

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST CODE OF FEDERAL REGULATIONS (CFR), NATIONAL ELECTRICAL CODE EDITION AND ALL APPLICABLE LOCAL CODES AND REGULATIONS.
- ALL WORK IS NEW UNLESS NOTED OTHERWISE.
- ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE TO UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN.
- WHERE WIRE SIZES ARE INDICATED ON PLANS, FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.
- WHERE EXISTING CIRCUITS OR DEVICES ARE DEMOLISHED, MODIFIED, OR REUSED, ENSURE ALL EXISTING ELECTRICAL UTILIZATION DEVICES TO REMAIN ARE ENERGIZED UPON COMPLETION OF WORK.
- CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF MECHANICAL, PLUMBING AND OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ANY WORK.
- CONTRACTOR SHALL EXTEND WIRING FROM ALL JUNCTION BOXES, SWITCHES, ETC., AND MAKE FINAL CONNECTION AS REQUIRED TO ALL BUILDING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
- LOCATION OF LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS, AT OR NEAR DOORS, INSTALL SWITCHES ON SIDE OPPOSITE TO DOOR HINGE, VERIFY FINAL HINGE LOCATION IN FIELD PRIOR TO ANY WORK.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED, FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OR OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED, MAINTAIN HEADROOM AND MINIMUM CODE REQUIRED WORKING CLEARANCES AT ALL TIMES.
- CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WALL OUTLET BOXES FOR SWITCHES, BELLSTROBES, FIRE ALARM PULL STATIONS, RECEPTACLES ETC. WITH CABINETS, FURNITURE, EQUIPMENT ETC., TO AVOID CONFLICT.
- WHERE ELECTRIC MOTORS OR HEATERS ARE INSTALLED IN HUNG CEILINGS, PROVIDE DISCONNECT SWITCH IN HUNG CEILING WITHIN REACH FROM ACCESS POINT.
- FURNISH APPROVED EXPANSION FITTINGS WHERE RACEWAY CROSSES BUILDING EXPANSION JOINTS.
- FURNISH PULL STRING IN EACH RACEWAY RUN OVER 10' IN LENGTH, IN WHICH PERMANENT WIRING IS NOT INSTALLED.
- NOT MORE THAN THREE LIGHTING OR CONVENIENCE OUTLET CIRCUITS ARE PERMITTED IN ONE CONDUIT, PROVIDE SEPARATE CONDUIT FOR EACH HOMERUN INDICATED ON THE DRAWING, UNLESS INDICATED OTHERWISE.
- PROVIDE PULL BOXES WHEREVER NECESSARY TO FACILITATE PULLING OF CONDUCTORS, COORDINATE LOCATIONS OF BOXES WITH OTHER TRADES TO AVOID CONFLICT, PULL BOXES SHALL BE ACCESSIBLE, THE SIZE OF PULL BOX SHALL COMPLY WITH N.E.C. REQUIREMENTS.
- OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILING SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURES.
- SEE MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATION FOR ADDITIONAL CONNECTION REQUIREMENTS TO CONTROL PANELS, CONTROL TRANSFORMERS, POWER FOR CONTROL SYSTEMS AND PE SWITCHES, TIME CLOCKS, VALVES, STARS, RELAYS, LOCATION OF DETECTOR LOCATIONS, ETC. INDICATED ON CONTROL WIRING DIAGRAMS. ELECTRICAL CONTRACTOR SHALL VERIFY FINAL CONTROL WIRING REQUIREMENTS WITH MECHANICAL AND PLUMBING CONTRACTORS PRIOR TO ANY WORK AND PROVIDE ALL NECESSARY DEVICES AND CONNECTIONS AS REQUIRED.
- ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT SHALL BE WEATHERPROOF TYPE, NEMA 3R.
- NO CONDUIT RUNS SHALL BE ALLOWED IN CONCRETE SLABS, ALL CONDUITS WILL BE PLACED ABOVE ACCESSIBLE CEILING SPACES UNLESS SPECIFICALLY INDICATED TO BE UNDERGROUND.
- LIGHTING, POWER, TELEPHONE AND COMMUNICATIONS OUTLETS SHALL NOT BE PLACED BACK-TO-BACK.
- WHERE MORE THAN ONE LIGHT SWITCH OCCURS AT SAME LOCATION, SWITCHES SHALL BE MOUNTED IN A MULTIPLE GROUND BOX UNDER A SINGLE COVER PLATE. SLABS WITH MORE THAN (3) LIGHT SWITCHES SHALL BE LABELED TO INDICATE THE LIGHT FIXTURES CONTROLLED.
- DISCONNECT SWITCHES SHALL BE MOUNTED ON INDIVIDUAL SUPPORTS, OR OTHERWISE DIRECTLY ON EQUIPMENT, PROVIDED NO MODIFICATION TO EQUIPMENT IS NECESSARY.
- ALL ELECTRICAL POWER, LIGHTING, TELEPHONE OR SIGNAL WIRING IN FIRE RATED WALL IS TO BE INSTALLED IN A METALLIC CONDUIT SYSTEM.
- ALL ELECTRIC MATERIAL SHALL BE LISTED BY "UL" FOR THE TYPE OF APPLICATION AND "UL" LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
- CONTACT UTILITY COMPANIES FOR SCOPE OF WORK PRIOR TO SUBMITTING BID. INCLUDE UTILITY CHARGES IF ANY.
- ALL DISTRIBUTION AND CONTROL EQUIPMENT (SUCH AS CBs, SWITCHES, CONTACTORS, ETC.), TERMINATIONS SHALL BE FULLY RATED PER UL AS FOLLOWS:
 - 100A OR LESS - 80°C OR MORE.
 - MORE THAN 100A - 75°C OR MORE.
