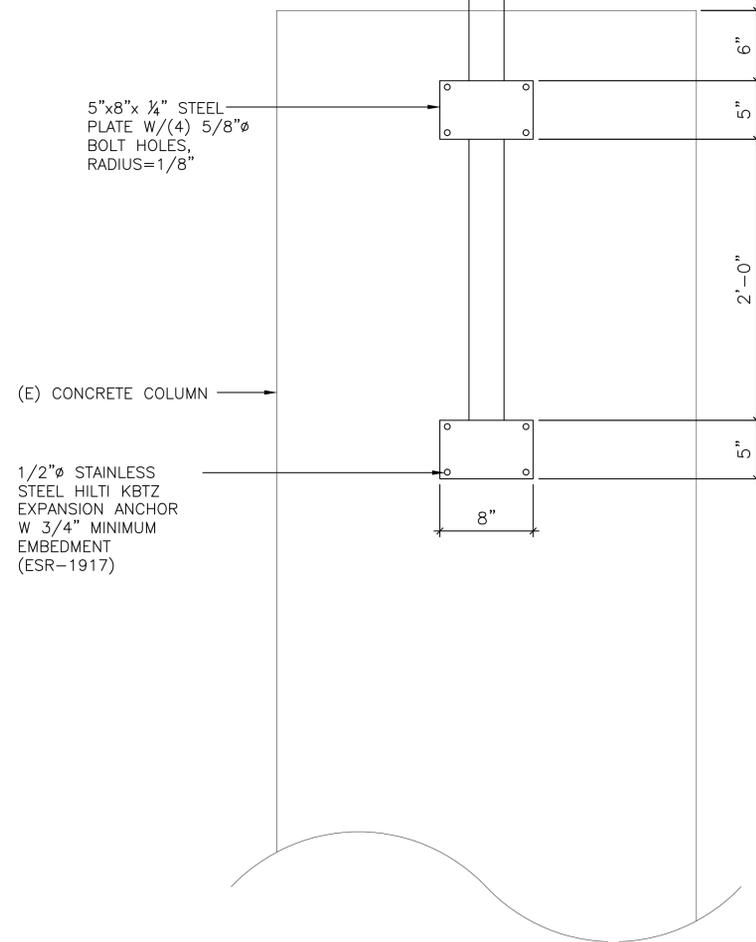
- 1 3"C - PULL STRING(COMM)
- 2 3/4"C - 2#12 + 1#12G
- 3 3/4"C - 4#12 + 1#12G
- 4 3/4"C - 6#12 + 1#12G
- 5 3/4"C - 2#10 + 1#10G
- 6 3/4"C - 4#10 + 1#10G
- 7 3/4"C - 3#8 + 1#8G
- 8 2"C - 3#3/0 + 1#6G
- 9 2"C - 4#3/0 + 1#6G
- 10 1"C - FOR SPEAKERS
- 11 1"C - FOR SCORE BOARD CONTROL WIRING

**SITE PLAN**  
SCALE: 0 2 10 20 FEET 30  
1/16" = 1'-0"

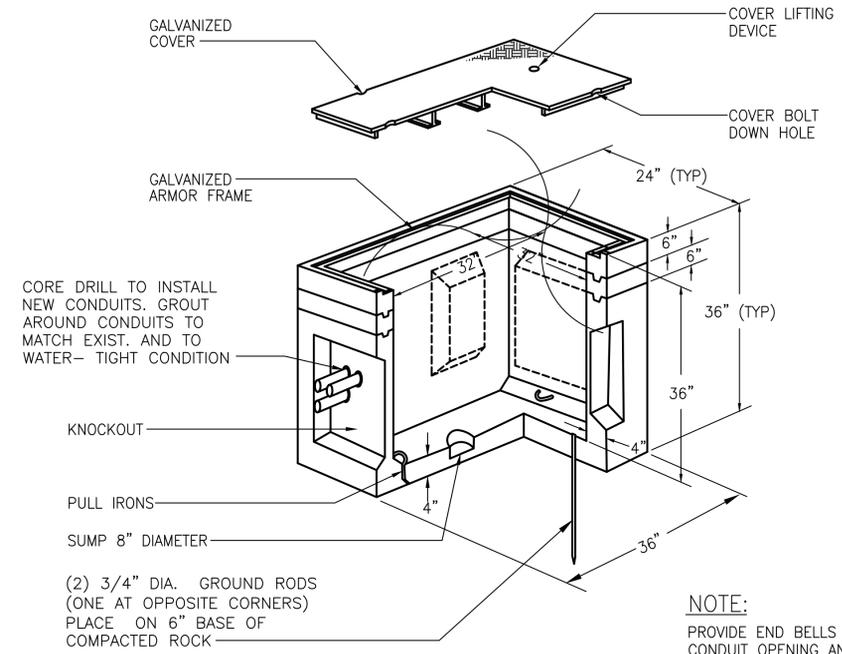
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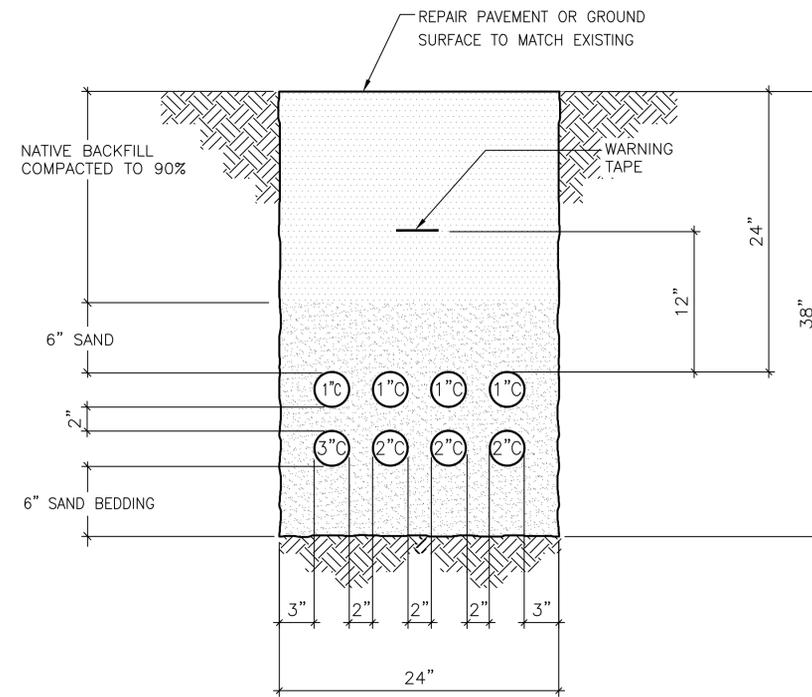
3"Ø POLE WITH FACOTRY WELDED SUPPORT PLATES AND END CAPS. ENTIRE ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.



FIXTURE MOUNTING DETAIL 1  
SCALE : N.T.S.



CONCRETE PULL BOX 2  
SCALE : N.T.S.



TRENCH DETAIL 3  
SCALE : N.T.S.



PROJECT TITLE

**CHARLES H. WILSON PARK ELECTRICAL IMPROVEMENTS**

2200 CRENSHAW BLVD.  
TORRANCE, CA. 90501

PREPARED FOR

**CITY OF TORRANCE  
GENERAL SERVICES DEPARTMENT**

3350 CIVIC CENTER DRIVE  
TORRANCE, CA 90503

CONSULTANT

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SHEET TITLE:

DETAILS

PROJECT NO.: 15580-1 PROJECT ARCH:

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**E3.0**

DATE: 2015-12-04

SHEET: OF: 9