- ANY ERRORS, OMISSIONS, OR DESIGN DISCREPANCIES ON PLANS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER FOR CLARIFICATION OR CORRECTION PRIOR TO CONSTRUCTION AND PREPARATION OF SUBMITTAL PACKAGES.
- CONDUCTORS SHALL HAVE UNDERWRITERS LABORATORIES, INC.(UL) LISTED, 600 VOLT INSULATION OF TYPE SPECIFIED BELOW OR ELSEWHERE IN THE SPECIFICATIONS. CONDUCTORS SHALL BE COPPER AND LISTED FOR 90 DEGREE APPLICATIONS:
 - BRANCH CIRCUITS - LIGHTING AND POWER.
 - #10 AWG AND SMALLER, SOLID WIRE TYPE THW OR THHN/THWN2, THINER THAN FOR DRY LOCATION ONLY, #10 AWG TO #2 AWG, STRANDED TYPE THW OR THHN/THWN.
 - #1 AWG AND LARGER, STRANDED TYPE XHHW2.
 - FEEDERS - TYPE THW OR THHN/THWN2, OR XHHW2.
- PROVIDE GREEN INSULATED GROUNDING CONDUCTOR IN EACH RACEWAY INCLUDING CONDUITS, PLUG STRIPS, WIREMOLD, SIZE OF GROUNDING SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 250.
- WIRING METHOD SHALL BE EMT ABOVE GROUND AND MOUNTED IN CONCEALED SPACES AND SCHEDULE 40 PVC FOR UNDERGROUND INSTALLATION, USE RIGID WHEN ENCASED IN CONCRETE OR SUSCEPTIBLE TO DAMAGE.
- ALL SWITCH LOCATIONS ARE REQUIRED TO HAVE A NEUTRAL CONDUCTOR PROVIDED AT THE SWITCH LOCATION PER NEC 404.2(D).
- UNLESS OTHERWISE INDICATED, SHARING OF NEUTRAL/GROUNDING CONDUCTORS AMONG SINGLE PHASE BRANCH CIRCUITS OF DIFFERENT PHASES INSTALLED IN THE SAME RACEWAY IS NOT PERMITTED, PROVIDE DEDICATED NEUTRAL/GROUNDING CONDUCTOR FOR EACH INDIVIDUAL BRANCH CIRCUIT.
- UNLESS OTHERWISE INDICATED, PROVIDE A SEPARATE SWITCHED AND UNSWITCHED PHASE CONDUCTOR TO ALL CONTROLLED RECEPTACLES REGARDLESS OF RECEPTACLE CONFIGURATION.
- BASIS OF ELECTRICAL DESIGN LIMITS VOLTAGE DROP TO 2% FOR FEEDERS AND 3% FOR BRANCH CIRCUITS, ANY CHANGES MADE IN THE FIELD SHALL LIMIT VOLTAGE DROP TO THESE PERCENTAGES.
- BRANCH CIRCUIT CONDUITS SHALL BE CONCEALED IN WALL OR CEILING SPACES, EXPOSED CONDUITS ARE NOT ALLOWED WHERE CONCEALED METHODS ARE AVAILABLE.
- CONTRACTOR SHALL PROVIDE CONDUCTORS AND CONDUITS REQUIRED FOR ALL BRANCH CIRCUITS AND FEEDERS. CIRCUIT SIZES NOT SHOWN, REFER TO PANEL SCHEDULES FOR CONDUCTOR AND CONDUIT SIZES.
- ALL EMERGENCY CIRCUITS SHALL BE ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT AND SHALL NOT ENTER SAME RACEWAY, BOXES OR CABINETS WITH OTHER WIRING EXCEPT WHERE PROVIDED IN NEC 706.6.
- REFER TO LIGHTING CONTROL DETAILS FOR WIRING AND CONDUIT REQUIREMENTS, CONTRACTOR SHALL PROVIDE ALL WIRING AND CONDUITS REQUIRED BY MANUFACTURER TO FIXTURES AND CONTROLS.
- THE CONTRACTOR SHALL COORDINATE THE WORK WITH OTHER TRADES. ANY COSTS TO INSTALL WORK TO ACCOMPLISH S.D.D. COORDINATION, WHICH DIFFERS FROM THE WORK AS SHOWN ON THE CONTRACT DOCUMENTS, SHALL BE INCURRED BY THE CONTRACTOR, ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE DURING BID TIME FOR CLARIFICATION, ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
- EXACT ROUTING METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENINGS IN WOOD ROOF DECKS, WALL FLOORS OR STRUCTURAL STEEL MEMBERS SHALL BE DETERMINED BY THE CONTRACTOR IN FIELD, PERFORM CORING, SAWCUTTING, PATCHING AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING AND WATER PROOFING REQUIREMENTS OF THE PARTICULAR WALL, FLOOR OR CEILING. ALL FIRE SEALS SHALL BE UL APPROVED. CONTRACTOR SHALL SCAN ALL CONCRETE WALLS AND SLABS FOR THE PRESENCE OF REBAR AND/OR UTILITIES PRIOR TO DRILLING OR CUTTING. IF CONCRETE WORK IS INVOLVED, CONTRACTOR SHALL PROVIDE CERTIFICATION OF CALIBRATION OF CONCRETE SCANNING EQUIPMENT PRIOR TO PERFORMING WORK.
- ALL 120-VOLT THROUGH 250-VOLT RECEPTACLES SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 50 AMPERES OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 100 AMPERES OR LESS, INSTALLED IN THE LOCATIONS SPECIFIED BELOW SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL AND ANY OTHER AREAS SPECIFIED IN NEC 210.8
 - BATHROOMS.
 - KITCHENS OR AREAS WITH A SINK AND PERMANENT PROVISIONS FOR EITHER FOOD PREPARATION OR COOKING.
 - ROOFTOPS.
 - OUTDOORS.
 - SWIMMING POOLS - WHERE RECEPTACLES ARE INSTALLED WITHIN 6 FT FROM THE TOP.
 - INDOOR DAMP AND WET LOCATIONS.
 - LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES.
 - GARAGES, ACCESSORY BUILDINGS, SERVICE BAYS, AND SIMILAR AREAS OTHER THAN VEHICLE EXHIBITION HALLS AND SHOWROOMS.
 - CRAWL SPACES - AT OR BELOW GRADE LEVEL.
 - UNFINISHED AREAS OF BASEMENTS.
 - LAUNDRY AREAS.
 - BATHTUBS AND SHOWER STALLS - WHERE RECEPTACLES ARE INSTALLED WITHIN 6 FT OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL.

ABBREVIATIONS

A	AMPERE	MH	MANHOLE / METAL HALIDE
AF	AMPERE FRAME RATING (CIRCUIT BREAKER)	MLO	MAIN LUGS ONLY
AFC	AVAILABLE FAULT CURRENT	MM	METER AND MAIN SECTION
AFG	ABOVE FINISHED FLOOR	MV	MEDIUM VOLTAGE
AFG	ABOVE FINISHED GRADE	NC	NORMALLY CLOSED
AFU	AMPERE FUSE RATING (FUSE)	NEC	NATIONAL ELECTRICAL CODE
ABC	AMPERE INTERRUPTING CAPACITY	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
AS	AMPERE SWITCH RATING (FUSE)	NEW (N)	NEW, TO BE FURNISHED AND INSTALLED BY CONTRACTOR
AT	AMPERE TYPING RATING (CIRCUIT BREAKER)	NF	NONFUSED
AWG	AMERICAN WIRE GAUGE	NO	NOT IN CONTRACT
BGG	BARE COPPER GROUND	NL	NIGHT LIGHT
BKBD	BACKBOARD	NO	NUMBER, NORMALLY OPEN
BLDG	BUILDING	NTS	NOT TO SCALE
BKR	BREAKER	OC	ON CENTER
C	CONDUIT	OD	OUTSIDE DIAMETER
CB	CIRCUIT BREAKER	OB	PULL BOX
CKT	CIRCUIT	PF	POWER FACTOR
CFSD	COMBINATION FIRE SMOKE DAMPER	PHL	PANEL
CO	CONDUIT ONLY	POC	POINT OF CONNECTION
CT	CURRENT TRANSFORMER	PP	POWER POLE
CU	COPPER	PWR	POWER
CL	CENTERLINE	PVC	POLYVINYL CHLORIDE
DISC	DISCONNECT	QUAD	QUADRUPEX
DSBN	DISTRIBUTION SECTION	QTY	QUANTITY
DN	DOWN	RGS	RIGID GALVANIZED STEEL
DWG	DRAWING	RMC	RIGID METALLIC CONDUIT
EA	EACH	RM	ROOM
EC	ELECTRICAL CONTRACTOR	RNC	RIGID NONMETALLIC CONDUIT
EGC	EQUIPMENT GROUNDING CONDUCTOR	SHT	SHEET
EM	EMERGENCY	SN	SOLID NEUTRAL
EMT	ELECTRICAL METALLIC TUBING	SPEC	SPECIFICATIONS
EPO	EMERGENCY POWER OFF	SW	SWITCH
EXIST. (E)	EXISTING	SWBD	SWITCHBOARD
EXO	EXTERNAL OPERABLE DISCONNECT	TC	TIME CLOCK
F	FUSE	TEL	TELEPHONE
FA	FIRE ALARM	TERM	TERMINAL
FACP	FIRE ALARM CONTROL PANEL	TP	TEMPORARY POLE
FF	FINISHED FLOOR	TYP	TYPICAL
FG	FINISHED GRADE	UGPS	UNDERGROUND PULL SECTION
FLA	FULL LOAD CURRENT	UL	UNDERWRITERS LABORATORY
GEC	GROUNDING ELECTRODE CONDUCTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
GEN	GENERATOR	UON	UNLESS OTHERWISE NOTED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	V	VOLT, VOLTAGE
GFP	GROUND FAULT PROTECTION	VA	VOLT-AMPERE
GND	GROUND	VO	VOLTAGE DROP
GRC	GALVANIZED RIGID CONDUIT	VFC	VARIABLE FREQUENCY CONTROLLER
HD	HEAVY DUTY	VFD	VARIABLE FREQUENCY DRIVE
HDA	HAND-OPERATED AUTOMATIC	W	WATT
HP	HORSE POWER	WH	WATT-HOUR
HV	HIGH VOLTAGE	WP	WEATHERPROOF
IDF	INTERMEDIATE DISTRIBUTION FRAME	WW	WIREWAY
IG	ISOLATED/INSULATED GROUND	XP	EXPLOSION PROOF
ISC	SHORT CIRCUIT CURRENT AVAILABLE IN RMS	Z	IMPEDANCE
JBOX	JUNCTION BOX	4W	FOUR WIRE
KCMIL	THOUSAND CIRCULAR MILS	3W	THREE WIRE
KW	KILOWATT	SS	STAINLESS STEEL
KV	KILO VOLT	1/2"	1/2" SQUARED X2 1/2" DIA
KVA	KILO VOLT-AMPERE	Ø	DIAMETER, PHASE
LDC	LOCAL DISTRIBUTION CABINET	#	NUMBER
LDF	LOCAL DISTRIBUTION FRAME	*C	DEGREE CELSIUS
LOL	LONG CONTINUOUS LOAD	(E)	EXISTING DEVICE TO REMAIN
LPMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT	(R)	REMOVED EXISTING DEVICE AND ASSOCIATED CONDUIT TO BE RELOCATED
LSIG	LONG, SHORT, INSTANTANEOUS, GROUND	(RL)	REMOVE EXISTING DEVICE AND RELOCATE AS SHOWN ON PLAN
LTG	LIGHTING		NEW LOCATION OF RELOCATED DEVICE
LV	LOW VOLTAGE		
MFR	MANUFACTURER		
MAX	MAXIMUM		
MCC	MOTOR CONTROL CENTER		
MIN	MINIMUM		

NOTE TO CONTRACTOR

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND LISTED DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

ELECTRICAL SHEET INDEX

SHEET NUMBER	SHEET TITLE
1	ELECTRICAL LEGENDS AND NOTES
EN1	2024 COMPLIANCE DOCUMENTS - INDOOR LIGHTING
EN122	2024 COMPLIANCE DOCUMENTS - OUTDOOR LIGHTING
EN123	SINGLE LINE DIAGRAM
1	ELECTRICAL SITE PLAN
1	ELECTRICAL FLOOR PLAN
122	LIGHTING PHOTOMETRIC PLAN
EX1	ELECTRICAL DETAILS

LIGHTING LEGEND AND SYMBOLS

SYMBOL	DESCRIPTION
	2x4 RECESSED LUMINAIRE, FN INDICATES LUMINAIRE TYPE-REFER TO LUMINAIRE SCHEDULE. TYPICAL SUBSCRIPT 248 REFERS TO CIRCUIT AND SWITCH LEGS 'A' AND 'B'. SUBSCRIPT NL REFERS TO UNSWITCHED LEG, TYPICAL OF ALL LIGHTING.
	2x4 RECESSED LUMINAIRE WITH 90MIN EMERGENCY BATTERY BACKUP
	SURFACE MOUNTED DOUBLE FACE EXIT SIGN (UNIVERSAL ARROWS INDICATED AS NEEDED)
	SURFACE MOUNTED SINGLE FACE EXIT SIGN (UNIVERSAL ARROWS INDICATED AS NEEDED)
	SWITCH, SINGLE POLE 20A, MOUNTED 48" AFF, TO TOP OF DEVICE, SUBSCRIPTS INDICATE THE FOLLOWING: M - MOTOR RATED 3 - THREE WAY 4 - FOUR WAY K - KEY OPERATED D - DIMMER SWITCH T - TIMED SWITCH
	a, b, c, ETC. - DESIGNATES SWITCHES CONTROLLED AND QUANTITY OF SWITCHES AT EACH LOCATION.
	OCCUPANCY SENSOR, DUAL-TECHNOLOGY, SURFACE CEILING MOUNTED, WATT STOPPER MODEL #0T-100 OR LEVITON MODEL #0SC2040MW, PROVIDE WITH POWER PACK(S) AS REQUIRED.
	DUAL TECHNOLOGY OCCUPANCY SENSOR, SURFACE WALL MOUNTED 180° LUGAL LEVITON MODEL #0SSMT420 (FOR SINGLE POLE SWITCHING) & LEVITON MODEL #0SSMD420 (FOR DUAL SWITCHING)
	LINE VOLTAGE DAYLIGHT HARVESTING DUAL ZONE PHOTOCELL, CEILING MOUNTED, INTERCONNECTED TO LIGHTING FIXTURE FOR CONTROLS.

APPLICABLE CODES

- 2022 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2022 CALIFORNIA BUILDING CODE (CBC) PART 1, TITLE 24 C.C.R., CBC WITH AMENDMENTS
- 2022 CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE 24 C.C.R., CEC WITH AMENDMENTS
- 2022 CALIFORNIA MECHANICAL CODE (CMC) PART 5, TITLE 24 C.C.R., CMC WITH AMENDMENTS
- 2022 CALIFORNIA PLUMBING CODE (CPC) PART 6, TITLE 24 C.C.R., CPC WITH AMENDMENTS
- 2022 CALIFORNIA FIRE CODE, PART 7, TITLE 24 C.C.R., FIRE CODE WITH AMENDMENTS
- 2022 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
- TITLE 19 C.C.R., PUBLIC SAFETY FIRE MARSHAL REGULATIONS.
- 2024 CALIFORNIA EMERGENCY CODE (PEL) TITLE 24 C.C.R.
- 2022 CALIFORNIA REFERENCED STANDARDS, CODE (CDBSS), PART 11, TITLE 24 C.C.R.

POWER LEGEND AND SYMBOLS

SYMBOL	DESCRIPTION
A-1	SUBSCRIPT "A-1" REFERS TO PANEL DESIGNATION WITH CIRCUIT NUMBER, TYPICAL OF ALL RECEPTACLE OUTLETS.
	DUPLX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" AFF, TO BOTTOM OF DEVICE U/L.
	DOUBLE DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" AFF, TO BOTTOM OF DEVICE U/L.
	DUPLX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS, GFCI TYPE) MOUNTED +15" AFF, TO BOTTOM OF DEVICE U/L.
	DUPLX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) WITH MOUNTING HEIGHT HORIZONTALLY ABOVE COUNTER TOP PER ARCHITECTURAL PLANS OR APPROVAL.
	DUPLX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS, GFCI TYPE) WITH MOUNTING HEIGHT HORIZONTALLY ABOVE COUNTER TOP PER ARCHITECTURAL PLANS OR APPROVAL.
WP	WEATHERPROOF DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" AFF, TO BOTTOM OF DEVICE U/L.
	DUPLX RECEPTACLE OUTLET, SINGLE SPILT-CIRCUIT SWITCHED, (20 AMPS, 125 VOLTS) MOUNTED +15" AFF, TO BOTTOM OF DEVICE U/L.
	SURFACE MOUNTED DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" AFF, TO BOTTOM OF DEVICE U/L.
	RECESSED CEILING MOUNTED DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) U/L.
	ABOVE CEILING CONCEALED JUNCTION BOX WITH COVER, PER NATIONAL ELECTRICAL CODE (NEC) TABLE 314.16(A)(B), 4" SQUARE DEEP, WITH PLASTER RING.
	RECESSED WALL MOUNTED JUNCTION BOX WITH COVER, PER NATIONAL ELECTRICAL CODE (NEC) TABLE 314.16(A)(B), 4" SQUARE DEEP, WITH PLASTER RING.
	DUPLX RECEPTACLE, FLUSH IN FLOOR, WATERTIGHT JUNCTION BOX (HINGED BRASS COVER, 20 AMP, 120 VOLT, 2-POLE, 3-WIRE) U/L.
	DOUBLE DUPLEX RECEPTACLE, FLUSH IN FLOOR, WATERTIGHT JUNCTION BOX (20 AMP, 120 VOLT, 2-POLE, 3-WIRE) U/L.
	JUNCTION BOX, FLUSH IN FLOOR, WATERTIGHT (HINGED BRASS COVER, 20 AMP, 120 VOLT, 2-POLE, 3-WIRE) U/L.
	FLOOR BOX NOTE WHERE INDICATED IN AN EXISTING SLAB, PROVIDE SAWCUTTING OF SLABS AS REQUIRED AND EXTEND CONDUIT AND WIRING TO JUNCTION BOX IN NEAREST ACCESSIBLE WALL. DO NOT SAWCUT THROUGH POST TENSION SLABS.
	SPECIALTY OUTLET, VERIFY NEMA CONFIGURATION AS NOTED ON PLANS.
	BRANCH PANEL BOARD, WALL MOUNTED, SEE PLANS AND SCHEDULE, (SURFACE MOUNTED)
	BRANCH PANEL BOARD, WALL MOUNTED, SEE PLANS AND SCHEDULE, (RECESSED MOUNTED)
	MAIN SWITCHBOARD, POWER OR LIGHT, FLOOR STANDING ENCLOSURE, (SEE SINGLE LINE DIAGRAM AND LOAD SUMMARY)
	HEAVY DUTY SAFETY SWITCH HUP, AND 600 VOLTS RATED, "I" INDICATES FUSE TYPE, FUSES PER APPROVED EQUIPMENT MANUFACTURERS SHOP DRAWINGS, SUBSCRIPT INDICATES SWITCH AMPERE RATING, # OF POLES TO MATCH SUPPLY CIRCUIT.
	MAGNETIC MOTOR STARTER HUP, RATED (NUMBER INDICATES NEMA SIZE)
	MOUNTING HEIGHT FROM FINISHED FLOOR TO BOTTOM LINE OF OUTLET OR EQUIPMENT, FOR LIGHT FIXTURES, IT IS TO BOTTOM OF FIXTURE.
	CONDUIT STUBBED AND CAPPED, SIZE AND QUANTITIES PER PLANS.
	CONDUIT CONCEALED IN OR UNDER FLOOR, 3/4" U/L, COORDINATE WITH G.C. OR BURIAL CONDUIT UNDERGROUND, REFER TO PLANS, DETAILS AND SPECIFICATIONS.
	DETAIL REFERENCE
	EQUIPMENT REFERENCE
	ELECTRICAL UTILITY PRIMARY
	ELECTRICAL UTILITY SECONDARY
	UTILITY TELEPHONE
	TEMPORARY OVERHEAD CABLING
	HOMERUN TO CIRCUITS #1 AND #6 IN PANEL "A", REFER TO PANEL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZES, QTY AS REQUIRED.
	GROUND WELL
	EXISTING (DASH INDICATES) ELECTRICAL EQUIPMENT
	TELEPHONE BACKBOARD 2'X4'X3/4" PLYWOOD, PROVIDE 2" CONDUIT TO TELEPHONE POC.
	MOLDED CASE CIRCUIT BREAKER
	MOLDED CASE SHUNT TRIP CIRCUIT BREAKER
	MOLDED CASE DRAW OUT TYPE CIRCUIT BREAKER
	REMOTE CONTROLLED, ELECTRONICALLY OPERATED CIRCUIT BREAKER
	SWITCH AND FUSE ASSEMBLY
	UTILITY COMPANY PULL SECTION LUGS
	GROUNDING CONNECTION TO MAIN BUILDING GROUND SYSTEM U/L.
	GROUNDING CONNECTION AT SWITCHGEAR/DISTRIBUTION BOARD WITH NEUTRAL BONDING.
	IN-RACE UTILITY COMPANY METER
	UTILITY METER WITH CIRCUIT TRANSFORMERS (CTS) METER
	SOLID STATE DEVICE CONNECTED TO THE POWER DISTRIBUTION SYSTEM
	GROUND FAULT PROTECTION DEVICE CONNECTED TO THE POWER DISTRIBUTION SYSTEM
	SURGE PROTECTION DEVICE
	TRANSFORMER WITH SECONDARY GROUND, REFER TO SINGLE LINE DIAGRAM FOR KVA RATING AND GROUNDING REQUIREMENTS.
	ON-SITE GENERATOR SET
	STAINLESS STEEL SURFACE MOUNTED WIREMOLD MOUNTED AT 48" AFF, U/L IF POWER AND DATA ARE SHOWN, PROVIDE WITH DUAL CHANNEL, RACEWAY, WIREMOLD 4000 SERIES.
	CONDUIT WIRING DESCRIPTION PER FEEDER SCHEDULE ON OTHER PLAN
	CONCRETE ELECTRICAL PULL BOX WITH LID APPROPRIATE FOR INSTALLATION LOCATION, LID SHALL BE LABELED "ELECTRICAL" OR "COMM" ACCORDING TO USE.
	THERMOSTAT SUPPLIED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL PROVIDE 3/4" CUL BACK TO ASSOCIATED HVAC UNIT, REFER TO MECHANICAL DETAILS FOR 1-STAT MOUNTING HEIGHT REQUIREMENTS, VERIFY LOCATIONS WITH HVAC CONTRACTOR PRIOR TO ROUGHING.



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PROJECT ADMINISTERED BY:
**SAN BERNARDINO COUNTY
PROJECT & FACILITIES
MANAGEMENT DEPARTMENT**

385 N. ARROWHEAD AVE.
SAN BERNARDINO, CA 92415

PROJECT NAME:

**FIRE STATION 305
PREFABRICATED
METAL STORAGE
BUILDING**

PROJECT # 10.10.1200

8331 CALIENTE ROAD
HESPERIA, CA 92344

ISSUE INFORMATION:

DATE:	INFORMATION:
02-29-24	PM 1st PC
04-24-24	BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-164-22
SCALE: AS NOTED
DATE: FEBRUARY 2024
PLOT DATE: -
DRAWING NAME: -

SEAL:



SHEET TITLE:

**ELECTRICAL
LEGENDS AND
NOTES**

SHEET NO.:

E0.1

STATE OF CALIFORNIA Indoor Lighting		CALIFORNIA ENERGY EFFICIENCY NRECC-LTH	
CERTIFICATE OF COMPLIANCE			
Project Name: PS 305 - Metal Storage Building		Report Page: (Page 7 of 7)	
Project Address: 8331 Caliente Road		Date Prepared: 2/16/2024	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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Company: Design West Engineering	Signature Date: 2024-02-16
Address: 412 East Vanderbil Way	CEA/HES Certification Identification (If applicable):
City/State/Zip: San Bernardino CA 92408	Phone: 909-890-3700

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.
- The building permit issued for this 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: Leonard P Maya	Responsible Designer Signature:
Company: Design West Engineering	Date Signed: 2024-02-16
Address: 412 E Vanderbil Way	License: S19450
City/State/Zip: San Bernardino CA 92408	Phone: 9098903700

Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev J2020101	Documentation Software: EnergyPro Compliance ID: EnergyPro-4473-0224-1927 Report Generated: 2024-02-16 08:21:04
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CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance

STATE OF CALIFORNIA		CALIFORNIA ENERGY COMMISSION	
Indoor Lighting			
CERTIFICATE OF COMPLIANCE			
Project Name: FS 305 - Metal Storage Building		Report Page: 1	NREC-11 (Page 5 of 7)
		Date Prepared:	7/6/2024
K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE			
This section does not apply to this project.			
L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY			
This section does not apply to this project.			
M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING			
This section does not apply to this project.			
N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE / SPECIAL EFFECTS			
This section does not apply to this project.			
O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE			
This section does not apply to this project.			
P. POWER ADJUSTMENT: LIGHTING CONTROL SYSTEM (POWER ADJUSTMENT FACTOR)			
This section does not apply to this project.			
Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-TO-ONE ALTERATIONS			
This section does not apply to this project.			
R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXEMPTIONS			
This section does not apply to this project.			
CA Building Energy Efficiency Standards - 2019 Residential Compliance		Generated Date/Time: 2024-07-06 16:08:21	Documentation Software: EnergyPro
		Report Version: 2022.0.000	Compliance ID: EnergyPro-4473-0224-1927
		Schema Version: rev 20220101	Report Generated: 2024-07-06 16:08:21

STATE OF CALIFORNIA		CALIFORNIA ENERGY COMMISSION	
Indoor Lighting		NRCC-01-C (Page 6 of 7)	
CERTIFICATE OF COMPLIANCE			
Project Name:	FS-305 - Metal Storage Building	Report Page:	2/16/2024
		Date Prepared:	

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
 This section does not apply to this project.

T. DWELLING UNIT LIGHTING
 This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online.

Form/Title	
NRCC-LTI-F - Must be submitted for all buildings.	

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: <http://www.energy.ca.gov/title24/attcp/providers.html>.

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	Metal Storage Building;
NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	Metal Storage Building;

Generated Date/Time:

 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance

Report Version: 2022.0.000
 Schema Version: rev 2020101

Documentation Software: EnergyPro

 Compliance ID: EnergyPro-4473-0224-1927
 Report Generated: 2024-02-16 08:21:04



EN0.21

STATE OF CALIFORNIA Outdoor Lighting		CALIFORNIA ENERGY COMMISSION NNEC-170-B	
CERTIFICATE OF COMPLIANCE			
Project Name: PS 825 - Metal Storage Building		Report Page: (Page 7 of 7)	
Project Address: 8331 Caliente Road		Date Prepared: 2/16/2024	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Leonard P Mayra	Documentation Author Signature:
Company: Design West Engineering	Signature Date: 2024-02-16
Address: 412 East Vanderbil Way	City/ HESB Certification Identification (if applicable): City
City/State/Zip: San Bernardino CA 92408	Phone: 909-890-3700

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 ensure that a completed signed copy of this Certificate of Compliance shall be made available to 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: Leonard P Mayra	Responsible Designer Signature:
Company: Design West Engineering	Date Signed: 2024-02-16
Address: 412 E Vanderbil Way	License: 6134850
City/State/Zip: San Bernardino CA 92408	Phone: 9098903700

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
 Report Version: 2022.0.00
 Schema Version: rev 20220101

Documentation Software: EnergyPro
 Report ID: EnergyPro-4473-0224-1936
 Report Generated: 2024-02-16 08:21:04

STATE OF CALIFORNIA

Outdoor Lighting

CALIFORNIA ENERGY COMMISSION

NCEC-101

Page 5 of 7

CERTIFICATE OF COMPLIANCE

Project Name:FS 305 - Metal Storage Building

Report Page:1

Date Prepared:1/16/2024

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/ Table 170.2-A while "Use it or lose it" Allowances are per Table 140.7-B/ Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H, and are not included here. All other multifamily outdoor lighting is included here.

01

General Hardscape Allowance Table I (Watts)

☒

Per Application Table I

Sales Frontage Table K

☐

Ornamental Table L

☐

Per Specific Area Table M

Allowance (select all that apply) (select all that apply)

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

02	03	04	05	06	07	08	09
Area Description	Illuminated Area (ft²)	Allowance Density (W/ft²)	Area Allowance (Watts)	Permitted Length (ft)	Linear Wattage Allowance (W/ft)	Linear Allowance (Watts)	Total General AWA + Linear (Watts)
Building Exterior	2130	0.19	405.5	275	0.2	41.2	82
Initial Wattage Allowance for Entire Site (Watts):						200	
Instances of Initial Wattage Allowance (L2 0 only)*						0	
Total General Hardscape Allowance (Watts):						282	

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

Generated Date/Time:1/16/2024 10:00

Documentation Software:EnergyPro

CA Building Energy Efficiency Standards - 2022 Residential Compliance

Report Version: 2022.0.000

Compliance ID: EnergyPro-4473-0224-1926

Schema Version: rev2020101

Report Generated: 2024-02-16 08:21:04



600V FEEDER SCHEDULE 3Ø 3W						
LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20A	20A-3W	1	3 # 12	NA	1 # 12	3/4"
30A	30A-3W	1	3 # 10	NA	1 # 10	3/4"
40A	40A-3W	1	3 # 8	NA	1 # 10	1"
50A	50A-3W	1	3 # 6	NA	1 # 10	1"
60A	60A-3W	1	3 # 6	NA	1 # 10	1"
70A	70A-3W	1	3 # 4	NA	1 # 8	1"
80A	80A-3W	1	3 # 3	NA	1 # 8	1-1/4"
90A	90A-3W	1	3 # 2	NA	1 # 8	1-1/4"
100A	100A-3W	1	3 # 1	NA	1 # 8	1-1/4"
125A	125A-3W	1	3 # 1	NA	1 # 6	1-1/2"
150A	150A-3W	1	3 # 1/0	NA	1 # 6	1-1/2"
175A	175A-3W	1	3 # 2/0	NA	1 # 6	2"
200A	200A-3W	1	3 # 3/0	NA	1 # 6	2"
225A	225A-3W	1	3 # 4/0	NA	1 # 4	2 1/2"
250A	250A-3W	1	3 # 250 KCM	NA	1 # 4	2 1/2"
300A	300A-3W	1	3 # 350 KCM	NA	1 # 4	3"
350A	350A-3W	1	3 # 500 KCM	NA	1 # 2	4"
400A	400A-3W	2	3 # 3/0	NA	1 # 2	3"
450A	450A-3W	2	3 # 4/0	NA	1 # 2	3"
500A	500A-3W	2	3 # 250 KCM	NA	1 # 2	3"
600A	600A-3W	2	3 # 350 KCM	NA	1 # 1/0	4"
700A	700A-3W	2	3 # 500 KCM	NA	1 # 1/0	4"
800A	800A-3W	3	3 # 3/0 KCM	NA	1 # 1/0	3"
1000A	1000A-3W	3	3 # 500 KCM	NA	1 # 2/0	4"
1200A	1200A-3W	3	3 # 600 KCM	NA	1 # 3/0	4"
1600A	1600A-3W	4	3 # 600 KCM	NA	1 # 4/0	4"
2000A	2000A-3W	5	3 # 600 KCM	NA	1#250KCM	4"
2500A	2500A-3W	6	3 # 600 KCM	NA	1#350KCM	4"
3000A	3000A-3W	8	3 # 600 KCM	NA	1#500KCM	4"
4000A	4000A-3W	10	3 # 600 KCM	NA	1#500KCM	4"

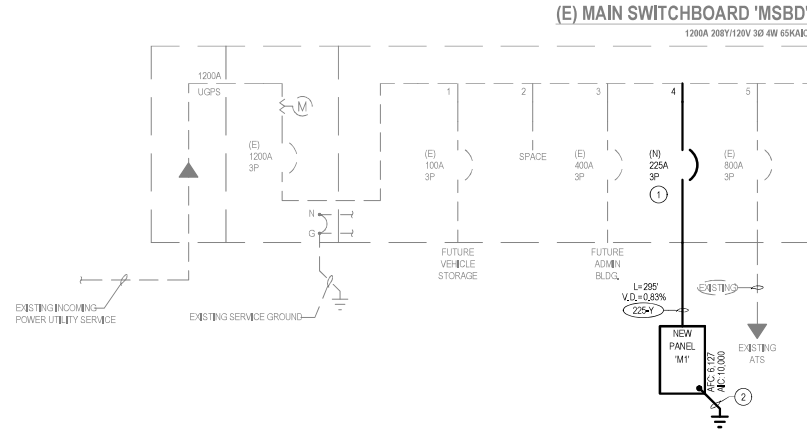
NOTE:
ALL CONDUCTOR SIZES ARE BASED ON TYPE THHN COPPER CONDUCTOR UNLESS OTHERWISE NOTED. THE AMPLACITY OF CONDUCTORS SHALL BE BASED ON THE TERMINALS NOT TO EXCEED 90°C FOR CONDUCTOR SIZE #14 THROUGH #1 AWG OR 75°C FOR CONDUCTOR SIZE OVER #1 AWG AS PER NEC 110.14(C).

600V FEEDER SCHEDULE 3Ø 4W						
LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20A	20A-4W	1	3 # 12	1 # 12	1 # 12	3/4"
30A	30A-4W	1	3 # 10	1 # 10	1 # 10	3/4"
40A	40A-4W	1	3 # 8	1 # 10	1 # 10	1"
50A	50A-4W	1	3 # 6	1 # 6	1 # 10	1"
60A	60A-4W	1	3 # 6	1 # 6	1 # 10	1"
70A	70A-4W	1	3 # 4	1 # 4	1 # 8	1"
80A	80A-4W	1	3 # 3	1 # 3	1 # 8	1-1/4"
90A	90A-4W	1	3 # 2	1 # 2	1 # 8	1-1/4"
100A	100A-4W	1	3 # 1	1 # 1	1 # 8	1-1/2"
125A	125A-4W	1	3 # 1	1 # 1	1 # 6	1-1/2"
150A	150A-4W	1	3 # 1/0	1 # 1/0	1 # 6	1-1/2"
175A	175A-4W	1	3 # 2/0	1 # 2/0	1 # 6	2"
200A	200A-4W	1	3 # 3/0	1 # 3/0	1 # 6	2"
225A	225A-4W	1	3 # 4/0	1 # 4/0	1 # 4	2 1/2"
250A	250A-4W	1	3 # 250 KCM	1 # 250 KCM	1 # 4	2 1/2"
300A	300A-4W	1	3 # 350 KCM	1 # 350 KCM	1 # 4	3"
350A	350A-4W	1	3 # 500 KCM	1 # 500 KCM	1 # 2	4"
400A	400A-4W	2	3 # 3/0	1 # 3/0	1 # 2	3"
450A	450A-4W	2	3 # 4/0	1 # 4/0	1 # 2	3"
500A	500A-4W	2	3 # 250 KCM	1 # 250 KCM	1 # 2	3"
600A	600A-4W	2	3 # 350 KCM	1 # 350 KCM	1 # 1/0	4"
700A	700A-4W	2	3 # 500 KCM	1 # 500 KCM	1 # 1/0	4"
800A	800A-4W	3	3 # 3/0 KCM	1 # 3/0 KCM	1 # 1/0	3"
1000A	1000A-4W	3	3 # 500 KCM	1 # 500 KCM	1 # 2/0	4"
1200A	1200A-4W	3	3 # 600 KCM	1 # 600 KCM	1 # 3/0	4"
1600A	1600A-4W	4	3 # 600 KCM	1 # 600 KCM	1 # 4/0	4"
2000A	2000A-4W	5	3 # 600 KCM	1 # 600 KCM	1#250KCM	4"
2500A	2500A-4W	6	3 # 600 KCM	1 # 600 KCM	1#350KCM	4"
3000A	3000A-4W	8	3 # 600 KCM	1 # 600 KCM	1#500KCM	4"
4000A	4000A-4W	10	3 # 600 KCM	1 # 600 KCM	1#500KCM	4"

NOTE:
ALL CONDUCTOR SIZES ARE BASED ON TYPE THHN COPPER CONDUCTOR UNLESS OTHERWISE NOTED. THE AMPLACITY OF CONDUCTORS SHALL BE BASED ON THE TERMINALS NOT TO EXCEED 90°C FOR CONDUCTOR SIZE #14 THROUGH #1 AWG OR 75°C FOR CONDUCTOR SIZE OVER #1 AWG AS PER NEC 110.14(C).

FEEDER SCHEDULE

3



GENERAL NOTES

- REFER TO GENERAL NOTES ON ELECTRICAL LEGENDS AND NOTES SHEET FOR WIRING METHODS, MATERIALS, AND REQUIREMENTS.
- ALL CIRCUIT BREAKERS, PANELBOARDS AND TRANSFORMERS SHALL BE OF THE SAME MANUFACTURE.
- ALL GROUND CONNECTIONS SHALL BE CADDLED.
- ALL PANELBOARDS SHALL BE FULLY RATED FOR THE AVAILABLE FAULT UNLESS OTHERWISE NOTED.
- WHEN APPLICABLE OVERCURRENT DEVICE ENCLOSURES SHALL BE IDENTIFIED AS SERIES RATED AND LABELED IN ACCORDANCE WITH CEC 110.22. THE OVERCURRENT DEVICES SHALL BE RATED PER MANUFACTURER'S LABELING OF THE ELECTRICAL EQUIPMENT.
- THE FEEDER LENGTHS SHOWN ON THESE DRAWINGS ARE FOR CALCULATION PURPOSES ONLY AND ARE NOT VALID FOR BIDDING.
- EQUIPMENT DATA AND CONFIGURATIONS SHOWN ON THE SINGLE LINE DIAGRAM PROVIDE GENERAL EQUIPMENT INFORMATION. CONTRACTOR SHALL REVIEW ELECTRICAL PLANS AND SPECIFICATIONS TO VERIFY ALL EQUIPMENT ASSOCIATED DESIGN INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COMPONENTS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION. ANY DISCREPANCIES BETWEEN DESCRIPTIONS, SPECIFICATIONS, AND EXISTING CONDITIONS ARE TO BE PRESENTED TO THE ENGINEER OF RECORD PRIOR TO COMPLETION OF THE BIDDING PROCESS FOR CLARIFICATION. NO EQUIPMENT SHALL BE ORDERED UNTIL DISCREPANCIES ARE RESOLVED THROUGH A FORMAL RFI PROCESS.
- GROUND ALL ELECTRICAL EQUIPMENT, BRANCH CIRCUITS, FEEDERS, PANEL AND DISTRIBUTION BOARDS, ELECTRICAL SERVICES, ETC. PER ADOPTED CEC ARTICLES 250.
- ALL PANELBOARDS INSTALLED IN GARAGES OR AREAS COMPLYING WITH ARTICLE 500.511, AND/OR 514 SHALL BE INSTALLED 18" MINIMUM ABOVE FLOORLINE TO BOTTOM OF PANEL AND SHALL BE MULTIPLE PANELS AS REQUIRED WITH TOP MOST BREAKER NO HIGHER THAN 6'-7" A.F.F. PER ARTICLE 360.
- ALL ELECTRICAL EQUIPMENT (I.E. SWITCHGEAR, TRANSFORMERS, DISTRIBUTION BOARDS, PANELBOARDS, DISCONNECT SWITCHES, ETC.) SHALL BE PROVIDED WITH A PERMANENT NAMEPLATE WITH ENGRAVED LETTERS PER SPECIFICATIONS. ALL NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) MACHINE SCREWS. NO SELF-ADHESIVE NAMEPLATES ARE ALLOWED.
- ELECTRICAL CONTRACTOR TO INCLUDE IN BID ALL ASSOCIATED COSTS FOR THIRD PARTY TESTING OF ELECTRICAL EQUIPMENT, GROUND FAULT, CONDUCTORS, ETC.
- ALL CONDUCTOR TERMINATIONS SHALL BE TIGHTENED TO MANUFACTURER RECOMMENDATIONS USING AN APPROVED MEANS.
- ALL ELECTRICAL EQUIPMENT SHALL BE IDENTIFIED WITH NAMEPLATES. REFER TO SPECIFICATIONS. IN ADDITION, EACH DISCONNECT MUST BE MARKED TO IDENTIFY ITS PURPOSE AND INCLUDE IDENTIFICATION OF CIRCUIT SOURCE THAT SUPPLIES DISCONNECTING MEANS, (110.22)

CONSTRUCTION NOTES

- PROVIDE NEW CIRCUIT BREAKER IN EXISTING MAIN SWITCHBOARD 'MSBD'. TYPE TO MATCH EXISTING, AND RATING TO BE GREATER THAN AVAILABLE FAULT CURRENT.
- (1) #10 GUL GLEZ TO GROUNDS ROD AND/OR CONCRETE ENCASED ELECTRODE AND (1) #10 BOND TO METAL ICE COLD WATER SUPPLY PIPE AT UNIT ENTRY PER CEC 250.5(A) AND 250.10(A). DO NOT BOND NEUTRAL AND GROUND TERMINALS INSIDE SWITCHBOARD OR PANELBOARD (NO GROUND LOOP).

SINGLE LINE DIAGRAM

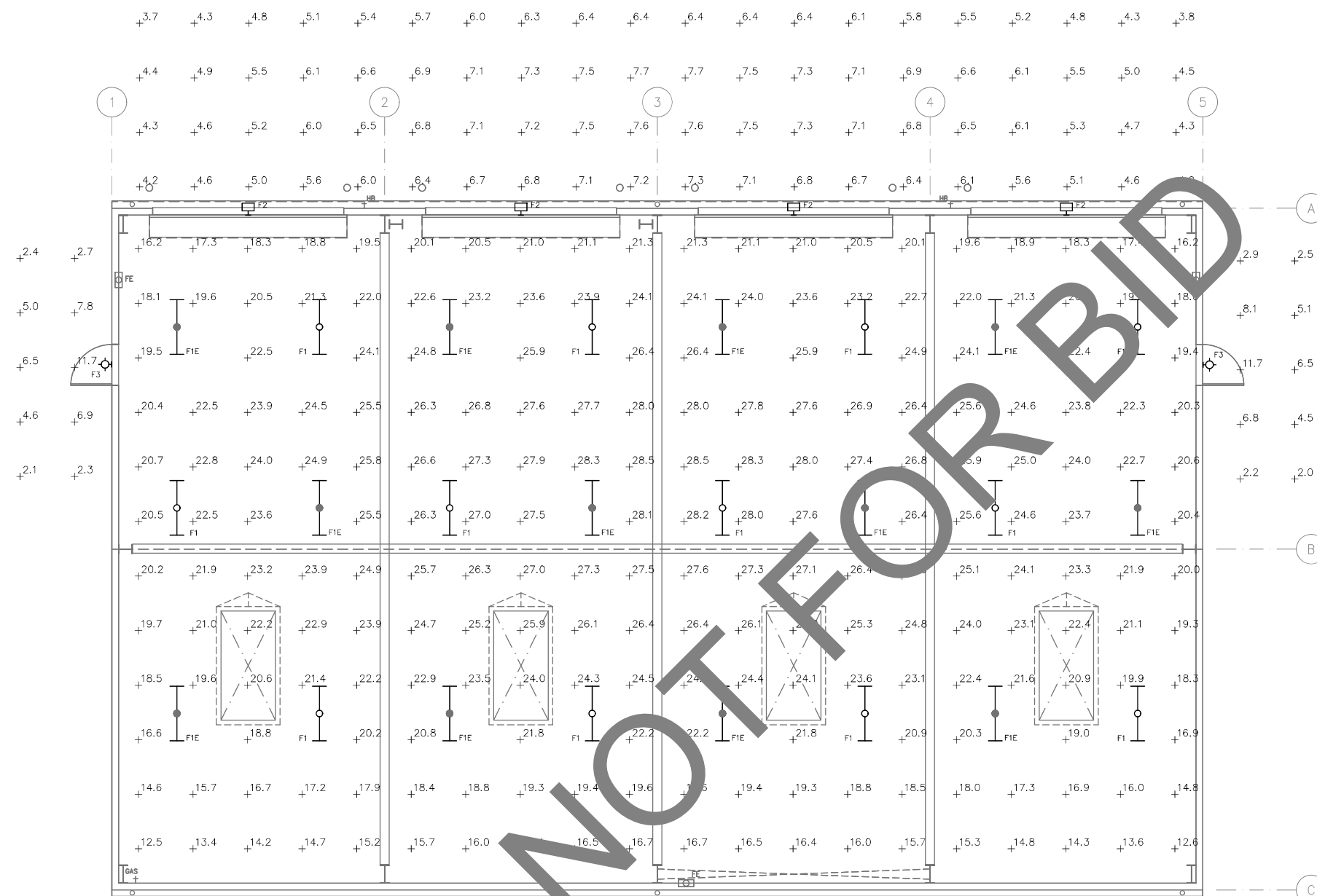
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LOAD SUMMARY		
EXISTING MAIN SWITCHBOARD 'MSBD'		
	LOAD VA	LOAD AMPS
1 EXISTING LOAD (KW)	54000	150
2 KW TO KVA (0.8PF)	67500	38
3 +25% EXIST LOAD PER NEC 220.87	16875	47
4 NEW PANEL 'M1'	19553	55
TOTAL LOAD INCLUDING NEC DEMAND FACTORS:		
208Y/120V 3PH 4W	104028	289
EXISTING SWITCHBOARD RATED:		1200
*EXISTING LOAD BASED ON PEAK DEMAND FROM 1 YR. UTILITY METERING HISTORY		

LOAD SUMMARY

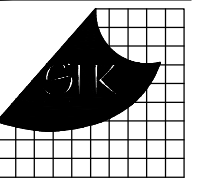
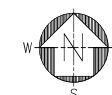
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MOUNTING: SURFACE FED FROM: MAIN SWBD 'MSBD'										PANEL M1 (NEW)										VOLTAGE: 208Y/120V 3PH 4W BUS: 225 A MAIN: 225 A 3P FEEDER: 225 -Y									
A/C RATING: 10,000										LOCATION: METAL BUILDING																			
NOTE	DESCRIPTION	A	D	C	TYPE	POLE	AMP	ANGP-1	LENGTH	Y.D. %	CONDUIT	PHASE	CONDUIT	Y.D. %	LENGTH	ANGP-1	AMP	POLE	TYPE	A	D	C	DESCRIPTION	NOTE					
	SUBMERSIBLE PUMP	300			N	3	20	#10	295	0.74	1"	A - -	2											SPACE					
	-----		300		N	- -						3 - - B -	4	3/4"	2.70	90	#12	20	1	R		1080		GENERAL RECEPTACLES					
	-----			300	N	- -						5 - - C -	5											SPACE					
	COILING DOOR MOTOR	2400			M	1	25	#8	70	1.82	1"	A - -	8											SPACE					
	COILING DOOR MOTOR		2400		N	1	25	#8	80	2.08	1"	B -	10	3/4"	1.16	40	#12	20	1	L		1041		INTERIOR LIGHTING WEST					
	COILING DOOR MOTOR			2400	N	1	25	#8	90	2.34	1"	- C	12	3/4"	2.02	70	#12	20	1	L			1041	INTERIOR LIGHTING EAST					
	COILING DOOR MOTOR	2400			N	1	25	#8	100	2.60	1"	A - -	14											SPACE					
	RH-1		1128		N	1	15	#12	20	0.63	3/4"	15	- B -	16	3/4"	0.89	100	#12	20	1	L		248	EXTERIOR LIGHTING					
	RH-2			1128	N	1	15	#12	40	1.25	3/4"	17	- C	18	3/4"	1.47	45	#12	20	1	N		1176	EF-1					
	RH-3	1128			N	1	15	#12	70	2.19	3/4"	19	A - -	20										SPACE					
	SPACE											21	- B -	22										SPACE					
	SPACE											23	- C	24										SPACE					
	SPACE											25	A - -	26										SPACE					
	SPACE											27	- B -	28										SPACE					
	SPACE											29	- C	30										SPACE					
	SPACE											31	A - -	32										SPACE					
	SPACE											33	- B -	34										SPACE					
	SPACE											35	- C	36										SPACE					
	SPACE											37	A - -	38										SPACE					
	SPACE											39	- B -	40										SPACE					
	SPACE											41	- C	42										SPACE					
SUBTOTALS		6228	3528	3528																		0	2369	2217					
NEC/CEC LOAD CALC:		CONNECTED		DEMAND		DEMAND		DEMAND		DEMAND		SUBTOTALS:		PHASE				NOTES:											
LOAD TYPE		VA		FACTOR		VA		AMPS				6228 VA		A															
(L) LIGHTING		2330		1.25		2913		8				6197 VA		B															
(R) RECEPTACLE		1080		NEC 220.44		1080		3				6046 VA		C															
(M) MOTOR		2400		1.25		3000		8				18470 VA		TOTAL															
LARGEST MOTOR				0.25		0		0				52		AMPS															
(C) CONTINUOUS		0		1.25		0		0																					
(N) NON CONTINUOUS		12660		1.00		12660		35																					
(K) KITCHEN (NEC 220.56)		0		0.55		0		0																					
(S) SPECIAL DEMAND		0		1.00		0		0																					
TOTALS		18470				12653																							
TOTAL AMPS CONNECTED AT 208Y/120V 3PH 4W WITH LCL								55 A																					



LUMINAIRE SCHEDULE							
Symbol	Label	QTY	Manufacturer	Catalog	Lamp Output	LLF	Input Power
	F1	24	WILLIAMS INDOOR	97-42,79-849-FR-DIM-UNV	7761	0,75	57,3
	F2	4	LSI INDUSTRIES, INC.	XWM-24-ED-06L-40	6706	0,75	47
	F3	2	LSI INDUSTRIES, INC.	WP5LS-42L-20	2271	0,75	20

STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
ENTRY BAYS	+	6.0 fc	7.7 fc	3.7 fc	2.1:1	1.6:1
METAL BUILDING INTERIOR	+	22.1 fc	28.5 fc	12.5 fc	2.3:1	1.8:1
WEST DOORWAY	+	5.2 fc	15.7 fc	2.1 fc	5.6:1	2.5:1
EAST DOORWAY	+	6.2 fc	15.7 fc	2.0 fc	5.8:1	2.6:1



42095 ZEVO DR., TEMECULA, CALIFORNIA 92590-3780
Phone: 951.296.9110 Fax: 951.296.0579 Email: info@wbin.com

CONSULTANT:



412 E. Vanderbilt Way
San Bernardino, CA 92408
Phone: 909.890.3700
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DESIGN WEST ENGINEERING
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS

PROJECT ADMINISTERED BY:
SAN BERNARDINO COUNTY
PROJECT & FACILITIES
MANAGEMENT DEPARTMENT

385 N. ARROWHEAD AVE.
SAN BERNARDINO, CA 92415


PROJECT NAME:

**FIRE STATION 305
PREFABRICATED
METAL STORAGE
BUILDING**

PROJECT # 10.10.1200

8331 CALIENTE ROAD
HESPERIA, CA 92344

ISSUE INFORMATION:

DATE:	INFORMATION:
7-29-24	 PFM 1st PC
8-24-24	BID SET

SHEET INFORMATION:

TK PROJECT NO.: 374-164-22

SCALE: AS NOTED

DATE: FEBRUARY 2024

LOT DATE: —
DRAWING NAME

DRAWING NAME: _____

FAI:



SHEET TITLE:

LIGHTING PHOTOMETRIC PLAN

SHEET NO.:

E2.2

